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Fiscal Discretion and Its Impact on Pakistan Economy

MUHAMMAD ISMAIL and FAZAL HUSAIN

1. INTRODUCTION

Macroeconomics addresses output, employment and price fluctuations during business cycles. Business cycles which capture variation in economic activity emerge generally due to instable investment, frequent changes in money and credit through banking system and unmanageable haphazard proceedings of wars or political instability. Business cycles inherent features of mixed economic system where households and businesses composed of different motivations spend and produce, differ in their respective economic activities. The occurrence of this difference results in creation of waves in economic activities, which are the business cycles [Spencer and Amos (1993)]. Output variation in moderate context is either a recession or recovery. During recession the economic activity falls which not only reduces employment opportunities but creates gap between potential and actual output of an economy. The federal government tries to keep the adverse effects of business cycle at bay all together. Economists admit that private sector is unable to protect the economy from uncontrolled variations in employment and inflation. In this scenario the government's fiscal management is corrective response for the problems of recovery and recession. The government makes use of public spending and taxes to minimise the gap of business cycles. This process is called fiscal policy and the deliberate government involvement to stabilise economy is regarded as discretionary fiscal policy. The government can make use either taxes or government spending or both to stabilise economy but in this study we only used government spending due to its larger and positive multiplier effects.

Until the great depression the economic mechanism was based on self-correction. By that time, the recurring periods of inflation and unemployment were considered to be permanent features of an economy. US president, Hoover was of the belief that "nature would cure all, whilst government intervention might ruin all".[1] This is why Hoover allowed the slump to "liquidate" itself. Even he let "labour, stocks, and the farmer and

Muhammad Ismail <mismail345@hotmail.com> is Visiting Faculty at the University of Central Punjab, Rawalpindi Campus. Fazal Husain <fazal@pide.org.pk> is Head, Department of Economics, Pakistan Institute of Development Economics, Islamabad.

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[1]Samuel Eliot Morison, *Oxford History of the American People* (New York: Oxford University Press, 1965, p. 945).

real estate to liquidate"[2] as on the belief that once the spate of liquidation got completed, the economy would return to its normal level of economic activity.

Fiscal policy-making became essential to address macroeconomic variables in the mid of twentieth century. Fatás and Mihov (2000) analysed and assessed the impacts of government spending on consumption and employment. Blanchard and Perotti (2002) developed a set up to examine fiscal shocks. Alesina, *et al*. (2002) estimated the sway of government spending shocks on profits and investment. Canzoneri, *et al.* (2002) studied the nexus between monetary and fiscal policy. The government's stabilising policy formulation received serious attention by the end of World War II (1945). At that time this economic role of the government was named as Keynesian Economics. The Keynesian philosophy was used at Washington D.C. in the US for several decades [Spencer and Amos (1993)]. Theoretically, it is the deliberate (discretionary) control exercised by the government in the public interest through fiscal instruments.

Private investors neither invest just because of the economist's views nor do households alter their savings and spending plans, but respond to government decisions [Spencer and Amos (1993)]. More recently some Latin American countries introduced fiscal reforms to disinflate their respective price levels. In most of the countries even the fiscal reforms were either delayed or not implemented fully [Rigbon and Robrto (2002)]. Through this paper, we attempted to explore the nexus between fiscal stances, output, employment and inflation in Pakistan. Traditionally, the removal of deflationary gap is reflation in economy and the reverse is adopted to cure inflationary gap. Generally negative or deflationary output gaps are observed in economies, where the government opts for huge budget deficits.

1.2. Objectives of the Study

We studied fiscal prudence in Pak-economy to analyse whether policy-makers in Pakistan are making use of fiscal framework or not to maintain the economic activity. Apart from the causes of recent financial crisis the governments bailed-out the financially hopeless institutions. The fiscal instruments of government spending and taxes are used by the governments to control the adverse fluctuations in economic activity. Economists call the counter-cyclical stance of government through fiscal instruments, discretionary fiscal policy. With positive and bigger size of spending multiplier we concentrated on how discrete government spending on development projects like highways and infrastructure and current expenditures of interest and defense expenditures influence macroeconomic variables of output, inflation and employment in Pakistan.

The main objective of the study is to analyse the effect of government spending on its output, employment and inflation in Pakistan. Further, how various forms of current government spending influence the variables of out, employment and inflation.
The study objectives are summarised as;

- How fiscal tools are used by the policy-makers for devising fiscal policy.
- How government current and development expenditures influence output, employment and inflation in Pakistan.
- What is the size of fiscal discretion and what is its impact on output, employment and inflation.

[2]Ibid.

This study is organised as follows; Section 2 highlights the fiscal policy background and its instruments. Section 3 is based on review of fiscal literature. Section 4 gives fiscal discretion in Pakistan. Section 5 covers the methodology and Section 6 is about findings while Section 7 provides conclusions and suggestion.

2. FISCAL POLICY

The long tried macro-economic problem by the fiscal policy is whether government spending measures can restore an economy to its potential level of gross domestic product (GDP) by minimising the output gaps [Spencer and Amos (1993)]. The presence of constitution and other political institutions restrict the discretionary powers of the sovereign. North and Weingast (1989) noted that the reputation plays an important role in limiting the sovereign's apt to renege and it is formalised into game theory models. They deduced that successful performance of economy is only possible when political institutions limit the economic intervention that is, the constitutional restrictions must be self-enforcing. At the same time this approach eliminates the possibility of state absolutism. The study necessitates the execution of public laws and expenditures to be the subject of public budgetary policy. While the parliament need to play a significant role in budgetary decisions over the revenue expenditures and investment expenditures. In the early years, 1940s fiscal or the budgetary policy was presented in two parts;

(i) The first one above-the-line that is, ordinary government expenditures and revenue, and
(ii) The second one below-the-line that is, capital/development expenditures.

This distinction is made for the sake of increased fiscal role in economic activism along with the arithmetic of whether or not the government expenditures are covered through taxation. The novelty of the study is how the embedded change in government spending as a fiscal tool influences the output, employment and inflation of an economy.

2.1. Fiscal Instruments

2.1.1. *Taxes*

Taxes are the complementary payments made to governments. Direct taxes are deducted from entrepreneurial and corporate income while the indirect taxes are imposed on economic activities of production, consumption and distribution. Taxes stand as withdrawals from economy are necessarily dependent on real output of an economy. Direct taxes influence the disposable income of economic agents while the indirect tax is double edged sword as it increases cost of living as well as cost of production. The taxes reduce the size of multiplier [William and Michael (1991)]. It adds fuel to fire by deteriorating the terms of trade and international competitiveness.

Fiscal policy makes use of taxes and government spending as fiscal tools to manage the economic activities in an economy. Governments use these instruments to achieve their macro-economic objectives besides stability in output gaps. The use of these tools describes the nature of this policy i.e. expansionary fiscal policy which is either reduction in taxes or increase in government spending and contractionary fiscal

policy which is either increase in taxes or reduction in government spending. The tax multiplier is calculated as;

$$\text{Tax Multiplier} = \frac{\text{MPM}-\text{MPC}}{\text{MPS}-\text{MPM}}$$

where, MPC is marginal propensity to consume, MPM is marginal propensity to import, MPS is marginal propensity to save.

2.1.2. *Government Spending*

Government spending consists of the public money spent to provide social goods such as public goods and merit goods. The size of government spending varies with government role but it is independent of profit expectations and way beyond minimum level of society needs. Government spending has prompt and significant effect on the aggregate demand and it is a key fiscal tool. It is part of the aggregate demand that is why any change in government spending has a shift effect in aggregate demand and due to multiplier effect a dollar change in government spending has multiplier size time's impact on GDP.

$$\text{Spending Multiplier} = \frac{1}{\text{MPS}+\text{MPM}}$$

where MPS is marginal propensity to save, MPM is marginal propensity to import while the required change in government spending is given by

$$\text{Government Spending} = \frac{\text{full employment GDP}-\text{current GDP}}{\text{multiplier}}$$

where GDP is gross domestic output

Spending multiplier is always larger in size as compared to tax multiplier that is why it is more effective on aggregate demand [William and Michael (1991)]. So primarily government spending is used to reduce unemployment. A secondary argument put forward by John Kenneth Galbraith and others is the allocation of resources for socially optimum levels of economic activities i.e., pollution control, social goods provision and help for hard core unemployment.

3. REVIEW OF LITERATURE

3.1. Theoretical Approaches

Backus, Kehoe, and Kydland (1995) found very low absolute valued correlations in OECD countries between government spending and output. Eichenbaum (1997) found counter-cyclical discretionary neither to be desirable nor politically feasible. Taylor (2000) described fiscal policy rule with budget surplus as a function of output gap. He named the fraction of the balance explained by output gap as "automatic stabilisers", while the structural residual part of this regression reflects the fiscal discretion. This question is considered similar to the institutional role of political institutions in forming economic policy [Drazen (2002); Persson (2001)]. Rules constraining government spending do not have universal support as these limit the policy flexibility to respond emergencies, economic fluctuations and voters varying fiscal needs. Simply these rules can choke off government spending [Saade (2002)].

We observed consensus in modern macroeconomic literature on the use of fiscal and monetary policies as stabilising tool. More significantly, fiscal policy influences directly the GDP and employment. This consensus drew much attention due to the conflicting debate present between two economists groups, one Friedman from Chicago and the other Modigliani from the MIT [Blanchard and Cohen (2002)]. Fatás and Mihov (2003) discussed how harmful can the fiscal discretion be for macroeconomic variables if policy makers are not restricted. The linking of macroeconomic volatility to policy discretion has raised the question of why cross-country dispersion is caused due to fiscal policy use.

Fiscal policy after passing through the phase of disfavour is now re-emerging from its last decade wise since the Second World War [Buti (2003)]. The role of fiscal policy as a stabilising tool became questionable since mid-1970s [Buti and Noord (2004)]. Traditional Keynesians consider the fiscal policy to be counter-cyclical during recession vice versa during boom, as there exists a positive correlation between tax rates and output while the correlation between government spending and output is negative [Hunt (2005)].

3.2. Discretionary Policies and Their Impact

Fiscal policy has two versions older one is based on demand-side which is consequential of Keynesian economics. It concludes that deflationary gap occurs due to insufficient aggregate demand while inflationary gap exists due to excessive aggregate demand. During recession a fiscal expansion and a vice versa approach in boom period is made to stabilise the economy. Though the Keynesian economists suggest corporate tax adjustment that is a relaxation in direct taxes to counter recession and increase in direct tax during boom. This paper advocates the increase in government spending to boost investment which will encourage firms to employ more workers. Increase in public spending on education, training and health care will improve labour productivity and a reduction in production costs. It can reduce or even eliminate natural rate of unemployment. Budget deficits arising from the removal economic recession through discretionary fiscal policy will cause crowding-out effect. This creates hurdles in economic activities and quite often used in pre-election year. To avoid this legal obligation of maintaining balanced budget needs to be introduced. It will act as a mechanism to limit government's discrete powers to change fiscal tools [Buchanan (1968); Brennan and Buchanan (1980)].

Deviations in government spending share of gross national product correlate negatively growth and saving rates, [Barro (1990)]. Even the permanent increase in government spending influences the variation of real GDP from potential is temporary, however this shift will result in inflation. This theory is proved through recent research conducted by Taylor (1993) and Blanchard and Perotti (1999). Taylor (1993), argued that the fiscal discretion could make the central bank job more difficult i.e. central bank professionals might take time to forecast the size of fiscal proposals. He admitted that discretionary fiscal policy in the past is associated with implementation lags, irreversibility and political constraints and believed that these were reinforced by the explicit and pre-emptive way that the monetary policy had been used in the most recent decade. Alesina and Perotti (1994), argue that a government with lower concentration (Herfindahl index) has high discretion, as coalitions and fiscal deadlocks delay the

stabilisation and increase discretionary spending. Particularly, the removal of recession by increasing aggregate demand which can cause budget deficit but this deficit can be eliminated on the medium run by the economic expansion experienced through fiscal relaxation. Gavin and Perotti (1997) study of Latin American countries demonstrate the fiscal policy as pro-cyclical. This is only possible if strict fiscal rules are adhered in the fiscal tool management, regardless of the phase of business cycle [Stiglitz (2000); Tobin (1998) and Lipses and Chrystal (1999)].

An increase in fiscal policy discretion volatility by 1.0 percentage points reduces the economic growth by 0.8 percentage points [Blanchard (1993); Alesina and Perotti (1996)]. Dixit and Lambertini (2001) and Dixit (2001)] concluded that fiscal discretion destroys monetary commitment. Discretionary government spending has negative relation with the size of the government as big governments generally have stable spending and big automatic stabilizers [Fatás and Mihov (2001)]. Persson and Tabellini (2001) argue that the presidential system is associated with more discretionary spending, as in parliamentary system the executive is elected through different parties present in the parliament. This is why it is constrained in implementation of discretionary policy due to the no confidence vote threat. The debate during 1980s exposed reservations about the discretionary fiscal policy use to achieve economic objectives. In poor countries it is common that the business cycle is relatively volatile due to less developed financial markets and this is why income or GDP per person is negatively related to discretionary spending [Rand and Tarp (2002)]. They found a positive relation between inflation and discretionary government spending volatility as higher inflation more price volatility, ultimately affecting discretionary spending. Political and institutional hurdles affect the fiscal tuning of the business cycle [European Commission (2002)]. Blanchard and Perotti (2002) structural VAR literature based seminal paper regarded discretionary fiscal policy as a residual i.e. the unexplained shock of automatic fiscal policy reactions is fiscal discretion. Discretionary fiscal policy advocates suggest the government to make active use of fiscal instruments to reduce recessionary and inflationary pressures from the economy. Fatás and Mihov (2003) analysed the political and institutional determinants of discretionary fiscal policy along with the respective effects on output volatility and economic growth. They named the change in fiscal stances which is neither automatic response to economic conditions nor related to persistent changes in budget items, as discretion. On the basis of the data set used by them revealed that highly volatile discretionary fiscal policy exerts strong stabilising effects on economy. They accomplished that institutional arrangements which constrain discretion via checks and balances allow nations to achieve high growth rates and reduction in macroeconomic instability. According to European Commission's 2004 analysis, the fiscal policy responds to both demand and supply side shocks effectively. It holds for automatic stabilisers and discretionary fiscal policy. Marco and Paul's (2004), results matched the findings of Hagen (2002), who used the same fiscal policy indicator focusing only on pre-elections years without distinguishing between expenditures and revenue changes. Economic theory advocates that with given monetary policy, the fiscal change causes a shift in aggregate demand curve. A fiscal stimulus—an increase in either government spending or reduction in taxes results in rightward shift in aggregate demand and the reverse shift due to fiscal contraction. Hunt (2005) analysis concludes that the pro-

cyclicality of Irish feasible discretionary government investment arises by design. He further concluded that government expenditures are strongly influenced by fiscal rectitude deliberations rather than GDP growth rate. Policymakers devote resources for capital expenditures when economic activity generates such resources i.e. it is residual of budgetary process [Hunt (2005)].

Kalckreuth and Wolf (2007) exposed the difficulty associated with the identification of systematic fiscal discretion in assessing the effects of fiscal tools on the macroeconomic variables. They titled fiscal policy based on real time GDP as discretionary, while the true state economy based as automatic fiscal policy. The president can use discretionary policy more easily either for opportunistic or enthusiastic reasons. Therefore presidential rules are more with volatile discretionary policy [Afonso, Agnello, and Furceri (2008)]. Most of the studies provide evidence about the strong and negative relationship between discretionary government spending and the quality of the institutions along with political and budgetary constraints [Afonso, Agnello, and Furceri (2008)].

4. FISCAL DISCRETION IN PAKISTAN

Economists agree that perfect competition in its purest form does not exist. This is why Pak-Economy too features imperfectly competitive market structures. At political level in Pakistan there are mainly two big political parties that is a feature of duopolistic political system. In political system there are only two big parties while in production there are few large firms in every sector. North and Weingast (1989) necessitated the government not to just set the rules for economic growth but also make concrete commitment to achieve it. This commitment can be reflected through responsible behaviour and rules constraining the behaviour of the ruler from violating the binding. They marked the point of not displaying the former in the very spirit as irregular fiscal discretion eventually made the rulers to behave irresponsibly.

The Glorious Revolution of 1688 in England defined the roles of parliament, Crown and judiciary independent of the influence of Crown. In the early decades of the seventeenth century, England's fiscal needs increased the discretion i.e. expropriation of wealth through redefined rights in favour of the government. This sovereign act loomed a civil war. It resulted in monarchy due to failed attempts to institutionalise. North and Weingast (1989) termed this all for the redesign of fiscal fundamentals and government institutions. They believed that these institutions created an explicit limit over the Crown's ability to alter the terms of agreements unilaterally as it had to obtain parliamentary assent to bring any change to agreements. The institutional structure evolved through 1688 not only caped the king's ability to renege but eliminated the incentives for the parliament to act in irresponsible way.

When perfect competition does not exist in an economy then private sector alone cannot eliminate unemployment [Spencer and Amos (1993)]. In the light of above economic view private sector could not reduce unemployment from Pak-Economy. Since the creation of Pakistan military and political rule played hide and seek but the difference in the two rules was probably the size of cabinet. Chaudhary and Ahmed (1995) determined that fiscal expansion financed through banks causes inflation. Despite the governess issue and consistently worsened economic variables of growth, inflation and

employment every government sworn in with claims of curbing inflation and unemployment. The policy-makers did devise policies but it contributed little to economy and its stakeholders. This deliberate fiscal management to overcome output growth, inflation and unemployment increased the importance of fiscal discretion not only in the world but also for Pakistan.

The most consistent feature of Pakistan economy is persistent lower employment level which creates recession or deflationary gap. In Pakistan the size of public sector is comparatively bigger so does its role in addressing macroeconomic variables. On the basis of the data set used in the study the average size of government spending stayed at 22 percent with lower limit of 19 percent and upper limit of 33 percent of GDP. But the alarming aspect of this government spending composition is gigantic size of current expenditures as a percentage of total government spending and it remained 75 percent to 85 percent of government spending. Among current expenditures the defense and interest payments took the biggest chunk away.

The paper describes the need of flawless fiscal stances of the government which can win the confidence of the residence and cultivate required resources for growth or such other targets. To reduce output gaps fiscal reflation is made by policy makers. Now the paper quests the financing of this fiscal expansion. Pak-economy since its creation suffered from fiscal imbalances that are the government spending supersedes tax revenues. This not only widened the gap between taxes and spending but also raised the Pak-economy debt. In case the government borrows from domestic market the discount rate will go up by drying the credit availability for private sector. When factor inputs like oil, gas and electricity will become expensive consequently cost of production will rise. The producers will either produce less causing unemployment or transfer the whole burden of taxes to the public, in either case public welfare will be lost. Psychologically workers will lose their morale and health due to this fiscal hostility and family life peace too will be lost. Labour productivity will fall; output and employment will follow the same direction.

5. METHODOLOGY

5.1. Theoretical Background

Fatás and Mihov framed three questions, first how harmful is discretionary fiscal policy for the economy, second what are the political and institutional factors that shape fiscal policy and third the absence of political constraints in explaining the fiscal policy by other political and institutional variables [Fatás and Mihov (2003)]. Even they gave schematically organised role of policy and institutions through which growth is attained i.e. political and institutional set up—discretionary fiscal policy—output volatility—growth. The fiscal rules causal effect and institutions' disclaimer literature reveals the possibility that the fiscal rules and fiscal outcomes are driven by the preferences of the fiscal policy makers. As any policy maker deciding on the fiscal stance can influence the institutions conducting this fiscal policy [Poterba (1996); de Haan, *et al*. (1999); IMF (2009)]. Debrun and Kumar 2007 highlight the presence of disciplined government for adopting strict institutions.

Buti and Noord (2004) exposed the ineffectiveness of fiscal policy under certain restrictions such as demise of macroeconomic policy stabilisation tools and real business cycle as an equilibrium response to supply side shocks. Dixit and Lambertini (2001) and Dixit (2001) assumed a game theory based perspective about monetary and fiscal authorities in minimising a quadratic loss function of inflation and output. The theoretical fiscal literature predicts that opportunists manipulate fiscal tools before elections and it found support in Persson and Tabellini (2002a) and (2002b), Milesi-Ferretti, Perotti and Rostango (2002) empirical work to some extent. The EMU decomposed the fiscal balance as neutral stance and fiscal stimulus. The neutrality of the fiscal policy was materialised if its primary policy expenditures grow along the GDP rate plus the targeted inflation, while the tax revenue grows parallel to nominal GDP. Thus government's deviation from this criterion is discretionary fiscal policy [European Commission (2004) and Larch and Salto (2003)]. Blinder (2004) and Auerbach (2002) argued about politicians' political acuity if responded precisely to the output gap then Taylor (2000) guesstimates will reflect automatic as well as systematic discretionary fiscal policy. Hunt (2005) decomposed the total government spending into discretionary and non-discretionary constituents. He further adjusted the discretionary constituent to the styled feasible discretionary government consumption, investment, and current transfers. Feasible discretionary consumption subjects to government consumption policy choice based on both legal obligations and political imperatives i.e. a government choosing not to pay public servants, to default its national debt obligations, speculatively. Feasible government investment is total government capital expenditures less transfers. Perfect discretionary government consumption takes total government current expenditures adjusted for the national debt servicing cost and management. European Union annual budget contribution and the costs the government is legally required to fund such as judiciary and state head remuneration. Yearly enhanced wage bills of public sector employees and a pay raise higher than consumer price inflation are treated as feasible discretionary consumption items [Hunt (2005)].

5.2. Methodology

Our study attempts to describe the discretionary fiscal policy by referring changes in government spending, which is not automatically linked to the business cycle. In fact, these changes probably emerge due to unplanned fiscal policy. To infer government spending based fiscal discretion, changes in government spending is observed. The handling of fiscal discretion is quite complex due to simultaneity involved in deterministic and dependent variables. This difficulty is reduced by focusing only on the government spending. Generally change in government spending is supposed to respond economic activity in the economy. The economic activity is based on output, employment and inflation mainly. This is why the paper attempted the theoretical arguments of how a change in current and development government spending particularly affect output, employment and inflation in an economy. That is, the government spending is a function of its own lag spending, output, employment level and inflation. Government spending lag is introduced as current government spending depends along with other things on the spending of the previous year.

The government spending is a comprised of many items but in this study it is broken down into defense expenditures, interest payments, non-defense current expenditures, non-interest current expenditures and non-defense and non-interest current expenditures. These are included to see their respective influence of each variable on economic activities of the country i.e. how the government expenditure change responded the output, employment and inflation in the economy. Inflation is included in the model to tackle the multicollinearity as it causes all the deterministic variables to increase relatively at the same rate. The estimation process used in the study to make the data set stationary is difference based stationarity, which removed the random walk phenomenon or unit-root. In case of real values the same data set was stationary at level except the variables of inflation and employment, i.e., inflation was stationary at first difference while employment was stationary for intercept and intercept and trend at first difference and the for none this variable was stationary at level.

In time-series regressions involving economic variables at level, give misleading results that is, a high R^2 even without causal relationship between dependent and independent variables has no inferential value [Harvey (1980)]. Granger and Newbold 1974 findings encouraged the researchers to opt first difference of time-series data to eliminate spurious correlations associated with the model variables [Granger and Newbold (1974)]. The study envisaged a model containing differenced variables to avoid limited information based inferential regression decisions.

Taking first difference of the variables involved in a time-series regression model ameliorates the existence of possible multicollinearity among explanatory variables of the model [Burt (1987)]. According to Fox, multicollinearity exists generally from economic cycles of prices, output, consumption and production. The presence of inter-correlation due to the reasons cited above is reduced mostly, by first differencing. Even the presence of serial correlation in the residual terms is also handled by taking first difference [Fox (1958)]. Econometric texts of the 1970s by Dutta, Kmenta, Maddala and Murphy recommended first differencing to tackle multicollinearity [Burt (1987)]. This is why we took first difference and for further analysis logarithms are taken, which give average growth of model variables.

Besides this the study aimed to assess the extent to which the discretionary measures were/are countercyclical. The government spending is further fragmented into current expenditures and development expenditures. The current expenditures are divided into the following categories;

- Defense expenditures
- Interest payments
- Non-defense current expenditures
- Non-interest current expenditures
- Non-defense and non-interest current expenditures

$$\Delta G_t = \alpha + \beta \Delta Y_t + \gamma \Delta G_{t-1} + \delta EM + \eta Inf + \epsilon_t \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \text{(A)}$$

$$\Delta G_{ct} = \alpha + \beta \Delta Y_t + \gamma \Delta G_{ct-1} + \delta EM + \eta Inf + \epsilon_t \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (1)$$

$$\Delta G_{Dt} = \alpha + \beta \Delta Y_t + \gamma \Delta G_{Dt-1} + \delta EM + \eta Inf + \epsilon_t \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad (2)$$

Where ΔG_t = government expenditures,
ΔG_{ct} = current govt. expenditures
ΔG_{Dt} = development based govt. expenditures
Y = GDP
EM = employment level
G_{t-1} = lag based government expenditures
Inf = inflation rate

The novel contribution sought through this study is expressed by the following econometric equations;

$$\Delta G_{dcet} = \alpha + \beta \Delta Y_t + \gamma \Delta G_{dcet-1} + \delta EM + \eta Inf + \epsilon_t \quad \ldots \quad \ldots \quad \ldots \quad (3)$$

$$\Delta G_{icet} = \alpha + \beta \Delta Y_t + \gamma \Delta G_{icet-1} + \delta EM + \eta Inf + \epsilon_t \quad \ldots \quad \ldots \quad \ldots \quad (4)$$

$$\Delta G_{ndcet} = \alpha + \beta \Delta Y_t + \gamma \Delta G_{ndcet-1} + \delta EM + \eta Inf + \epsilon_t \quad \ldots \quad \ldots \quad \ldots \quad (5)$$

$$\Delta G_{nicet} = \alpha + \beta \Delta Y_t + \gamma \Delta G_{nicet-1} + \delta EM + \eta Inf + \epsilon_t \quad \ldots \quad \ldots \quad \ldots \quad (6)$$

$$\Delta G_{(nd\&ni)cet} = \alpha + \beta \Delta Y_t + \gamma \Delta G_{(nd\&ni)cet-1} + \delta EM + \eta Inf + \epsilon_t \quad \ldots \quad \ldots \quad (7)$$

The regression equation '*A*' is a modified form of the model from Fatás and Mihov (2003), which was used for quantitative estimates of discretionary policy. The term 'ϵ'$_t$ will measure the degree of discretion and the variation in discretion will be denoted by $\sqrt{var(\epsilon t)}$. A similar regression model was used by Blanchard and Perotti (2002) for U.S. quarterly data and Alesina, *et al*. (2002). for OECD data. Synchronous values of GDP growth; past values are used as instrumental variables to avoid the endogeneity bias. The political system of Pakistan is based on parliament headed by the prime minister but the study deduces through practice that the president remained more powerful than the prime minister. Most of the ordinances are produced through president house. Presence of presidential influence commands more for the evidence of fiscal discretion. Through market structure too, the study concludes the existence of discretionary fiscal policy in Pakistan i.e. despite the collation government one party throughout the country's political history, ruled the rest with a dominant role. The economic theory longed that one dominant player always exercise its monopoly power which is simply the discretionary power in case of dominant political party. Further, it is amended by adding the variable EM as deterministic variable. Equations from 1 to 7 are extended version of equation A to capture the impact of each deterministic variable.
where

$\Delta G_{dce\,t}$ = change in govt. spending on defense current expenditures
ΔG_{icet} = change in govt. spending on interest payments
ΔG_{ndcet} = change in govt. spending on non-defense current expenditures
ΔG_{nicet} = change in govt. spending on non-interest payments
$\Delta G_{(nd\&ni)cet}$ = change in govt. spending on non-defense current expenditures and non-interest payments

Now to study the link between discretionary government spending and output variation, the data vulnerability is used and equation 'B', 'C' & 'D' serve this purpose. This technique was used by Fatás and Mihov (2003) and is modified according to the

study requirement. The previous regression analysis exhibit the relationship between output volatility and estimated variability in fiscal (government spending) discretion.

$$\log(\sigma^{y}_{t}) = \theta + \lambda \log(\sigma^{C}_{t}) + \mu' X_t + \nu_t \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \text{(B)}$$

$$\log(\sigma^{EM}_{t}) = \theta + \lambda \log(\sigma^{C}_{t}) + \mu' X_t + \nu_t \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \text{(C)}$$

$$\log(\sigma^{Inf}_{t}) = \theta + \lambda \log(\sigma^{C}_{t}) + \mu' X_t + \nu_t \quad \ldots \quad \ldots \quad \ldots \quad \ldots \quad \text{(D)}$$

On the basis of correlation between policy discretion, output volatility and ratio of import and export to GDP will be included to conduct following regression analysis. The inclusion variables is from arguments of Galí (1994), Fatás and Mihov (2001) and Rodrík (1998). Where

σ^{y}_{t} = standard deviation of annual growth rate in GDP per capita
σ^{C}_{t} = volatility in government spending discretion
σ^{EM}_{t} = standard deviation of annual change employment level
σ^{Inf}_{t} = standard deviation of annual change in inflation rate
X_t = ratio of import and export to GDP

Once the discretion of fiscal policy is identified, then its relation with output and employment will be evaluated using standard economic tools. The data will be obtained from State Bank of Pakistan, Ministry of Finance, and Federal Bureau of Statistics.

In the study the model represented by Equation A is estimated both with nominal variable data and with real variable data. The notable point raised in the study is that the error term ϵ_t which describes the size of unexplained variation i.e. fiscal discretion is used to find the standard deviation of ϵ_t to measure fiscal discretion volatility unlike white noise only, an error term for the non-stationary time series data. Another way the study addresses the academicians and policy makers to look at the modeling is the relationship developed to disclose the economic significance for Pakistan economy.

The presence of fiscal discretion is not found through hypothesis testing rather it is evident through the existence of error term ϵ_t. And this error term remained non-zero throughout the estimation process over the period from 1971 to 2009 that is, the fiscal discretion based on government spending is present in Pakistan economy.

5.3. Data

Generally the integral feature of economic research is to analyse data and then theorise it for economic policy management. To serve this purpose the data reliability and accuracy play an important role in research conduction. Empirical precision and economic interpretation depend solely on data source. Our study is based on time series data set. In time series econometrics the analysis are either based on forecasting or dynamically structured modelling associated with hypothesis testing. This study is based on dynamic inter-relationship among model variables existing in Pakistan economy since 1971. Annual data is used for Pakistan economy to estimate the equations modelled in the methodology section of the study. The study was limited to this annual data only because of the unavailability of quarterly data on macroeconomic variables used in the study. The study attempts to present and enumerate the discretionary shocks on macroeconomic variables of Pakistan economy such as; inflation, employment and output. But still the data set contains some thirty nine years observations.

In the original model the panel data set is used for ninety one countries including Pakistan economy. For this study the model is modified with the inclusion of two more explanatory variables of inflation and employment from Pakistan economy. The main reason behind the inclusion of these variables is to investigate whether the government spending is macroeconomic stability driven or not, if yes then to what extent these variables were brought to vary within the targeted range. In this study the time series data set is used to fulfil the country specific macroeconomic analysis.

A time series data suffers from the problems of non-stationarity, autocorrelation, very high R^2 even for the variables with no meaningful relationship and random walk phenomenon. To a greater extent this type of data is assumed to provide predictive information only. Considering these featuristic limitations of the time series data, the data used in this study was passed through some econometric filters to attain econometric purification. The unit-root test was applied to check the data stationarity of the data set of this study.

It was observed that almost all the variables are stationary at the first difference. The elimination of non-stationarity made the data free from autocorrelation and possibility of spuriousness among the model's variable regression analysis. To make study independent of mere forecasts, some meaningful variables of inflation and employment were added. This approach not only made the study dynamic for academic purposes but also for policy making.

5.4. Variable Advocacy

Fiscal tools have multiplier effects on real variables of the economy but there exists a unique difference in the multiplier impact of government spending and tax. Pakistan economy is typical developing country with substantially high debt, looming inflation and unemployment, unfavourable balance of payments at current account etc. The size of government spending varies between 19 to 33 percent and on average 22 percent since 1971. Being the component of GDP, the government spending is an impulse to other variables of inflation and employment. The government spending is assumed to bump up output and employment but reduce inflation. To analyse the actual impact of government spending it is broken down into two main components of;

Development Expenditures, and
Current Expenditures.

According to Overlapping-Generations model government spending enhances output by boosting research and development, education, employment and welfare, Diamond (1965). The diagram below shows an inclining trend in current expenditures which are on average 75 to 85 percent of government spending (Economic Survey of Pakistan), while development expenditures are declining and far lower than current expenditures over the given period except some fluctuations.

This variation commands the study to address the questions framed during the theorisation of variable advocacy. To the end, these are included in the model. The variable of trade is included as a control variable to address output variation along with the fiscal policy as suggested by Rodrik (1998), while the other control variables such as inflation and employment are included to assess the impact of fiscal discretion and

evaluate the link between them. Another reason for the inclusion of these variables in equation 'B', 'C' and 'D' is to explore the possible economic significance for both academic and policy making purposes.

6. FINDINGS

A noticeable feature of the estimation is very small R^2 value but it is in accordance with econometric literature available on time series data i.e. the difference based OLS estimations observe a small sum of squared residuals [Plosser and Schwert (1977)]. Time series estimations made at level give high R^2 but with first difference based estimations reveal lower values of R^2, this variation in R^2 due to change in time series equation from level to difference makes it least important in this context [Harvey (1980)]. The estimations made in this section of the study are over the period of thirty nine years, starting from 1971. This section represents the empirical analysis tables for each equations followed by the graphical and theoretical support to state the economic meanings of this estimation drawn by digging the time series data deep.

$$\Delta G_t = \alpha + \beta \Delta Y_t + \gamma \Delta G_{t-1} + \delta EM + \eta Inf + \epsilon_t$$

Intercept	**0.003 (0.096)**
Output Volatility	0.576 (1.323)
Govt. Spending Lag1	0.101 (0.596)
Employment Level	–0.001 (-0.018)
Inflation	0.016 (0.404)
R^2	0.148

In this main model of the study, except government spending lag for real data no other independent variable influenced the dependent variable of government spending significantly, over the period of time of the data set. The study observes that the public policy-makers did not use government spending to counter the output gap, high unemployment sustained in the economy. It means that policy-makers and rulers did not change their spending habits for psychological, technological or institutional reasons, which is quests the planning process as well as the economic intellect of the planners over this period of time.

$$\Delta G_{ct} = \alpha + \beta \Delta Y_t + \gamma \Delta G_{ct-1} + \delta EM + \eta Inf + \epsilon_t$$

Intercept	0.041 (0.373)
Output Volatility	0.590 (1.147)
Govt. Spending on CE Lag1	–0.004 (–0.022)
Employment Level	–0.010 (–0.152)
Inflation	–0.002 (–0.058)
R^2	0.065

The second attempt of the study is based on the government spending analysis on the basis of current and capital expenditures made in the Pak-Economy. The above table gives the empirical outcome of current expenditure based auto regression results. Again on market price basis the public financial management does not reflect counter cyclical approach as all independent variables are insignificant.

$$\Delta G_{Dt} = \alpha + \beta \Delta Y_t + \gamma \Delta G_{Dt-1} + \delta EM + \eta Inf + \epsilon_t$$

Intercept	–0.081 (–0.478)
Output Volatility	0.508 (0.654)
Govt. Spending on DE Lag1	0.136 (0.901)
Employment Level	0.034 (0.327)
Inflation	0.049 (0.734)
R^2	0.117

For the capital expenditures, the explanatory variables have no significant impact except the lag-based capital expenditures of the data set. It shows insensitivity of the policy makers to technological changes and employment generating project planning. The inverse relation between dependent and its lag independent variable discloses a decline in current year followed by last year rise in development expenditures rather it should exhibit a positive relation according to economic theory.

$$\Delta G_{dcet} = \alpha + \beta \Delta Y_t + \gamma \Delta G_{dcet-1} + \delta EM + \eta Inf + \epsilon_t$$

Intercept	–0.004 (–0.024)
Output Volatility	–0.142 (–1.152)
Govt. Spending on DFE Lag1	0.162 (0.924)
Employment Level	0.018 (0.148)
Inflation	0.039 (0.481)
R^2	0.036

The defence expenditures are not influenced by explanatory variables for the nominal data set but for real data set intercept, employment level and inflation are significant that is the defence spending is responsive to change in these control variables. The intercept significance shows Random Walk with Drift and this intercept component of defence spending is independent of any other economic variable. The study observes a positive correlation between output volatility and defence spending and an inverse relation with employment level and inflation. It means an increase in output; inflation and employment level will result in increase and reduce defence spending respectively.

$$\Delta G_{icet} = \alpha + \beta \Delta Y_t + \gamma \Delta G_{icet-1} + \delta EM + \eta Inf + \epsilon_t$$

Intercept	0.464 (2.154)
Output Volatility	1.485 (1.523)
Govt. Spending on IE Lag1	–0.395 (–3.934)
Employment Level	–0.385 (–2.942)
Inflation	0.128 (1.510)
R^2	0.529

The interest spending of the government for nominal data set, the intercept, lag-interest spending and employment level contribute significantly to explain the dependent variable of the above regression equation. Intercept has significant Random Walk Drift impact on dependent variable. Negative coefficient of government debt servicing shows a reduction in current year spending if lag spending is increased. It is questionable as it is

not supported by the debt servicing data over the study period. An increase in employment level is only possible if debt servicing falls otherwise reverse is true and study observes it as a consequence of ever rising debt of the country. Further the study finds that increase in inflation resulting in swelling of interest payments.

$$\Delta G_{ndcet} = \alpha + \beta \Delta Y_t + \gamma \Delta G_{ndcet-1} + \delta EM + \eta Inf + \epsilon_t$$

Intercept	0.015 (0.103)
Output Volatility	0.675 (0.978)
Govt. Spending on NDFE Lag1	–0.050 (–0.278)
Employment Level	0.012 (0.139)
Inflation	–0.010 (–0.174)
R^2	0.041

The control variables of this auto regression model equation for the data set are insignificant which means either these variables have no economic significance on non-defence government spending or change in these variables is so small that the policy makers were not attracted by this variation at all. In either case the study deems it as a professional lapse on behalf of the public financial experts of the nation.

$$\Delta G_{nicet} = \alpha + \beta \Delta Y_t + \gamma \Delta G_{nicet-1} + \delta EM + \eta Inf + \epsilon_t$$

Intercept	0.030 (0.253)
Output Volatility	0.615 (1.132)
Govt. Spending on NIE Lag1	–0.147 (–0.844)
Employment Level	0.014 (0.196)
Inflation	–0.026 (–0.541)
R^2	0.066

The explanatory variables for this equation for nominal data set have no significant impact on non-interest government spending. It means increase in inflation will reduce non-interest government spending or increase debt servicing.

$$\Delta G_{(nd\&ni)cet} = \alpha + \beta \Delta Y_t + \gamma \Delta G_{(nd\&ni)cet-1} + \delta EM + \eta Inf + \epsilon_t$$

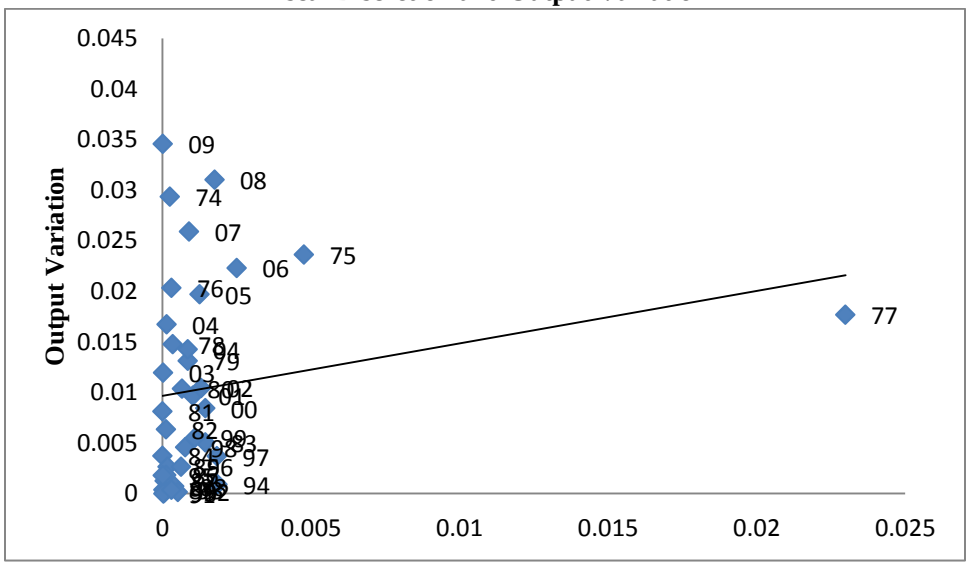
Intercept	–0.041 (–0.241)
Output Volatility	0.822 (1.033)
Govt. Spending on NDFNIE Lag1	–0.209 (–1.231)
Employment Level	0.077 (0.737)
Inflation	–0.058 (–0.825)
R^2	0.102

Here for nominal data set the study finds no significant impact of independent variables on non-defense and non-interest government spending. The study finds variation in independent variables is either insignificant or the level and direction of discretion is independent of macroeconomic variables. It means neither institutional nor technological changes to achieve desired size of these control variables influenced the no-defence and non-interest public spending.

Based on empirical results the study finds reasonable size of fiscal discretion but this discrete public spending is not in the line of output changes, employment and inflation variations. This confirms the fiscal economic theory as sustained portion of government spending is based on current expenditures of debt servicing and defence. The development expenditures in Pakistan remained 15 to 25 percent of total government spending that is why Pak-economy observed insignificant improvement in real output and ultimately it suffered from severe inflation and unemployment. Our study concludes that discrete spending will stay insignificant in Pakistan until its current expenditures are too high as compared to development expenditures. According to tax collection figures the indirect taxes are significantly larger than direct taxes, which is totally against the fiscal economics spirit. Indirect taxes of sales and excise caused an increase in cost of production as these are regressive in nature. It is a major cause for macroeconomic variables' adverse volatility.

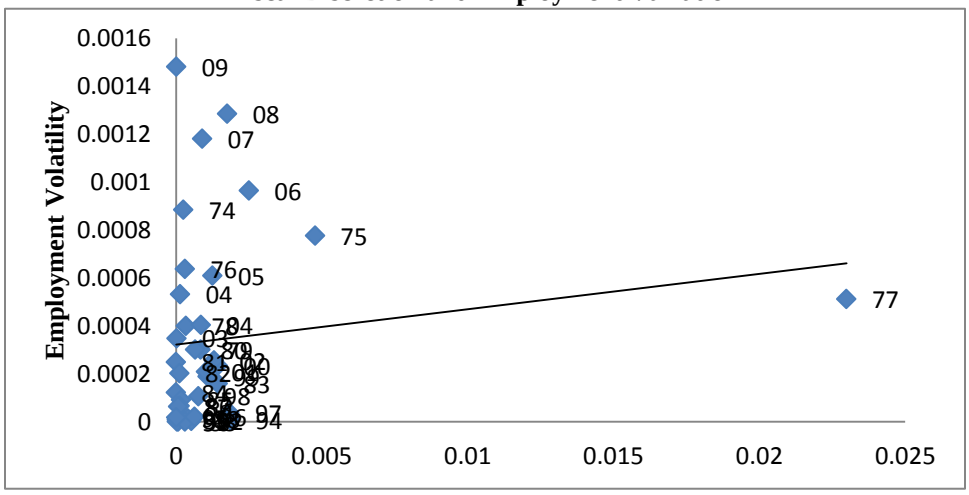
Graphical part of the study shows possible relation between fiscal discretion and macroeconomic variables of output, employment and inflation the data is divided in different segments on the basis of political and non-political rule in the country. This approach allows the study to present regime specific correlation between fiscal discretion and variation in independent variables of the model. Over the period of data set used, the study depicted a difference in trends that is why through scatter sketched trends are shown to highlight the regime specific influence of fiscal discretion on output, employment and inflation variables of Pak-Economy.

Fiscal Discretion and Output Variation



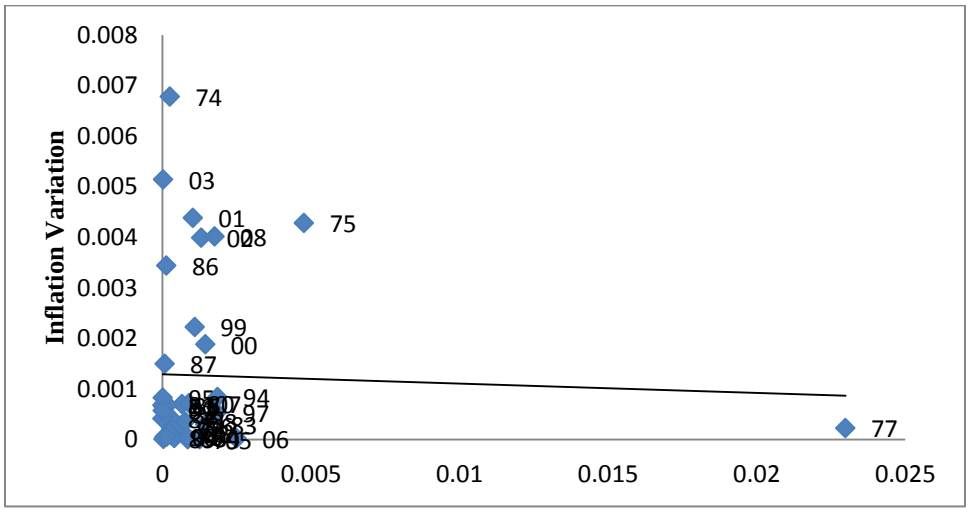
The study exhibited a positive correlation between fiscal discretion and output variation in Pak-Economy over data set period, a 1 percent increase in fiscal discretion of government spending results in 1.5 percent increase in output volatility. The similar size of fiscal discretion causes 0.25 percent output volatility for real figures. In both the cases fiscal discretion increased output gap.

Fiscal Discretion and Employment Variation



Over this period the 0.05 percent increase in fiscal discretion caused employment level variation to increase by 0.01 percent. The surprising feature of this fiscal discretion through government spending to increase employment opportunities probably did not address the purpose. Economically speaking the study finds a failure on part of fiscal planners and public policy makers unable to reduce unemployment despite a consistent deficit at budget, which is in a way a reason for piling external and internal debt.

Fiscal Discretion and Inflation Variation



This figure displays negative correlation between fiscal discretion and inflation variation over the data set time period but for further hidden link exposure the study broke the data set into political and non-political rules. An increase in fiscal discretion by 0.5 percent decreased inflation merely less than 0.1 percent. It seems that fiscal spending either did not control inflation or it was not used effectively to curtail inflation to the

desired range. Intuitively the inflation in Pak-Economy is cost-push in nature, rather demand-pull. The scatter sketch for figures shows that most of the time the fiscal discretion and inflation spotted close to the origin, which reflects fiscal discretion neutrality. The flatter trend discloses the insensitivity but the negatively sloped trend does exhibit the possibility to counter inflation volatility with increase in fiscal discretion. Intuitively the study claims the inflation variation in Pak-Economy cost-push inflation as increased public spending is decelerating the rate of increase in price level.

To estimate the fiscal discretion and macro-economic variables' volatility a uniform statistical measure is used, which is variance. Fatás and Mihov (2003), used '$Є'_t$ for quantitative estimates of discretionary policy. While the degree of discretion and the variation in discretion was evaluated by $\sqrt{var(Єt)}$, but due to quarterly data unavailability on output and employment the study used simply variance to attain yearly based variability in the macro-economic variables of output, employment level and inflation.

$$log(\sigma^{y}_{t}) = \theta + \lambda\, log(\sigma^{Є}_{t}) + \mu' X_t + \nu_t$$

Intercept	–5.656 (–0.856)
Fiscal Discretion	0.039 (0.769)
Trade Openness	3.392 (0.758)
R^2	0.510

The study finds insignificant role of fiscal discretion on output of Pak-Economy, which means policy makers over this period did not focus on government spending for gross domestic product growth. Similarly the trade openness too, is insignificant, supported by the consistent trade deficit at current account. The study suspects the possibility of substantial government spending on export promoting projects but sustained current account deficit and discretion exercised by the fiscal planners could not win investors confidence. This is why output volatility is not addressed effectively.

$$log(\sigma^{EM}_{t}) = \theta + \lambda\, log(\sigma^{Є}_{t}) + \mu' X_t + \nu_t$$

Intercept	–0.029 (–0.006)
Fiscal Discretion	0.000 (0.000)
Trade Openness	–1.703 (–0.645)
R^2	0.840

This table gives insignificant results of fiscal discretion on employment level of Pak-Economy. This means fiscal discretion failed to raise employment opportunities. It is a consequence of fiscal planning against labour intensive projects. This might be the reason for consistent increase in informal sector in Pak-Economy and the ultimate reason for high consumption driven and poorly documented economy. Economic theory is evident for poor or fall in GDP growth if maximum government spending is allocated for current expenditures in present. This results in fall in future growth as well as living standards.

That is, the fiscal discretion did not influence the macroeconomic variable of employment which is the most important variable in Keynesian economics. In a way,

public policy did not focus the involuntarily unemployed labour force of Pakistan. Intuitively, it is responsible for low growth due to under utilisation of available economic resources.

$log(\sigma^{Inf}_t)$	$= \theta + \lambda\ log(\sigma^{C}_t) + \mu' X_t + \nu_t$
Intercept	–0.522 (–0.128)
Fiscal Discretion	–0.021 (–0.278)
Trade Openness	–1.225 (–0.445)
R^2	0.007

The fiscal discretion is insignificant as it did not address inflation for the data set of Pak-Economy. But trade openness has negative but significant impact on inflation. But trade openness did have significant impact on inflation. It means increase in trade openness caused an increase in inflation. It is due to increased dependence on imports and absence of scale effect due to very small export sector.

Through this attempt the study exposes the political and institutional stance of the ruling parties in Pakistan in managing fiscal tools particularly government spending. The study argues constitutional changes in political parties' agenda by imposing restrictions on current government spending especially through structural budget adjustment of at least 0.5 percent of tax revenue.

7. CONCLUSIONS AND SUGGESTIONS

As the explanatory variables used in this study do not influence the government spending except the lag based spending by government, so it is assumed that fiscal spending is made on the basis of last year spending. This makes the study to presume that neither development expenditures nor current expenditures are influenced by a change in economic activity; this is why government spending in Pakistan over this period of study remained insignificant for macro-economic variables of output, employment and inflation. Succinctly, fiscal spending does not address these variables at all i.e. the fiscal spending is independent of economic situation or it was not counter cyclical.

Aggressive government spending on current expenditures of defence and interest payments reduced the available funds to stimulate the economic activity. The study finds the absence of simulation as econometric models were probably used only for predictions. The study suggests the use of these models by the government of Pakistan to assess the effects of increase or decrease in government spending by a certain percentage on output, employment and inflation. Further loans should not be taken unless costs and benefits analysis do not suggests. There is a need for looking into non-defence and non-interest spending to be reorganised so that policy-makers can address economic activity driven variables to reduce the gap between potential and actual output.

The study recommends exploring the government spending on current and development expenditures to investigate whether this spending is in the line of changing economic conditions. This activity will enable the policy-makers to find accurately they anticipated the new levels of production, employment and price level. The study suggests to find alternatives of funding budget deficits as it may have pushed the discount and interest rates up which probably resulted in '*crowding-out effect'*.

To reduce defence expenditures the study necessitates a no war pact between Pakistan and India for a period of five years initially followed by a mutual agreement on defence budget reduction. Sustained deficit budgets increased government borrowing both from local and foreign donors. This increased borrowing raised the discount rate which increased deindustrialisation due to expensive money from Pakistan. The country needs structural budget adjustment as well as a maximum limit on all types of government spending to avoid unnecessary budget deficits and active participation of practicing economists to make budget. It will not only reduce lavish cabinet spending but will improve public trust in politicians along with restriction on irresponsible rulers' behaviour.

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