Deriving Forces of Macroeconomic Instability: A Case of Developing Nations

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Abstract

The purpose of this study is to investigate empirically the role of internal and external shock in macro-economic fluctuations. This study used quarter data for internal, monetary policy, fiscal policy, and external shocks, foreign direct investment, foreign aid, trade openness, from world development indicator for 56 developing countries over the period of 1960Q1 - 2013Q4. Study employed Vector Error Correction Model (VECM) to assess long run relationship between internal and external shocks and macroeconomic instability. Moreover, study employed variance decomposition and impulse response function to assess the relative importance of internal and external shocks and to forecast the response of macroeconomic fluctuation in time t + n when one standard positive or negative shock is given to VAR system of internal and external sources at time t while no other shock hits the system in developing nations. The results show that fiscal policy causes to amplify the macroeconomic fluctuation while monetary policy causes to dampen them. Moreover, external factors FDI and trade openness positively and significantly affect economic fluctuations while official development assistance negatively and significantly affects economic fluctuations. The results indicate that in developing countries combination of internal and external policies are required to stabilize the economic fluctuation. Study helps the policy maker to formulate appropriate policies to stabilize the economic activities.

Keyword: Economic Instability, Variance Decomposition, Impulse Response, VAR System.

1. Introduction

Before 1930s, macroeconomic fluctuations were seen periodically and classical economists considered them as a normal fact of life. They believed that automatic forces resolved them, so no serious attempt was made to identify the sources behind macroeconomic instability but the tragic effects of great depression left profound influence on economic and political thinking. Since then, economists are identifying different internal and external sources that can be utilized as stabilizing tool to smooth economic fluctuations (Altug, Neyapti, & Emin, 2012). Therefore, the role of internal and external sources of macroeconomic fluctuations has been on the theoretical and applied research agenda for economists and policymakers since the evolution of macroeconomics. Although macroeconomic instability strongly affects the economy but the size of impact differs across countries depending on the policies and structural characteristics of the country. In the context of developing nations, sharp and persistent economic fluctuations are observed; thereby, in developing economies the determination of driving forces of macroeconomic fluctuation is crucial.

Theoretical literature regarding policy variables can be divided into two main stand point; Keynesians and monetarists. In the early decades of sixties, Keynesian economists argued that counter cyclical role of fiscal policy during macroeconomic instability can save the economy from disastrous effects but empirically it has been observed that fiscal policy is pro cyclical in developing countries and aggravates business fluctuations rather to stabilizing them (Altug et al., 2012; Calderón & Hebbel, 2008). Narrow and rigid tax structure and inappropriate execution of government development project in developing economies exacerbate economic instability (Popa & Codreanu, 2010). Contrary, monetarists presented famous "K-percent" money growth rule to stabilize macroeconomic fluctuations (Gramlich, 1971). Moreover, it has been observed in developing economies that government adopts pro-cyclical policies, monetary and fiscal, to stabilize the economic fluctuation which ultimately results high output volatility. Likewise during 2008, recession, U.S government executed fiscal policy with more than 1 trillion budget deficit and monetary policy with minimum interest rate to control rapid decline in economic activities but failed to stabilize macroeconomic fluctuations (Tassey, 2012). Contrary, it has been recognized that unanticipated monetary policy effect output six times larger than anticipated policy and play a decisive role in price and output instability (Blanchard, Dell'Ariccia, & Mauro, 2010; Stock & Watson, 2005). Therefore, the role of policy

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variables in theoretical and empirical literature clashes, it motivate the researcher to investigate their role in economic fluctuations (Burnside, Eichenbaum, & Fisher, 2004; Cotis & Coppel, 2005).

The economic instability is two to five times larger in poor nations as compare to rich countries; it indicates that developing countries are unable to absorb the consequences of internal and external shock. The extent of external shock depends on structural characteristic of the developing nations. The business activities of developing economies are usually dependent on trade integration, foreign aid and foreign direct investment and cause the economy more open to external shocks, so any sudden shock grounds to upset the economic activities. Therefore, the reliance of developing countries on foreign resources for growth invites the researchers to investigate the quantitative impact of external shocks in macroeconomic fluctuations.

Some studies (Buckle, Kim, Kirkham, McLellan, & Sharma, 2007; Kamin, 2010), emphasized that internal shocks are more important while explaining the causes of fluctuations in developing nations. Contrary some studies (Raddatz, 2007), found that external shocks are more contributive than internal shocks. The aim of this study is to assess the role of internal and external forces in macro-economic instability and to forecast the response of macroeconomic fluctuation in time t + n when one standard positive or negative shock is given to VAR system of internal and external sources at time t while no other shock hits the system in developing nations.

2. Literature Review

2.1 Internal Shocks and Macroeconomic Instability

No doubt, fiscal policy play vital role in economic activities of developing nations and almost 30% variations in economic activities across the countries are caused by the difference in government expenditure and revenue system (Blanchard & Perotti, 2002; Taylor, 2000). Fiscal policy stabilizes ups and downs in economic activities through automatic stabilizers like progressive tax system, unemployment allowance and subsidies (Y. Lee & Sung, 2007). However, some studies found that fiscal policy are unable to stabilize economic disturbance because when government expenditure increases that ultimately crowd out private investment and exacerbate economic fluctuations. Negative crowding out effect of private investment offset the benefits of increase in govt. expenditure and increase the intensity of economic fluctuations (Mountford & Uhlig, 2009) and government developmental projects deepen the macroeconomic instability rather than to stabilize them (Romer & Romer, 2010). Similarly, theoretical literature stated that monetary policy help the policy makers to stabilize economic instability but empirical literature documented that quantity of money is unable to stabilize fluctuation in output and inflation (Gerlach & Svensson, 2003; Ireland, 2007). Therefore, theoretical literature recommended the role of monetary policy and fiscal policy in output, investment and consumption fluctuation (Bouakez, Cardia, & Ruge-Murcia, 2005) but empirical literature unable to offer conclusive evidence and open the door for further investigation.

2.2 External Shocks and Macroeconomic Fluctuations

Continuous and persistent fluctuations in economic activities of developing countries reflect two important realities; first these countries are more exposed to external shock such as foreign direct investment, foreign aid and trade openness and second they are defenseless against these shocks.

It has been observed that at initial stage of growth, the process of trade liberalization is more rapid in developing economies than developed (Tomz & Wright, 2007) and last two decades witnessed that the trade integration policies got popularity generally within economies of the world and particularly in developing nations. Although trade openness enhance total production of goods and services by introducing specialization in production process but at the same time, if developing economies failed to get access in international market (Arellano & Mendoza, 2002; Mendoza, 1991; Mendoza & Uribe, 2000), it will causes a sudden collapse of economic activities and push the economic toward macroeconomic instability. Therefore, the countries which are integrated horizontally and vertically through tight knit supply chain network have greater exposure to trade shocks (Charlton & Stiglitz, 2008; Torres & Vela, 2003). Therefore, trade liberalization augment economic prosperity in developing nations by providing greater access to international markets and by minimizing country-specific risk. Similarly, trade liberalization leads can also lead them to greater fluctuation in output as they lose their share in international markets. During last few decades, empirical literature debated a lot about the relationship of trade integration and macroeconomic

instability but did not reach on a decisive conclusion because some studies (Wacziarg & Welch, 2008), found that trade and financial liberalization increase macroeconomic stability and reduce the amplitude of the business cycle, whereas other studies (Ranciere, Tornell, & Westermann, 2006) found that trade liberalization may increase the probability of large but rare crises.

Therefore, it has been concluded that higher TO brings vibrant changes in the production pattern of tradable industries and could generate fluctuation in aggregate economic activities because more open economies have a lower ability to react to specific shocks in traded industries and their transmission across countries.

The empirical literature is unable to present a clear picture of the significant impact of trade liberalization on the economy's overall long-term output fluctuations. There has been much discussion in the empirical literature on the view that trade integration causes business cycle synchronization (Baxter & Kouparitsas, 2005; De Haan, Inklaar, & Jong-A-Pin, 2008; McKinnon, 1963; Mundell, 1961), but the size of influence of trade integration on country-specific macroeconomic volatility is a less researched area. Moreover, as trade and financial integration increases among the economies of the world, concerns about the impact of globalization on economic activities have grown (Abiad, Mishra, & Topalova, 2014) and efforts have been made to investigate the role of trade integration in economic disturbance in the theoretical literature as well as in the empirical literature.

Another important external source of fluctuation in output is foreign aid. Foreign aid is a flow of financial and non-financial resources from developed countries toward developing economies. Developing economies are heavily dependent on foreign aid to execute their developmental projects smoothly and successfully but it has been observed that disbursement of foreign aid is highly volatile and causes disturb the fruits of economic development projects. Therefore, aid disbursement patterns contribute to fluctuations in disposable income and output of developing countries. The behavior of macroeconomic activities in aid-recipient countries is several times irregular than donor countries which reflect volatility in disbursement to developing nations. Although the welfare cost of massive macroeconomic disturbance have larger consequences for the economies of developing nations (Pallage & Robe, 2001) but it is very difficult for developing nations to adopt customary ways to smooth output fluctuation. Usually literature considered that foreign aid provide relief at time of need and emergency in developing nations but the role of foreign aid in economic instability is not clear (Asiedu & Villamil, 2002). Three different stand points about the role of foreign aid in economic activities of developing nations exists; first, foreign aid generates Dutch disease and is harmful and ineffective for economic prosperity because it nurture the problem of corruption and dishonesty (Booth, 2012; Wright & Winters, 2010), second, foreign aid foster economic progress and alleviate poverty in poor nations (Angeles & Neanidis, 2009; Stiglitz, 2002) and third The third group of studies identified an effective and specific role of aid for those countries that are trapped in perpetuating destitution and are trying to foster macroeconomic activities (Banerjee, 2011; Collier & Hoeffler, 2007). Therefore, the literature does not provide clear explanation of foreign aid in economic activities and invites the researchers to rethink about the role of foreign aid in business cycle fluctuations.

2.3 Research Questions

What is relationship between monetary policy and macroeconomic fluctuation?
What is relationship between fiscal policy and macroeconomic fluctuation?
What is relationship between FDI and macroeconomic fluctuations?
What is relationship between ODA and macroeconomic fluctuations?
What is relationship between trade openness and macroeconomic fluctuations?
What is relative contribution of internal sources in macroeconomic fluctuations?
What is relative contribution of external sources in macroeconomic fluctuations?
What is the response of macroeconomic fluctuation in time t + n when one standard shock is given to VAR system of internal and external sources at time t?

3. Methodology

Mostly, empirical literature utilized Vector Auto Regressive (VAR) models to investigate the effectiveness of internal and external shocks (Buckle et al., 2007). VAR is appropriate methodology when the researcher wants to estimate a system of equations because it incorporates concurrent and lagged

interconnections that exist between variable of interest. Similarly VAR models produce more reliable estimates of multivariate time series analysis and enables the researcher to perform impulse response function to forecast error variance of each of the variables that can be explained by exogenous shocks to the other variables (Campbell & Ammer, 1993). The decision criteria to adopt restricted or unrestricted VAR models depend on the order of integration and the presence of long-run equilibrium among stationary time series. In this study the variables are stationary at first difference and co integration among variable exist, so study employed VECM to realize the purpose of estimation and forecasting, impulse response analysis. Moreover, , VECM is useful to estimate the short-term and long-term impact of one time series on another (Lütkepohl, 2007) and error correction term depicts short-term dynamics of the model (Mulligan, 2005).

Error Correction Model is simply defined as:

$$\Delta y = \delta + \beta 0 \Delta X_t - \Pi \cup_{t-1} + \epsilon_t$$

β0 depicts size of impact on dependent variable due to changes in the independent variable in short-run period. Π is the ECT, which indicates the speed of recovery from period to period if any external shock deviates the model from equilibrium path. When we use above single equation of ECM in a multivariate system it will be extended into VECM. Furthermore, study defined VECM as:

$$\Delta GDP_{it} = \propto_{1j} + \gamma_{1i} ECT_{it-1} + \sum_{k=1}^{m} \beta_{11ik} \Delta \ m2_{it-k} + \sum_{k=1}^{m} \beta_{12ik} \Delta \ GE_{it-k} + \sum_{k=1}^{m} \beta_{13ik} \Delta \ FDI_{it-k} + \sum_{k=1}^{m} \beta_{14ik} \Delta \ ODA_{it-k} + \sum_{k=1}^{m} \beta_{15ik} \Delta \ TO_{it-k} + \varepsilon_{1it}$$

4. Results

Prior to statistical analysis, study checked the staionarity, constant means, variances and covariance of data, of the variable to avoid spurious relationships. Staionarity of data implies assurance of sensible relationships to derive policy implications. This study used Levin, Lin, and Chu (2002), and Im, Pesaran, and Shin (2003) test to check the stationarity of data. The results of unit root test are reported in table 1 which indicates that all series are non-stationary at level, so all variables are differenced once to make them stationary. The calculated values of LLC and IPS clearly reject null hypothesis that variables do have unit root at first difference. In the next step study used Johansen system co integration test to detect long run relationship among variables. Results are reported in table 2 which shows there in the VAR system at least two time series equations are co integrated in the long run. Furthermore, study proceeded with VECM to estimate the short run association among multivariate time series.

Table No. 1: Unit Root Test

Ind. var	Method	Level	1st difference
GDP	LLC	11.8394	-5.42932*
	IPS W-stat	-6.21829*	-14.3912*
gexp.	LLC	3.73858	5.16586*
	IPS W-stat	2.67851	-6.61152*
M2	LLC	0.56190	-2.07777*
	IPS W-stat	0.78692	-15.8317*
FDI	LLC	3.53473	-25.6411*
	IPS W-stat	-1.00306	-15.0573*
ODA	LLC	-1.16566	-23.2466*
	IPS W-stat	-3.74127	-22.9811*
Trade	LLC	10.1711	-3.57342*
	IPS W-stat	-6.09606	-13.3040*

Table No. 2: Co-integration Test

Hypothesized No. of CE(s)	Trace		0.05 Critical Value	Prob.**
	Eigenvalue	Statistic		
None *	0.529660	140.9844	95.75366	0.0000
At most 1 *	0.337558	77.62325	69.81889	0.0104
At most 2	0.190413	43.03013	47.85613	0.1318
At most 3	0.166704	25.28668	29.79707	0.1514
At most 4	0.090074	9.967935	15.49471	0.2832
At most 5	0.023981	2.038981	3.841466	0.1533

Study presented the summary of descriptive statistics in Table 3. Results indicate that all variables are normally distributed. The skewness values indicate that GDP, M2, FDI, and trade openness are slightly negatively skewed, whereas government expenditure, GE, and foreign aid, ODA, are slightly positively skewed. The value of kurtosis for all variables, except the GDP, is less than 3, which confirms that data is normally distributed and Jarque-Bera test statistics indicated that all variables are normally distributed. The statistics of Breusch–Pagan-Godfrey test (Obs*R-squared 6.40820 with associated P-value 0.1799) indicated that there is no problem of hetroscadaciticity in the data. Thus, we can proceed with the data for significant policy implications.

Table No. 3: Descriptive Statistics

	GDP	GE	M2	FDI	ODA	TRAD
Mean	4.205028	5.70E+11	28.05089	-73.19E+08	7.63E+08	16.53992
Median	4.572899	3.33E+11	28.19951	-73232657	7.59E+08	17.36442
Maximum	8.418324	3.12E+12	35.23259	-4972747.	1.17E+09	30.81904
Minimum	-1.992360	8.23E+10	20.07104	-7.87E+08	4.57E+08	-2.828850
Std. Dev.	1.896150	5.84E+11	4.337784	2.49E+08	2.20E+08	7.977460
Skewness	-1.125519	2.045302	-0.115263	-1.220724	0.226158	-0.247451
Kurtosis	4.914048	2.960721	1.889663	1.062681	1.668769	2.445948
Jarque-Bera	3.01275	5.5866	4.715304	2.87019	7.248145	2.023637
Probability	0.15500	0.06859	0.094642	0.08789	0.026674	0.363557
Sum	370.0424	5.02E+13	2468.478	-1.92E+10	6.72E+10	1455.513
Sum Sq. Dev.	312.7985	2.97E+25	1637.024	5.38E+18	4.22E+18	5536.669
Observations	88	88	88	88	88	88

Study also conducted lag length criteria to find appropriate lag length. Results are obtained by using different criteria like LR, likelihood ratio, FPE, final prediction error, AIC, Akaike information criterion, SIC, Schwarz information criterion, and HQ, Hannan and Quinn information criterion, to select appropriate lag length. Results of all criteria indicate that 2 is appropriate lag length. Similarly study employed LM test to check VAR residual serial correlation and results indicate that up to lag three there is no serial correlation.

Table No.4: Lag Length Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-6385.069	NA	8.19e+57	150.3781	150.5505	150.4474
1	-5507.045	1611.432	2.04e+49	130.5658	131.7727	131.0512
2	-5333.233	294.4570*	8.08e+47*	127.3231*	129.5646*	128.2247*
3	-5321.154	18.75874	1.46e+48	127.8860	131.1620	129.2037

Table No. 5: VAR Residual Serial Correlation LM Tests

Lags	LM-Stat	Prob
1	18.72167	0.9922
2	7.091114	1.0000
3	26.94363	0.8627
4	198.7022	0.0000
5	18.59994	0.9927

The results of VECM are reported in table 6 which depicts a long run relationship between internal and external shock and macroeconomic disturbance. The VECM confirm a long run equilibrium relationship among variables because estimated error correction term (ECT) is with negative theoretical sign and and having statistical significant T value.

Table No. 6: Long-run Co-integration Equation Based on VECM

Dependent Variable GDP(-1)			
	Coefficients	T. Statistics	standard Error
GE(-1)	-1.79E-10	[-7.85211]	-2.30E-11
M2(-1)	3.19907	[5.02594]	-0.63651
FDI(-1)	-2.00E-07	[-7.05000]	-2.80E-08
ODA(-1)	5.25E-08	[5.41858]	-9.70E-09
TRAD(-1)	-0.70257	[-3.77278]	-0.18622
C	67.28176		
Coint Eq 1	-0.13685	[-0.00580]	
R-squared	0.569813	Log likelihood	-12.02685
Adj. R-squared	0.442102	Akaike AIC	0.762544
Sum sq. resids	6.548875	Schwarz SC	1.341310
S.E. equation	0.319885	Mean dependent	0.059580
F-statistic	4.461720	S.D. dependent	0.428268

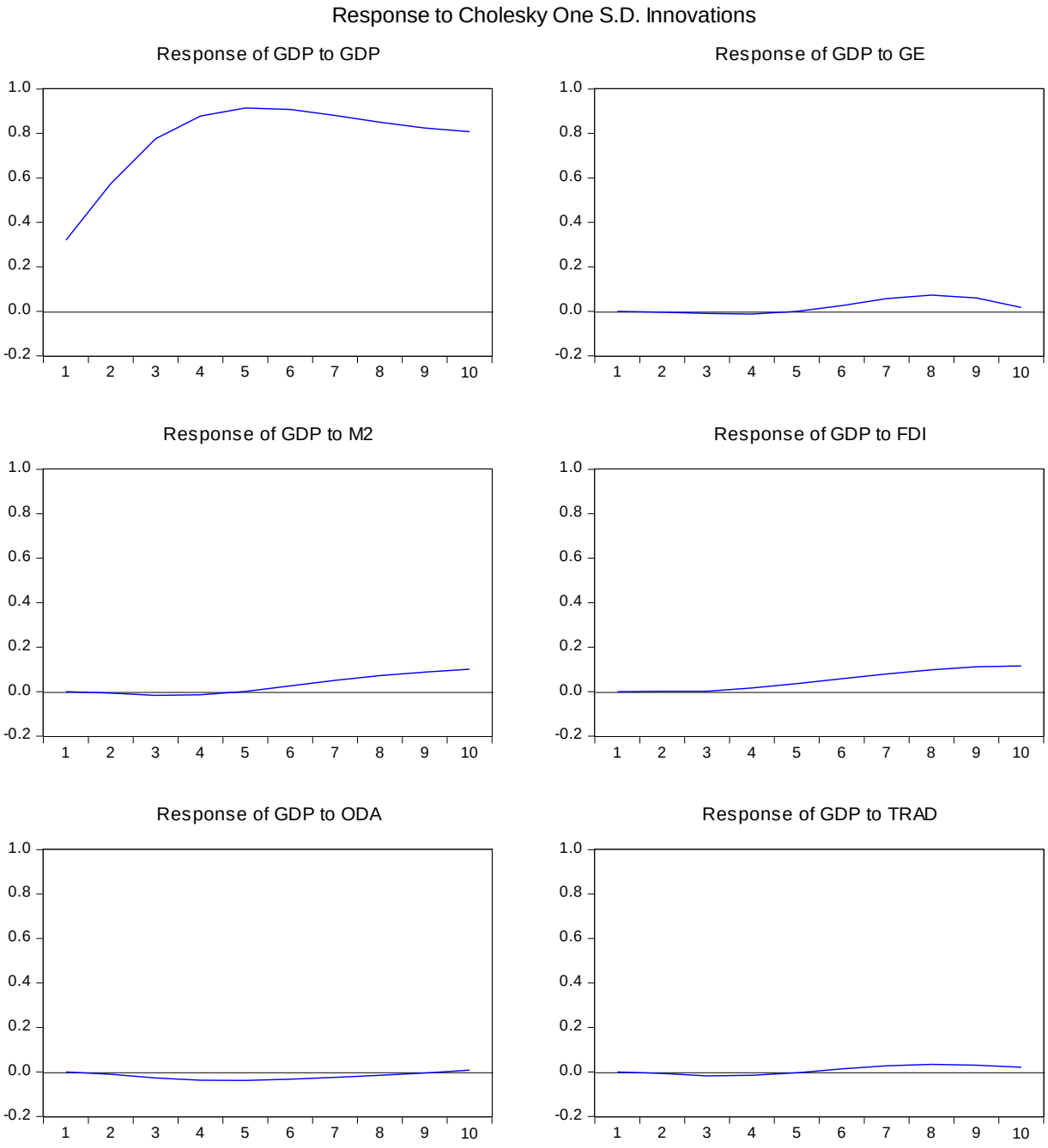
Results indicate that fiscal policy has positive and significant association with macro-economic instability, whereas monetary policy has significant and negative association with macroeconomic fluctuations while FDI and trade openness has positive and significant relationship with macro-economic instability and official development assistance has negative and significant association with macroeconomic fluctuations.

Table No. :7 Variance Decomposition of GDP

Period	S.E.	GDP	GE	M2	FDI	ODA	TRAD
1	0.316372	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000
2	0.638771	99.77221	2.95E-05	2.61E-05	7.12E-05	0.202431	0.025228
3	0.977297	99.44612	0.000178	3.20E-05	0.002677	0.483817	0.067181
4	1.317800	99.13663	0.000855	1.81E-05	0.010403	0.740063	0.112036
5	1.613551	97.73828	1.019901	0.024489	0.023933	1.074527	0.118865
6	1.872268	94.80868	3.398645	0.117663	0.210859	1.364207	1.099944
7	2.098697	91.15319	6.265279	0.312858	0.644582	1.544527	2.072563
8	2.296106	87.34186	9.057783	0.644257	1.271052	1.611187	2.073866
9	2.507971	80.85886	14.66118	1.114252	1.815038	1.477792	2.079869
10	2.745804	72.63852	22.02762	1.485568	2.485472	1.284671	3.078155

Study measured the relative importance of internal and external shocks by utilizing variance decomposition method and results are reported in Table 7. Results indicate that in short run period 100% variation in GDP growth is caused by itself while in the long run its own contribution drops to 72%. Results indicated that GEXP and M2 contribution is 22.63% and 1.48% in GDP fluctuation. However, the contribution of FDI in variation of GDP growth increases from almost zero to 2.48%, while ODA accounts for 1.28 per cent and trade liberalization explained 3.078 per cent variation in GDP. The results are indicating that fiscal has greater contribution in economic instability as compare to monetary policy. Similarly trade openness has greater contribution in macroeconomic fluctuations as compare to FDI and ODA.

Figure No. 1



Study used impulse response function to increases the credibility of VAR econometrics. The impulse response function depicts that how one standard deviation (S.D) shock to one of the equation series affect itself and other equation series in the entire VAR system (M. H. Pesaran & Y. Shin, 1998) (H. H. Pesaran & Y. Shin, 1998). The results of impulse responses are in Figure 1 for 10 quarters forecasted time horizon.

Figure 1 shows response of economic fluctuation to Cholesky One Standard internal and external Source Innovation in developing nation. The study used cholesky-dof adjusted method to serve the purpose of forecasting. Results indicate that one S.D. innovation to GDP increases economic fluctuation up to four quarter but after that it starts to decreases. Similarly when a shock of one S.D is given to fiscal policy, up to four quarter it doesn't affect economic fluctuation but after that it positively contribute in economic fluctuations while a shock to monetary policy doesn't affect economic fluctuations up to 5th quarter and after that it start to contribute positively in economic fluctuations. Similarly, a one S.D shock to FDI, positively affect business cycle after 3rd quarter. However, a Shock to other external forces like ODA and trade openness has negligible role in economic disturbance.

5. Discussion and Conclusion

Results indicate that fiscal policy has significant and positive association with macroeconomic fluctuations and it causes to flare the economic fluctuation rather than to reduce them. Although conventional wisdom stated that rapid countercyclical response of fiscal policy to aggregate demand instability causes to lower output and consumption volatility significantly (M. J. Lee, Laxton, Kumhof, & Freedman, 2009), through two main channels; first, government can attempt to cushion instable national expenditure by making deficit budget to support spending during recession (Blinder & Solow, 1974). Such automatic stabilization occur, if tax structure is directly related with national income and expenditure and government expenditures are independent of economic activities. Second, public finance measures helps to offset macroeconomic fluctuations. Unfortunately it has been observed during 1970-1990 that fiscal policy did efficiently use these stabilizing tools and poorly perform in stabilizing their economies (Fatás, Von Hagen, & Hallett, 2003). During some episodes, it has been observed that fiscal policies aggravated economic fluctuations rather than regulating them and fiscal contractions took place in periods of downturn, whereas fiscal expansions occurred during economic upturn. Thus, deliberate fiscal policies have frequently been pro-cyclical, overriding automatic stabilizers and possibly contributing to economic instability.

The results of this study indicated that monetary policy has negative and significant association with economic instability; so monetary policy paly stabilizing role in developing economies. in developing nations the primary goal of monetary policy is to maintain prices at low level or to control inflation rate because price stability tend to produce macroeconomic stability. Monetary authorities deliberately can change the supply of money during economic downturn and upturn, play significant role in achieving macroeconomic stability (Folawewo & Osinubi, 2006). Therefore, monetary policy held by state bank moderate economic fluctuation by keeping output close to potential level and to keep inflation at lower level. For this purpose money supply is most effective instrument used by monetary authorities at time of macroeconomic instability.

Similarly, in case of developing nations along internal sources, there are some external sources that can help to reduce economic instability or can aggravate economic disturbance. Results indicate that FDI and trade openness has positive and significant relationship with macro-economic instability, whereas official development assistance has negative and significant association with macroeconomic fluctuations. it mean the movement in FDI and economic fluctuation is in same direction. Practically we can observe that foreign investors are interested to invest their money in those countries where they expect high rate of return, so at time of prosperity, FDI increases which in turn aggravate economic boost and at time of recession FDI will decreases which ultimate increase the severity of the economic situation. Similarly, the results are consistent with Razin, Sadka, and Coury (2002), and with large class of international trade theories which stated that trade openness has the potential to destabilize the economy because trade openness leads toward lack of diversification which increase the probability of economic volatility by increasing the country's exposure to shocks specific to the sectors in which the country specializes. Moreover, results indicate that ODA has negative and significant association with macro-economic instability. The results of this study are consistent with the perception that developing economies utilize

foreign aid as a tool to stabilize economic fluctuation through effective management (Isard, Lipschitz, Mourmouras, & YONTCHEVA, 2006). Primary objective to take foreign aid is to attain sustainable rate of economic growth and reduction of poverty among masses (Burnside & Dollar, 2000; Hansen & Tarp, 2000; Iyoha, 2004). This study concluded that developing economies used a combination of domestic and foreign policies to achieve desired growth rate and to stabilize economic instability. This study helps the policy maker to formulate the domestic fiscal and monetary policy to stabilize the economic fluctuations. Moreover, study also provide detailed empirical analysis of foreign factors that significantly affect business cycle fluctuation and help the policy maker that in which direction these resources should be utilized to smooth economic instability.

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