

AN EMPIRICAL ANALYSIS OF BALANCE OF PAYMENT IN NEPAL USING THE MONETARY APPROACH***Udaya Raj Adhikari**

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Received 20th July 2020; Accepted 25th August 2020; Published online 18th September 2020**Abstract**

A major challenge to the Nepalese economy is the persistence disequilibrium in the balance of payments. This is a general economic phenomenon in most developing countries. This paper analyzes the balance of payments for Nepal using a monetary approach using an annual data set from FY 1990/91-FY 2015/16. The main objective of this paper is to find whether the monetary variables that are money supply, income, price level, interest rate and net domestic assets are responsible to produce fluctuations in the balance of payment of Nepal or not. To achieve this objective, the paper applies a multiple regression model for time series data.

Keywords: Balance of Payment, Monetary Approach, Multiple Regression Model.**INTRODUCTION**

The monetary approach maintains that the Balance of Payment (BOP) are essentially a monetary phenomenon and the root cause in the payments imbalances are the disequilibrium between the demand for and supply of money. This proposition is often called strong version of the monetary approach (Rabin & Yaeger, 1982). One of the major conclusions of the MABP analysis is that the exchange flexibility is unnecessary and that the BOP disequilibrium can only be corrected by policies that rectify the disequilibrium in the domestic money markets. In any event BOP imbalance is said to be self-limiting (Kreinin & Officer, 1978). The monetary approach diverges from other models of the BOP adjustment in two ways. First, it gives a simultaneous analysis of both current and capital accounts by focusing the attention on the official reserves account of the BOP. Hence, MABP obtains a vantage view of overall BOP movements unlike traditional models which deals either with the current account or capital account in isolation. The second divergence of the MABP is the utilization of monetary analysis and portfolio choice theory in its explanation of BOP disequilibria and adjustment. The MABP argues that any disequilibrium in the BOP mirrors an imbalance in the domestic money market and the traditional tools of analysing demand for and supply of money are directly relevant to the analysis of BOP movements.

The MABP particularly stresses following three points (Jhonson, 1976a):

- Balance of payments problems are monetary problems in a world monetary economic system and should be analysed by models that explicitly specify monetary behaviour and integrate it with the real economy, rather than by models that concentrate on real relationships and treat monetary behaviour as a residual of real behaviour.
- Money is a stock, not a flow, and monetary equilibrium and disequilibrium require analysis of stock equilibrium conditions and stock adjustment processes.

- It is essential for balance of payments analysis to recognize that, although money can be obtain from two alternative sources. The two sources are expansion of domestic credit and the exchange of goods or assets for international money and conversion of international into domestic money via the monetary authority.

Like other approaches, the MABP to suffer from a number of shortcomings (Alawode, 1997). Firstly, the existence of a stable money demand function is the cornerstone of the MABP. However, there is no general consensus about the precise specification of the money demand function and no justification is provided for selected specification. Boughton, 1980 has pointed out that there is ample evidence that money demand functions are highly unstable, economies are rarely at full employment, and purchasing power parity is useless as a guide to exchange rate movements. Although these assumptions holds reasonably well in the long-run, but are very rarely fulfilled in the short-run. The empirical violation of these assumptions brings open questions regarding the policy relevance of the monetary approach. However, (Akhtar, 1978) argued that for the MABP, stability of money demand is important rather than the nature of the specification. Secondly, extensive financial liberalization in many countries implies that multiple currencies are freely held by individuals within the same region (Connolly, 1978). If foreign currencies are more stable than domestic currency then individuals substitute domestic currency for foreign currencies. The exchange rate therefore becomes a more relevant argument in the money demand function and the greater the substitution between domestic and foreign currencies, the less stable will be the exchange rate and the money demand function (Alawode, 1997). Thirdly, the MABP assumes instantaneous adjustment of portfolios when money market equilibrium is disturbed. This assumption ignores the fact that there are lags in the adjustment process and it takes time for excess balances to dissipate. If portfolio adjustment is not instantaneous, the linkage between domestic credit and BOP disappeared and a key relationship in the structure of MABP collapses. Therefore, the speed of adjustment is a vital determinant of whether credit policy can correct BOP deficits as MABP predicts.

However, regarding the misinterpretation of the MABP, (Frenkel & Johnson, 1976) stated that:

The monetary approach to the balance of payments asserts neither that monetary mismanagement is the only cause nor that monetary change is the only possible cure, for balance of payments problems; however, that monetary processes will bring about a cure of some kind not necessarily very attractive unless frustrated by deliberate monetary policy action, and that policies that neglect or aggravate the monetary implications of deficits and surpluses will not be useful in their declared objectives. It is argued that the policy proposition of the MABP can only be hold if the change in money demand is independent of the rate of change of domestic credit. This is possible only in the long run. However, in the short run, it is unlikely that nominal income and interest rate will be unaffected by the change in domestic credit. Furthermore, BOP is unlikely to be a monetary phenomenon if domestic credit is not exogenous and can be affected by nonmonetary forces such as tariffs. If stock-flow equilibrium is to be restored after a change in a real variable, the domestic credit must necessarily be changed, implying that domestic credit is endogenous and is determined by real factors in the long run. Therefore, domestic credit may not be a useful policy variable. In this case real analysis of the BOP might be preferable to a monetary one (Curri, 1976). Despite the various shortcoming outlined above, the MABP remains a useful analytical tool for policy purposes. The MABP has continued to serve as the theoretical fulcrum for IMF-sponsored stabilization programmers in developing countries. For example, the monetary approach clearly warns that policy of excessively expansionary monetary policy will lead to a depreciation of domestic currency and BOP deficit via an outflow of international reserves. Hence, for the correction of the BOP deficits, monetary restraint is required.

The MABP contain no clear-cut specification of the dynamics of adjustment to disequilibrium. It simply relates the BOP to changes in money demand and domestic credit, which is the outcome of an adjustment process, but does not describe the channels, through which a disturbance to equilibrium is eliminated .Hence, due to the lack of a clear-cut adjustment mechanism, a substantial degree of confidence in the MABP is impossible. The monetary approach to the balance of payments relates the balance of payments directly to the demand for and supply of money. In a closed economy analysis, the main interest is focused on the effects of variations in the nominal stock of money (monetary base), on interest rate, output and domestic price level. However, in a small open economy, the money supply can no longer be considered an exogenous instrument because it can be made to change through surpluses and deficits in the balance of payments. Therefore, it can be said that the monetary approach to the balance of payments is concerned with the relationship between the domestic component of money stock, prices, output, interest rate and the balance of payments. On the demand side of money, the monetary approach assumes that, in an open economy, price, income and interest rates are exogenously determined. Being exogenously determining factors, the monetary authority cannot influence the demand side of the money. So, the demand side of money has to be controlled through the supply side of it. So, when the nominal or actual demand for money increases, there will be a tendency for reserve inflows and when demand for money decreases it tends to outflow of the international reserve. This shows that money supply and money demand have a relationship with international reserve or balance of payments.

LITERATURE REVIEW

Literature on the fundamental basis of the MABP in a country has been generated by scholars such as (Dornbusch, 1971), (Frenkel & Johnson, 1971), (Laffer, 1969), and (Mundell, 1971). Mundell (1971) emphasized that monetary factors, not the real factors, exert the most influence on the balance of payments through their effects on the currency and capital accounts of a country. He also contended that disequilibrium in a country's balance of payments shows an equivalent discrepancy between that economy's money demand and supply (Alawode, 1997). The balance of payments account records a country's international economic performance, with the two most significant accounts being the current account and capital account. Whereas the current account records all transactions of goods and services and unrequited transfers in a country, the capital account records all exchanges and money capital for various kinds of real or financial assets. The latter account is important as it relates domestic transactions to international transactions (Fleermuys, 2005).

The monetary approach to balance of payments (MABOP) is a long-run theory that originated much earlier than the elasticity and absorption theories. The approach can be thought of as the modernized version of the specie flow theory propounded by David Hume in the mid-1700's. According to this approach the BOP consists of the current account, capital account and the official reserves account. The main proponents of the monetary approach to BOP surfaced in the late 1960's and throughout the 1970's and these were Robert A. Mundel, Harry G. Johnson, Jacob A. Frenkel, David I. Meiselman, Marc A. Miles and Arthur B. Laffer. It was later advanced by the International Monetary Fund (IMF) economists with the view of restoring the role that money and money balances play in the adjustment process. The approach which is based on the general equilibrium framework views the overall balance of payments as essentially a monetary phenomenon. Under a fixed exchange rate system, excess money supply results in increased domestic spending and this increases domestic demand for foreign goods. Foreign exchange reserves are eventually used to finance the high demand and this worsens the BOP. The outflow of the foreign exchange will reduce money supply until equilibrium is restored. Excess demand for money will require the opposite adjustment. Defining the balance of payments mechanism as essentially a monetary phenomenon does not imply that only money plays a key role, the approach takes into consideration the influence of real variables such as interest rates and the level of income on the BOP behavior, (Mussa, 1974).

The MABP has largely been criticized for emphasizing monetary factors without taking into account that real factors also play a role, as it argues that balance of payments is in effect a monetary phenomenon. Nevertheless, the fact that the MABP is said to be a monetary phenomenon does not mean that it claims all other factors are unimportant. Rather, the approach explains that, since disequilibria in the balance of payments are caused by monetary imbalances, it would be more appropriate to use policy solutions that rely on monetary policy. An enormous number of studies have emerged throughout the years testing the validity of the MABP empirically. There is credible evidence that the MABP in fact applies to small open economies with fixed exchange rates. Most parts of the empirical literature were based on the 'reserve-flow equation', where a country's international

reserves, or the rates of change in reserves, are regarded as the dependent variable. On the other hand, the independent variables vary in the different studies. They can include domestic income, prices, the interest rate, government expenditure, money multiplier, money stock, the exchange rate, and demand for nominal and real money balances. (Umer, Muhammad et al, 2010). (Watson, 1990), in a study where he modelled Trinidad and Tobago's balance of payments for the period 1965–1985, found that, although all the other variables were significant and had the correct signs, modelling the change in international reserves as the dependent variable found a coefficient which was less than 1; thus, it was not in accord with what the MABP predicted. A study by Jimoh (1990) also found strong evidence of the MABP in Nigeria. His suggestion (ibid.74) was that “monetary authorities in Nigeria must pay adequate attention to domestic credit creation in any of their attempts to control balance of payments in Nigeria”. (Dhliwayo, 1996) studied “the monetary approach to Zimbabwe's balance of payments during the period 1980 to 1991”. It examines whether excess money supply played a role as a disturbance using multivariate cointegration and error-correction modelling. The empirical results suggest that money played a significant role in determining the balance of payments. The one-to-one negative relationship and strong link between domestic credit and the flow of international reserves is established

McNown, 1980 conducted a test on the monetary approach to balance of payments for Nepal for the period of 1958-1978. He observed macroeconomic policy variables such as, import quotas, tariffs, dual exchange rate regimes and export promotion activities designed to correct the balance of payments were ineffective. Rather he found that there is one for one relation between net domestic creation and the loss of foreign assets. And, he has recommended that domestic credit creation or contraction is more effective tool which can correct the deficit in the balance of payments for long period of time. Mainaly, 1981 tried to find out significant factors causing balance of payments problem in Nepal. He used Johnson's small country model and Aghevli Khan Model to analyze the data for the period of 1964-1980. The study shows that domestic credit creation can be used effectively to influence surplus or deficit in the balance of payments. This study also shows that an increase in income increases the overall balance of payments. He also found that the use of exchange rate as a policy variable will not help to correct the balance of payments problem. His study reveals that the monetary approach to the balance of payments is an efficient tool to study the balance of payments problem of Nepal.

Upadhyaya, 1983 analyzed the balance of payments in Nepal for the period of 1974-82. He separated total imports from India and imports from other countries. Expenditure elasticity of imports for India was lower than that from other countries. In general, imports from India were found inelastic but those from the rest of the world were found highly elastic. Goods imported in Nepal were found price inelastic in the long run in the study. Upadhyaya found that an increase in net domestic asset increases money supply and to some extent the expenditure, GDP, price and imports in the short run. But in the long run, the growth rate of imports was found more influenced than other variables. An increase in imports causes a deficit in the balance of payments as it reduces the net assets holding of the central bank. He concluded that the use of credit policy by the Nepal Rastra Bank to enhance the long run

growth of the Nepalese economy is inappropriate because it would bring about a permanent decrease in international reserve of the country. He further analyzed the relationship between deficit financing and balance of payments in Nepal for the period of 1970-82. He found out that an increase in the government expenditure increases government demand for credit from the central bank which ultimately increases money in which in turn increases domestic price level and imports. Increase in imports raised current account deficit, which in turn, had a negative effect on the international reserves of the central bank. According to his findings there was positive association between government expenditure and credit creation and negative association between the domestic credit creation and the international reserves of the central bank. Khatiwada, 1976 tested the impacts of different economic variables on the balance of payments of Nepal for the period of 1965-1990. He found that nearly one to one negative association between changes in net domestic credit and NFA of the monetary authority. Money multiplier and required reserves were found significant factors affecting NFA negatively and positively respectively. In his findings, real income and domestic prices were found significant positive effect on NFA. The coefficient of foreign prices were found less significant indicating that Nepal does not have a perfectly open economy, i.e. domestic price are not determined by international prices alone. Results of his test show that changes in exchange rate have no impact on foreign assets flow. It is because the variable was found insignificant in his study. Furthermore, he says that exchange rate adjustment should be viewed as a tool to stabilize price rather than the balance of payments.

Shah, 1993 analyzed the balance of payments problem of Nepal for the period of 1964-92 and tried to detect the significant factors that influence balance of payments in Nepal. She found that domestic interest, money multiplier, net domestic assets, changes in GDP and India's expected rate of inflation are significant factors to influence Nepal's balance of payments. In her study, Indian bank interest and money market interest have a positive impact on balance of payments in Nepal, but were not found significant. She recommended that government should regulate monetary variables to bring favorable position in balance of payments. According to Shah, the major monetary variables are interest, expected inflation, money multiplier, net domestic assets and high powered money. She also recommended that Nepal should closely observe and monitor the change in India's expected rate of inflation and take corrective countervailing measures. Most of the empirical studies carried out have focused on using the vector error correction mechanism and other method of analysis without using the impulse response function and variance decomposition to analyze the MABP in Pakistan, Namibia and Bangladesh. Effort was made to use the log linear model to analyze MABP in Nepal in this study. This study intends to fill this gap. Therefore, it would be interesting to empirically verify using the simple multiple regression model to determine whether balance of payments is a monetary phenomenon or not during the period of study.

MATERIALS AND METHODS

Model Specification

The model aims to illustrate whether monetary variables are fundamental in determining the balance of payments in Nepal.

In order to test this role, the study employs the standard model of the MABP. The equation and expected sign of the coefficients are as follows:

$$BOP = \beta_0 + \beta_1 MS + \beta_2 INF + \beta_3 INT + \beta_4 NDA + \beta_5 Y + \mu$$

Where, BOP = Balance of Payments, MS = Money supply, INF = rate of inflation, INT = Interest rate, NDA = net domestic assets, μ = stochastic or error term

There are several variables which determine the BOP position of a country, viz., national income at home and abroad, exchange rate of national currency, prices of goods and factors, international oil and commodity prices, the supply of money, the rate of interest, etc. all of which determine exports, imports and demand and supply of foreign currency. A fundamental equation with the BOP as dependent variable and other macroeconomic variables such as real GDP, inflation rate, interest rate and the domestic asset to money supply are considered as independent variables. A multiple regression model has developed to explore the relationship, where the balance of payments is taken as dependent variable and real GDP, inflation rate, rate of interest rate and the domestic credit are taken as independent or influencing variables. The result obtained from the regression equation is given as: If all other remaining constant, the estimated regression equation is as follow.

$$BOP = 63.079 - 0.026 MS - 0.0886 INF - 2.032 Y + 0.640 INT + 0.271 NDA$$

Sources of data

This study is conducted with the help of secondary data. The macroeconomic variables of interest (inflation and interest rate, GDP Growth) were obtained from the Ministry of Finance (MOF), Central Bureau of Statistics (CBS) and Nepal Rastra Bank (NRB).

Data Analysis Technique

Annual time-series data on the variables under study covering thirty year period (1990-2016) are used in this study for estimation of functions.

The study employs multiple regression model in the estimation of the coefficients of the parameters. The strength of the coefficients derived from multiple regression model was used to establish the relationships between the dependent variable and the independent variables. Various tools such as t-test and F-test were used to test for significant and overall fitness. Data obtained was analyzed using statistical software such as SPSS and Excel application software.

RESULTS AND DISCUSSION

The summary of the regression result in above table-1 shows that, in the short run when the value of explanatory variable that is money supply, inflation rate, Real GDP, interest rate and the net domestic assets are held constant at zero value, the average value of balance of payments is 63.079 units. The coefficients of the different explanatory variables are explained below. It can be said that the estimated coefficients have all expected sign. The coefficient of the money supply is - 0.026 implying that one percent increase in money supply decreases the balance of payments by 2.6 percent. Similarly one percent increase in inflation and the real GDP will also decrease balance of payments by 0.886 percent and 2.032 percent respectively as shown in above table 1. Likewise, one percent increase in interest rate and the net domestic assets will increase balance of payments by 64 percent and 27.1 percent respectively. The 't' values of the coefficient of money supply is - 0.0271, which is significant, that is if money supply increases, balance of payments is decreased. Again, the 't' values of the coefficient of inflation and real GDP are - 0.690 and -1.231, which are significant, that is if both inflation and real GDP are increased respectively, balance of payments will decrease. Likewise, the 't' values of the coefficient of interest rate is 0.196, which is insignificant, that is if interest rate increases, balance of payments is increased. Again, the 't' value of the coefficient of net domestic assets is 1.680, which is insignificant, that is if net domestic assets increases, the balance of payments also increases. From the Table-2 it can be said that the fitted line is reasonably good, where the goodness of fit, R^2 value is 0.880. That is, almost 88 % of the variation in the balance of payments (BOP) in Nepal is explained by, money supply, interest rate inflation, net domestic assets and real GDP. The adjusted R^2 is 0.88.

Table 1. Simple Linear Model

Full period (1990 -2016)		Annual Data				
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	63.079	81.558		.773	.448
	MS	-.026	.097	-.250	-.271	.789
	INF	-.886	1.285	-.061	-.690	.498
	Y	-2.032	1.650	-.507	-1.231	.232
	INT	.640	3.270	.035	.196	.847
	NDA	.271	.162	1.648	1.680	.109

Notes: BOP= Balance of payments; MS= Money supply; INF = Inflation rate

Y = Real GDP; INT = Interest Rate; NDA = Net domestic asset

Table 2. Model Summary

Model	R	R Square	Adjusted R Square	SEE	Change Statistics					DW
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.938	.880	.850	20.78870	.880	29.277	5	20	.000	2.365

Notes :

a. Predictors: (Constant), NDA, INF, INT, Y, MS

b. Dependent Variable: BOP

R^2 = the degree of explanation of the dependent variable; SEE = Standard error of estimates; F = F statistic for the joint significance of all coefficients;

DW =Durbin Watson statistic for the presence of autocorrelation

Table 3. ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	63263.871	5	12652.774	29.277	.000
Residual	8643.403	20	432.170		
Total	71907.274	25			

Notes:

a. Predictors: (Constant), NDA, INF, INT, Y, MS

b. Dependent Variable: BOP

R²: The degree of explanation of the dependent variable.

SEE: Standard error of estimates

F: F statistic for the significance of all coefficients

The value of d-statistic is 1.312. For $n = 26$ and $k = 5$ Durbin-Watson statistic $d_L = 0.979$, and $d_U = 1.873$ at 5% level of significance. Since $d_L < d_U$, so there is statistically significant evidence of positive autocorrelation. According to Table-3 the value of the F – statistic is 29.277, while the critical values for F are 3.32 at 5% and 5.39 at 1% level of significance which indicates that R² is statistically significant. On the whole, the estimated equation is found significant.

FINDINGS

- The monetary approach suggests itself as simpler and more manageable than the other approaches. It is based on the postulates of a stable demand function for money and of a stable process through which the money supply is generated. By focusing directly on the relevant monetary aggregates, this approach eliminates the intractable problems associated with the estimation of numerous elasticities of international transactions and of the parameters describing their interdependence, which are inherent in other approaches.
- This paper therefore is concerned with testing the relevance of the monetary approach to the balance of payments problems in Nepal. It involves finding a stable demand for money function and then using it to estimate the desired demand for money in Nepal for the period of the study (1990 - 2016). The analysis system developed, uses changes in desired demand for money and changes in domestic credit. If an increase in desired demand for money is greater than an increase in domestic credit. Then it is expected that there would be a positive change in international reserves, and if, on the other hand, changes in domestic credit is greater than changes in desired demand for money then a negative change in international reserves would be expected.
- The study in the end identified the role excess money supply have on balance of payment disequilibrium. However, the findings show that the balance of payments disequilibrium in Nepal is not solely due to the influence of monetary variables. Over all, money supply, inflation, income level, interest rate and net domestic asset affect balance of payment or the international reserves of Nepal.
- The statistical results showed that monetary variables do not play an overwhelming role in determining Nepal's balance of payments. The significant relationships were found among money supply, real GDP, inflation and balance of payments, which reflected a strong negative relationship, while reflected a strongly positive relationship among interest rate and net domestic assets and balance of payments as posited by the monetary approach to balance of payments.
- The policy implication for the Nepalese economy is that, increases in credit creation lead to a continuous loss of reserves. Thus, monetary authorities should pay special attention to domestic credit creation when controlling the country's balance of payments.
- Furthermore, it is important that the country achieves sufficient economic growth through money demand to correct the balance of payments deficit.
- Nepal should also pursue fiscal policies that do not result in large budget deficit. Excessive public debt negatively impact on balance of payments. The expansion in fiscal deficit leads to increase in domestic credit which has been shown to impact negatively on balance of payments.
- For further studies it is suggested that a much larger sample size than the one adopted for this research should be used. In addition other non-monetary variables such as Government expenditure should be included to achieve a comprehensive picture of variables that significantly affect 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.
- The result obtained from the regression analysis shows that 1 percent increase in the real GDP leads to 2.032 percent decrease in the balance of payments. Similarly, one percent increase in the price level leads to 0.886 percent decrease in the balance of payments. In the same way, one percent increase in the money supply leads to 0.026 percent decrease in the balance of payments, 1 percent increase in the rate of interest leads to 0.64 percent increase in the balance of payments and 1 percent increase in the net domestic asset leads to 0.271 percent increase in the change in balance of payments. However, two macroeconomic variables such as rate of interest and net domestic assets are not found significant, but, other three macroeconomic variables, money supply, inflation rate and real GDP are found highly significant in the study.

The MABP, therefore, provides a convenient framework for the analysis of monetary disequilibrium in the economy. While taking into account the balance of payments in Nepal, it is evident that there has been a continuous surplus in the balance of payments since 1986. It has a direct impact on money stock in the absence of active and regular sterilization policies of the Nepal Rastra Bank.

The Financial market in the economy is also narrow and rudiment. Due to these circumstances, the NRB has not yet been able to neutralize the expansionary effect of BOP surpluses on the money supply. Thus, in such a situation, the analysis of BOP through monetary approach as a determinant in the demand for money would be expected to restore the monetary equilibrium in the Nepalese economy.

Conclusion

Countries that are not self-sufficient require substantial amounts of foreign exchange reserves in order to fulfil the world demand for it. Net importers like Nepal need good management of foreign exchange reserves as they are used to cover import bills. Excessive accumulation of reserves however increases domestic money supply which in turn affects macroeconomic variables such as interest rates, production, employment, imports, exports, price level and exchange rates, ultimately affecting a country's balance of payments. The monetary approach to the balance of payments relates the balance of payments directly to the demand for and supply of money. In a closed economy, the main interest for analysis is focused on the effects of variations in the nominal stock of money (monetary base), on interest rate, output and domestic price level. However, in a small open economy, the money supply can no longer be considered an exogenous instrument because it can be made to change through surpluses and deficits in the balance of payments. Therefore, it can be said that the monetary approach to the balance of payments is concerned with the relationship between the domestic component of money stock, prices, output and the interest rate. With the help of the empirical findings of this study, it can be recommended that there are several economic variables that have significant impact on the change in NFA in Nepal. If these economic variables are left free, they can make far reaching adverse impact in the NFA of the country. Therefore, for efficient management of foreign assets reserve and to achieve stable and favourable BOP position following measures are recommended:

The monetary approach to the balance of payments is an appropriate tool to study BOP problem of Nepal. And, at present, to solve the BOP problem of Nepal effectively, the monetary measures should be applied. The domestic credit which is very much influential among the four variables exerts negative impact on the NFA of the country. Thus, domestic credit must be taken as the policy variable and controlled to correct BOP in Nepal. This study has considered only five macroeconomic variables such as money supply, income, inflation, interest and net domestic assets. Additional study should be performed in future including more variables as well as further econometric models and econometric test.

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Notes: The Data Series Used in the Regression Model

FY	BOP	MS	INF	Y	INT	NDA
1990/91	4.13	31.55	9.52	26.40	11.50	22.21
1991/92	3.39	37.71	21.12	27.69	11.80	21.56
1992/93	7.74	45.67	8.72	28.64	12.00	24.88
1993/94	6.28	58.32	8.96	30.91	12.00	29.20
1994/95	7.74	69.78	7.79	31.84	8.80	33.56
1995/96	6.28	80.98	8.03	33.67	8.80	43.90
1996/97	-0.31	92.65	8.18	35.39	10.30	54.95
1997/98	-1.08	103.72	8.25	36.56	10.30	63.53
1998/99	3.20	126.46	11.43	38.23	9.80	70.89
1999/00	10.97	152.80	3.42	40.57	8.40	87.77
2000/01	5.22	186.12	2.48	41.34	6.90	105.65
2001/02	-3.34	214.45	2.96	41.41	6.10	126.66
2002/03	4.36	223.99	4.70	42.97	5.30	135.57
2003/04	16.01	245.91	3.99	44.87	5.00	154.50
2004/05	5.74	277.31	4.56	46.32	4.30	168.51
2005/06	25.60	300.44	8.03	48.04	3.65	192.70
2006/07	5.90	347.42	5.73	49.37	3.65	207.98
2007/08	29.67	395.52	6.83	52.23	3.65	263.61
2008/09	47.72	495.38	12.59	56.35	4.25	323.92
2009/10	-3.11	630.52	9.52	56.58	5.75	402.85
2010/11	4.09	719.60	9.60	58.75	3.20	503.24
2011/12	131.63	921.32	8.21	61.46	4.50	700.05
2012/13	68.94	1130.30	9.90	63.78	5.60	746.53
2013/14	127.13	1315.38	9.12	67.42	8.80	847.14
2014/15	145.04	1565.97	7.18	68.98	6.70	966.75
2015/16	188.95	1877.80	9.50	69.52	8.00	1130.51

Source: NRB, Quarterly Economic Bulletin (Vol.48) Mid-July 2016 Note: 1. MS, Broad Money supply is in Rs. Billion 2. P, Price Level, is Nepalese CPI Basket (2014/15=100) 3.NDA =Net domestic assets 4. Y, Real GDP, is in Rs. Billion at 2000/01 5. INF, Inflation rate 6. INT, Interest Rate, one year fixed deposit rate of commercial banks
