

Assessing the dynamic effects of fiscal policy shocks in selected leading and lagging economies

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Abstract: Fiscal policy dynamics received more attention after the global movement of 1990's. The global movement converted the attention of researchers towards free market economy, fiscal consolidation and decentralization. The present study examines that how macroeconomic variables (economic growth, private investment, consumption, Public debt and inflation) respond to fiscal shocks during 2002 to 2014 for a sample of ten economies, including leading economies (Germany, Japan, Switzerland, USA and UK) and lagging economies (Bangladesh, China, India, Pakistan and Sri Lanka). Variance decomposition technique and impulse response function were used to analyze the data. Data for the variables of the study is collected from World Development Indicator (WDI) and International Financial Statistics (IFS) databases. The results of variance decomposition and impulse response function showed that government expenditure has a strong correlation with macroeconomic activities. Furthermore, the shock in public spending has positive impact on key macroeconomic activities. The study also verifies the fact that private and public investments are complementary. The results also suggested that fiscal policy is playing a pivotal role in solving key fiscal problems in the selected economies. It study also suggests that fiscal policy must be used as an important tool to control inflation, interest rate and public debt. Nevertheless, it also suggests that investment will be encouraged through effective fiscal policy mechanism and integrate the fiscal policies among different leading and lagging economies to reach the ultimate aim and objectives of global development.

Key words: *Fiscal shock; Economic growth; Investment; Public debt*

1. Introduction

Different approaches have been used for the identification of fiscal shocks. Ramey and Shapiro (1998) developed the "narrative approach". He examined when government expenditures rises, consumption of durables falls, while nondurables shows a small decline. Similarly, Edelberg et al. (1999) pursued the same footings and found that defense spending has a noteworthy short-run positive effect on consumption and output. Mountford and Uhlig (2009) found that government spending shock has a negative impact on investment in U.S while using fiscal impulse-response functions. Perotti (2005) examined the impact of fiscal shock in a sample of four leading economies (Australia, Canada, Germany and U.K) found zero response in investment and a big positive impact in private consumption. For France, Biau and Girard (2005) found government expenditure multiplier has positive impact on investment and consumption. De Castro and Hernández de Cos (2006) studied in France that in short-run the relationship between government spending and output is positive, expansionary expenditure shocks directed towards

lower output and higher inflation in medium and long-run. For Italy and Germany, Heppke-Falk et al. (2006) and Giordano et al. (2007) explored that public expenditure had expansionary impact on consumption and output. Lastly, Afonso (2012) studied for U.K, Germany, Italy and U.S that public spending shock has noteworthy effects on macroeconomic variables, housing and stock prices.

The important recognition in public finance literature is the constraint in federal budget is linked through monetary and fiscal policies. Consequently, inflation can have implications on taxes and expenditure, Woodford (2001). The fiscal impact of monetary policy should be based on the real public debt. In applied research the working link between fiscal and monetary policy is not motivated so far. 'Unpleasant Monetary Arithmetic' is recently introduced to examine the link between fiscal and monetary policies. They analyzed that price cannot be controlled solely by monetary policy without the support of fiscal policy. The concept of Ricardian equivalence is used for such analysis (Barro, 1991). Barro (1990) followed the tax smoothing hypothesis, where discretionary fiscal and monetary policies were replaced by rules. Woodford (2004) utilized stabilization model, where real disturbances and policy measures were used as independent variables

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and output target is used as dependant variable. The Fiscal Theory of the Price Level (FTPL) argued Ricardian equivalence model does not consider price level to absorb the effects of fiscal policy. In its extreme case, price level can be determined by fiscal policy instead of monetary policy. In this regard, Leeper (1991) examined the rule based fiscal policy on government liabilities, where his result suggests that economy may be stabilize by active fiscal policy in presence of vigorous monetary policy. The fiscal shocks observed in the economy are examined through stabilization assumption. The behavior of discretionary fiscal policy is based on the optimal fiscal and monetary policies. Chari and Kehoe (1999), Benigno and Woodford (2003), Uribe (2004) and Siu (2004) concluded that imperfect competition, discretionary tax and sticky prices are the main hurdles in the achievement of steady economic growth as a result of ruled base fiscal and monetary policies.

Price stability cannot be controlled solely by monetary policy but an appropriate fiscal policy is also needed to be augmented (Woodford, 2001). As in Leeper (1991) government liabilities is used as proxy of fiscal policy. However, budget deficit is also used an instrument of fiscal policy, in order to achieve appropriate economic targets. The achievements will be more effective, if fiscal-monetary rule is applied on government debt. If a unique equilibrium exists at the same time both fiscal and monetary policy cannot be passive or active at the same time (Leeper, 1991). If constraint in federal budget is met, the economy may be stabilizing where rise in inflation is less than rise in nominal interest rate. In contrast, passive monetary policy will increase the nominal interest and will destabilize the economy, Evans and Honkapohja (2005).

The empirical literature on public sector employment and wages is limited, despite a lot of literature is available on theoretical background which focused on government buying and spending part of production economy. Uribe (2004) studied that in competitive labour market, the purchase of labour hours decreases production, investment and private sector employment instead of the purchase of government services. Cavallo (2005) included the exogenous growth in technology and capital adjustment cost in the model. Similarly, Pappa (2009) amend the model for nominal rigidities. They concluded that after rise in government hours; the real wages will go up; while private sector hours and output decreases. Ardagna (2007) studied the issue in unionized labour market under the assumption of dynamic equilibrium model. The private sector employment and wages increased as a result of rise in public sector employment. Zylberberg (2002) in partial equilibrium model, unemployment can be reducing as a result of lower wages and a rise in public sector employment. This is a useful starting point to look the issue in frictionless labour market. Holmlund and Linden (1993) resulted that a rise in public sector employment has crowds out the

private employment and found a direct negative impact. The reality is that, the indirect effect of wages is weaker than the direct effect of decreasing unemployment. Quadrini and Trigari (2007) analyzed the business cycle instability and its impact on public sector employment instability and concluded private and total employment increases in the presence of public sector empowerment. Horner (2007) studied the effects of turmoil on employment when in public sector wages were raised. Any rise in turmoil will raise unemployment because searching for a new job in public sector companies will put more pressure in employment market which is already aggravated. It aims to provide a simple and comprehensive model to assess the impact of wages and public sector employment and its relative importance over business cycle model. Petrongolo and Pissarides (2000) used dynamic stochastic general equilibrium model to catch the frictional effect of private and public sectors. It shares several common characteristics with Quadrini and Trigari (2007). The major difficulty they faced is the magnitude of public sector friction parameter. They used information from various sources for both United Kingdom and United States.

The types of government spending have mixed macroeconomic effects. Baxter and King (1993) explored that public investment has varied quantitative and qualitative impact on GDP growth rather than consumption; the latter is affecting the factors marginal productivity. The model was extended and the public sector employment was replaced with services. In such state of affairs, when the government raised the purchase of goods and decreased the wages, it will raise the private sector employment.

After the great depression of 1930's the regulation of market economy become a vital issue. A proper system was needed to prevent the severe crises in future endeavor. The economy will be stabilizing through robust fiscal policy and the decision regarding government expenditure taxation will be stipulated. It will stimulate economic growth and non-inflationary production of gross national product. The key question under this debate was either fiscal policy will be consistent or constructive. The relationship between dynamic process of fiscal policy and macroeconomic regulation is playing a vital role in methodological principles and considered a mandatory condition in this process. The link of fiscal policy to macroeconomic regulation is one of the important elements of macroeconomics. The relationship between fiscal policy and economic growth is extensively studied like, Barro and Lee (1994), and Temple (1999) and overviewed the new growth evidences.

Levine and Servos (1993) while applying an extensive analysis by applying Extreme Bound Analysis (EBA) to test the significant relationship between government spending and macroeconomic. They found that, investment is correlated robustly with GDP. They also verified the visible support for the hypothesis of conditional convergence and also

the relation between growth and initial income is correlated negatively. The government activities are also tested and showed no robust relationship between macroeconomic activities and public spending.

Fiscal policy is under serious pressure after the recent global financial crises in the sample countries. After decades of rapid and sustained economic growth that sharply reduced poverty and lifted the living standards, the noticeable slowdown in growth is witnessed. To a reasonable extent, the result of less favorable international environment is due to the deterioration of leading economies since the financial crises. There are other internal issues also that moderated the growth momentum in the sample countries. For instance China is moving towards the sustainable growth paradigm and is in the midst of a strategic transition in which private consumption and domestic demand plays an extensive role, while India is suffering from a difficult business environment and infrastructure deficit. While, the magnitude of fiscal shocks is different in the sample economies after the global crises and the economic growth remains a difficult yet urgent challenge in both leading and lagging economies. The role of fiscal management in achieving sustainable economic growth can be helpful in these economies. Fiscal policy contributed to inclusive growth in leading and lagging economies in the past and it will continue in the future. The composition of taxes and public spending matters significantly in case of economic growth and development. The property tax, income tax, profit tax etc. are more advantageous for growth than corporate and personal income taxes. Consequently, when the sample countries improves revenue mobilization techniques across all tax categories to expand its limited revenue base, governments need to pursue fiscal revenues and a mix of taxes that curtail the adverse effects of growth. More exclusively, the shift of government expenditure to human capital will result a high growth rate. The governments of both leading and lagging economies must pay a special attention to the mixture of both spending and revenues for the achievement of sustainable growth through effective fiscal policy. Fiscal managers may attempt to explore ways to leverage fiscal policy for inclusive growth. The Government investment in health and education can supplement the overall human capital and thus can promote growth. The two objectives need not to be mutually exclusive and can hamper the productive capacity and efficiency of the poor and deprived class of the society.

2. Justification of the study

The importance of fiscal policy is unequivocal. Unluckily, in previous studies the impact of fiscal policy on macroeconomic variables among leading and lagging economies have received a negligible consideration. The present study is designed to explore the effectiveness of fiscal policy and its impact on macroeconomic activities for a sample of

ten economies during the period of 2002 to 2014. It will also investigate the transmission channel of fiscal policy shocks in different economies. It is commonly agreed among economists that fiscal policy is playing a vital role in achieving economic growth in both leading and lagging economies. Therefore, a sound fiscal policy is a prerequisite for economic growth of any economy (Abiad and Baig, 2005). This study will also make an addition to the dynamics of fiscal policy research. Meanwhile, indicators of fiscal policy also affect the performance of other key macroeconomic variables and there exist a bi-directional causality. The interaction between indicators of fiscal policy and macroeconomic policies is very crucial. The present study is planned to address the chain of problems associated with fiscal policy and its macroeconomic effects.

3. Objectives of the study

The study is designed to achieve the objective, that how macroeconomic variables (economic growth, private investment, consumption and inflation) respond to fiscal shocks, for the period of 2002-14 for sample Lagging economies (Bangladesh, China, India, Pakistan, Sri Lanka) and leading economies (Germany, Japan, Switzerland, UK,US).

4. Research methodology

Impulse responses and variance decompositions techniques

Following Blanchard and Perotti (1999), Krusec (2003), Höppner (2001), Perotti (2005, 2007), this study analyzes the dynamic effects of fiscal policy on macroeconomic activities using structural VAR (SVAR) methodology. While pioneered by Sims (1980), Blanchard and Perotti (2002) lead a structural VAR approach to assess the impact of expenditure/ revenue shock on output and private consumption.

To empirically estimate the fiscal shocks in selected leading and lagging economies, the study utilizes VAR system, variance decomposition technique and impulse response function. While examining different channels, various fiscal shocks have been incorporated. Variance decomposition categorizes the part of the variation, at different time periods, in a macroeconomic variable(s) shocks in other variables and its own shocks. In the initial stage, this study estimated the basic model and then explores the variation in different macroeconomic variables due to shocks and shocks to other variables.

The structural VAR model moving average version is as follow:

$$Y_t = b_0 Y_t + b_1 Y_{t-1} + b_p Y_{t-p} + e_t \quad (1)$$

Where Y is a vector of a selected independent variables and b is autoregressive coefficient, while p is the optimal lag length and e_t is vector of other control variables.

5. Results and Discussion

5.1. Analysis of fiscal shocks through variance decomposition techniques

This section explain in detail the analysis of variance decomposition of selected macroeconomic variables to a government spending shock during various time periods.

5.1.1. Variance decomposition of economic growth

The variance decomposition technique results suggest that the explanatory variables respond to fiscal shocks in the long run. For instance, a fiscal shock in the 2nd period leads to 2.5 percent change in economic growth. The same fiscal shock led to 5.34 percent change in growth in 13th period. Similarly, a fiscal shock is showing 6.68 percent change inflation in the 2nd period, while in 13th period the same change is recorded as 7.13 percent. Moreover, a shock in fiscal policy is showing 0.3 percent change in private investment in 2nd period, and it turns to 0.8 percent in 13th period. A Fiscal shock resulted a change of 2.2 percent in current account balance in 2nd period, and it diminishes to 1.63 percent in 13th period. Consumption also increased in 13th period to 1.27 percent from 0.14 percent in 2nd period as a result of a fiscal shock. It is evident from the above table that GE, INF, PINV, CAB and HFC responded significantly in long run to fiscal shocks in different time periods.

Table 1: Variance decomposition of EG

Period	EG	GE	INF	PINV	CAB	HFC
1	100.00	0.000	0.00	0.00	0.00	0.00
2	88.16	2.50	6.68	0.30	2.21	0.143
3	86.86	3.57	6.74	0.35	1.93	0.56
4	85.63	4.02	6.89	0.76	1.72	0.98
5	85.26	4.22	7.06	0.79	1.59	1.08
6	85.05	4.39	7.10	0.82	1.50	1.15
7	84.81	4.56	7.15	0.83	1.44	1.20
8	84.63	4.71	7.18	0.84	1.41	1.23
9	84.47	4.85	7.18	0.83	1.41	1.25
10	84.31	4.98	7.18	0.82	1.44	1.26
11	84.16	5.10	7.16	0.82	1.49	1.28
12	84.00	5.22	7.15	0.81	1.55	1.27
13	83.83	5.34	7.13	0.80	1.63	1.27

5.1.2. Variance decomposition of government expenditure

The response of government expenditure to a fiscal shock is presented in table 2. The response of economic growth to a fiscal shock was about 8.9 percent in 2nd period and it rose to 27.7 percent in 13th period. Similarly, in case of inflation the response of a fiscal shock was around 7.6 percent in 13th period against 0.4 percent in 2nd period. Moreover, the private investment also increased during the same period. It responded around 6 percent in 13th period, while it was only 0.4 percent

in 2nd period. The response of current account balance to a fiscal shock was accorded 0.15 percent in 2nd period and it increased to 0.77 percent in 13th period. Additionally, the response of consumption to a fiscal shock also took the same momentum, and increased around 8 percent in 13th period against 0.23 percent in 2nd period.

Table 2: Variance decomposition of GE

Period	EG	GE	INF	PINV	CAB	HFC
1	5.09	94.91	0.00	0.00	0.00	0.00
2	8.87	89.97	0.37	0.399	0.15	0.23
3	10.76	84.43	1.25	1.65	0.21	1.70
4	12.42	79.21	2.12	2.73	0.24	3.27
5	14.35	74.42	2.98	3.50	0.28	4.46
6	16.37	70.02	3.80	4.08	0.34	5.38
7	18.33	66.06	4.56	4.54	0.400	6.18
8	20.20	62.52	5.23	4.91	0.47	6.67
9	21.95	59.37	5.83	5.21	0.53	7.10
10	23.57	56.34	6.34	5.46	0.59	7.45
11	25.08	54.08	6.80	5.67	0.66	7.70
12	26.47	51.86	7.20	5.84	0.72	7.91
13	27.74	49.88	7.56	5.98	0.77	8.07

5.1.3. Variance decomposition of inflation

Economic growth responds to a fiscal shock by 9.26 percent in 2nd period, while in 13th period it rose to 13.17 percent. It indicates that in long run response of economic growth to fiscal shock was significant. On the same footings, private investment was 0.11 percent in response to a fiscal shock in 2nd period, and turned to 7.17 percent in 13th period. The current account balance also showed a massive rise of 20.26 percent in 13th period against 0.03 percent in 2nd period. Moreover, the consumption was about 0.02 percent in 2nd period, while it increased to 0.52 percent in the 13th period.

Table 3: Variance decomposition of INF

Period	EG	GE	INF	PINV	CAB	HFC
1	2.32	1.09	96.59	0.00	0.00	0.00
2	9.26	1.12	89.48	0.11	0.03	0.02
3	12.06	1.34	81.51	4.187	0.45	0.46
4	14.36	2.03	76.33	5.13	1.73	0.42
5	15.14	2.48	72.69	5.83	3.44	0.42
6	15.35	2.67	69.52	6.34	5.68	0.43
7	15.30	2.79	66.80	6.62	8.03	0.46
8	15.04	2.85	64.41	6.82	10.40	0.49
9	14.68	2.89	62.29	6.94	12.69	0.50
10	14.28	2.92	60.40	7.03	14.85	0.52
11	13.88	2.96	58.71	7.08	16.84	0.53
12	13.51	2.99	57.19	7.13	18.65	0.52
13	13.17	3.05	55.83	7.17	20.26	0.52

5.1.4. Variance decomposition of private investment

The economic growth showed a response to a fiscal shock by 20.45 percent in the 2nd period, and it increased to 18.76 percent in 13th period. The response of inflation, to a fiscal shock was about 1.44 percent in 13th period against 1.38 percent in 2nd period. Similarly, the response of a fiscal shock to

current account balance was about 2.06 percent in 13th period and it was only 0.13 percent in the 2nd period. The consumption was also responsive and recorded as 16.25 percent in 13th period and the same response was 6.87 percent in 2nd period to a fiscal shock. All these variables indicated that they are more responsive to a fiscal shock.

Table 4: Variance decomposition of PINV

Period	EG	GE	INF	PINV	CAB	HFC
1	16.78	1.99	0.11	81.12	0.00	0.00
2	20.45	2.88	1.38	68.27	0.13	6.87
3	19.09	2.74	1.47	63.85	0.14	12.69
4	18.76	2.77	1.48	61.79	0.37	14.81
5	18.82	2.78	1.46	60.82	0.46	15.66
6	18.88	2.75	1.45	60.25	0.60	16.05
7	18.92	2.73	1.44	59.83	0.78	16.29
8	18.94	2.73	1.43	59.53	0.97	16.38
9	18.94	2.74	1.43	59.29	1.19	16.39
10	18.92	2.77	1.43	59.09	1.40	16.38
11	18.87	2.80	1.43	58.91	1.63	16.34
12	18.82	2.85	1.43	58.74	1.85	16.30
13	18.76	2.91	1.44	58.58	2.06	16.25

5.1.5. Variance decomposition of current account balance

The response of a fiscal shock was also satisfactory in case of current account balance. The economic growth showed a response of 1.51 percent in 2nd period, while it decreases to 1.22 percent in 13th period. Moreover, the response of a fiscal shock to inflation was about 9 percent in 2nd period, and it decreases to around 3 percent in 13th period. The private investment responded to a fiscal shock about 3 percent in 13th period against 1.7 percent in 2nd period. Similarly, the consumption also showed the same pattern and responded to a fiscal shock by 1.28 percent in 13th period against 0.16 percent in 2nd period.

Table 5: Variance decomposition of CAB

Period	EG	GE	INF	PINV	CAB	HFC
1	0.64	0.39	12.30	2.34	84.32	0.00
2	1.51	0.93	8.77	1.70	86.93	0.16
3	1.42	1.35	6.85	3.25	87.00	0.122
4	1.47	1.50	5.77	3.31	87.77	0.22
5	1.41	1.56	5.00	3.28	88.33	0.41
6	1.36	1.70	4.47	3.29	88.62	0.56
7	1.33	1.82	4.07	3.25	88.82	0.71
8	1.30	1.92	3.76	3.22	88.95	0.84
9	1.29	1.99	3.52	3.19	89.05	0.96
10	1.26	2.05	3.34	3.16	89.12	1.06
11	1.25	2.09	3.18	3.13	89.19	1.15
12	1.23	2.13	3.06	3.11	89.24	1.22
13	1.22	2.15	2.95	3.097	89.29	1.28

5.1.6. Variance decomposition of consumption

The fiscal shock was also responsive in case of consumption. The response of economic growth was 15 percent in 2nd period, and it rose to 24 percent in 13th period. In case of inflation, the response of a

fiscal shock was 1.73 percent in 2nd period and it decreased to 1.27 percent in 13th period. Similarly, in case of private investment, the response of a fiscal shock rose to 1.42 percent in 13th period against 1.07 percent in 2nd period. The response of current account balance to a fiscal shock also increased over the period of time. It was 0.88 percent in the 2nd period, and it turned to around 5 percent in 13th period.

Table 6: Variance decomposition of HFC

Period	EG	GE	INF	PINV	CAB	HFC
1	9.53	1.43	0.87	1.45	1.18	85.52
2	15.06	2.24	1.73	1.07	0.88	79.02
3	17.37	2.52	1.52	1.56	0.87	76.16
4	19.56	2.36	1.42	1.41	1.00	74.23
5	20.97	2.25	1.40	1.37	1.21	72.81
6	22.17	2.16	1.37	1.34	1.57	71.39
7	23.04	2.13	1.35	1.32	1.97	70.19
8	23.61	2.14	1.34	1.32	2.42	69.16
9	23.97	2.20	1.32	1.33	2.93	68.26
10	24.16	2.27	1.31	1.34	3.45	67.48
11	24.21	2.37	1.29	1.36	3.98	66.79
12	24.16	2.49	1.28	1.39	4.50	66.17
13	24.06	2.62	1.27	1.42	5.02	65.61

5.2. Analysis of fiscal shocks through impulse response function

The impulse response function is applied to gauge the response of key macroeconomic variables to fiscal shocks in various time periods. A surprise change in fiscal policy is considered as a fiscal policy shock. Nevertheless, fiscal shock cannot be attributed to a single factor but it covers a variety of policies. The tax rules could be changed for endless list of incomes, or even the different types of public expenditures, where modification may happen. In our analysis, we are examining the much traditional and broader macroeconomic issue of the impact of fiscal variables on aggregate economy (macroeconomic variables). Since changes in fiscal policy may be attributed to certain other variables, which may bring a fiscal shock. For instance, for financing a change in tax-debt ratio mixes about changing the level of expenditure for a given level of debt, or a change about a given stream of public expenditure.

The effect of a fiscal shock on key macroeconomic variables is showed through impulse response function. For this purpose "response to Cholesky One S.D Innovations" technique has been used which showed graphically the impulse response of a fiscal shock to economic growth, private investment, current account balance, consumption, inflation and trade during 2002-14.

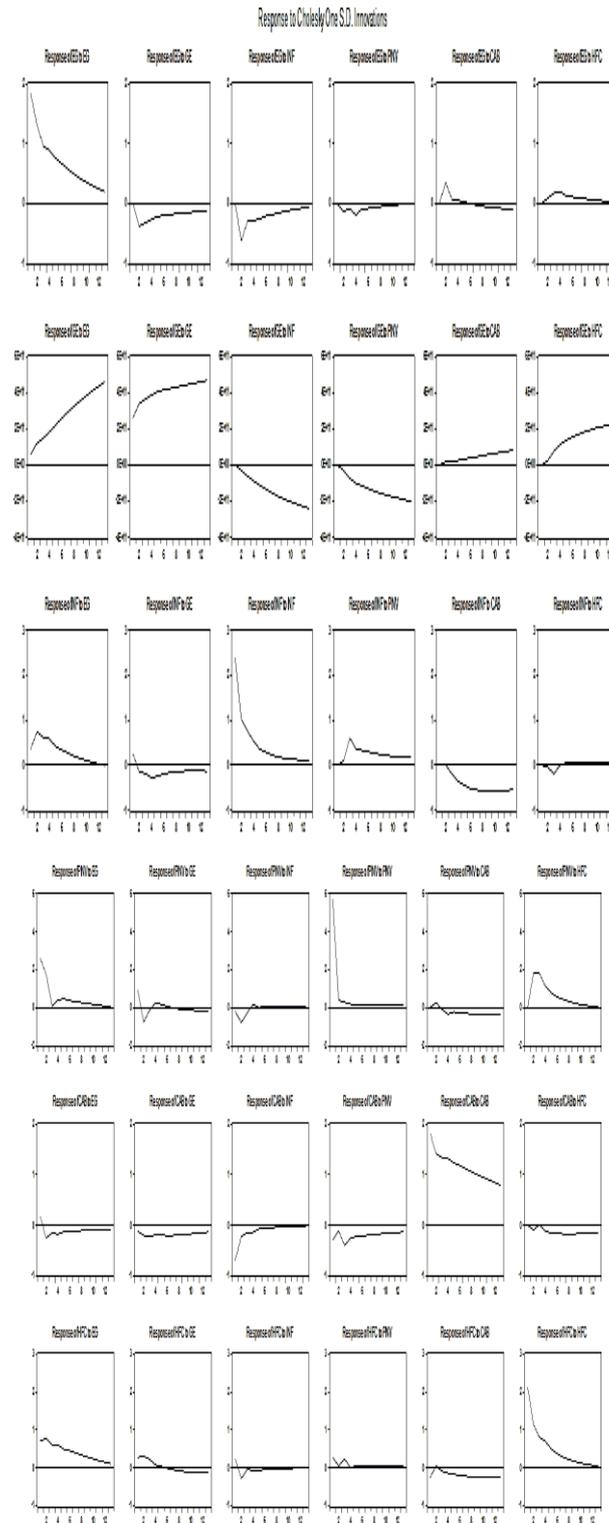


Fig. 1: Impulse response to fiscal expenditure shocks

The above figure 1 showed the impulse response of various macroeconomic variables to a government expenditure shock. The response of economic growth to government expenditure shock changing

in positive direction over the period of time. As it is evident from the above figure “Response of EG to GE” in 2nd period, the response to fiscal expenditure shock to economic growth was about -0.8. The

impulse response shows that after 2nd period the economic growth approached to -.01. On the same grounds, the response of inflation to a fiscal shock initially tends to negative, and gradually decreases. The response of private investment to government expenditure shock was initially negative, but after 2nd period it again changed to positive origin and continued with the same pattern. The response of current account balance to government expenditure shock remains stable throughout the sample period, and it may be the reason of less reliance on public borrowing. However, the consumption response showed a much fluctuated attitude and initially it was positive then reached to zero, while in last periods it approached to negative.

6. Conclusion and suggestions

The response of a fiscal shock on key macroeconomic variables for the panel countries suggests the following conclusions.

1. Fiscal shock is showing a robust results and very crucial for its impact on key macroeconomic variables in the study. Moreover, we found that expenditure based stimuli are tends to be associated with consumption and investment, but rather neutral to economic growth. On the other hand, tax based stimuli showing its contingent impact to boost the tempo of growth in the sample economies. The results confirmed the studies of Ramey and Shapiro (1998).
2. The study found empirically, that fiscal shock affects the behavior of private investment, public debt, household consumption, exports, etc. regardless of their size and having the same verdict like Fatas and Mihov (2001).
3. From the direct investigation of expectations and cost channels, it is evident that cost channels are of major importance, involving stimuli spending cuts lead to deterioration of cost competitiveness in sample countries, which showed the same results for consumption and investment reaction to fiscal schok. The expectation channels do not depict a clear consumption's response to fiscal impulses, unexplained and in contrast to theoretical results. It further verified the postulates of Mountford and Uhlig (2005).
4. The robustness of the result is tested by comparing the relevant regression results with various methods are applied to record the response of fiscal impulses. The impulse response identification showed that most of the results were the same like variance decomposition technique. The impact of the impulse response is most evident, when government expenditure is used, and consistent with the results of Biau and Girard (2005).
5. The results of fiscal impulse and variance decomposition may have estimation problems typical for panel data models and shall be treated with caution, especially when observations composed of small samples. All the same, they support the partial claim that contractionary fiscal stimuli or expansionary fiscal adjustments are possible. It led to the same conclusion of Afonso and Sousa (2009).
6. The findings also showed that accessible approaches to measure the fiscal shock models may be re-oriented. Results also amplified the assumption of total tax changes in existing macroeconomic framework is still unclear. It is evident from the results that traditional measures of fiscal shocks are not accurate, while examining the transmission mechanism of fiscal shocks. In its place, attentions are needed to different instruments of tax policy for further studies.

The dynamics of fiscal policy may be different among sample economies and the reasons for such disparities may be the nature of financial and economic policies among different sectors of the economy. This divergence is complementary in economic activities and to measure the performance of these economies, it must be used with proper care. It will open the ways to integrate fiscal policies among panel economies to achieve the ultimate objective of internationalization.

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