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FISCAL DISCRETION AND AGGREGATE DEMAND: A CASE STUDY OF PAKISTAN

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ABSTRACT
The goal of the study is to investigate the impact of discretionary fiscal policy on aggregate demand. Secondly, we analyze the factors that affect fiscal discretion regarding Pakistan over the period 1984-2020.The discretionary fiscal policy is measured by using fiscal policy rule. We exert Generalized Method of Moments (GMM) in order to find the relationship between variables. The results show that fiscal discretion has no effect on aggregate demand. Findings also show that government size, income level, institutional quality and country size are negatively related to fiscal discretion while inflation rate is positively related to fiscal discretion. High efficacy of institutions and more checks and balances on government reduce the discretion. High inflation is related to high price volatility, which ultimately affects discretionary spending.

Keywords: Fiscal Discretion, Ricardian Equivalence, Institutional Quality, Generalized Method of Moments, Fiscal Policy Rule
JEL Codes: H72, H61

I. INTRODUCTION
In developing countries, government spending, taxation and borrowing have a significant role to play in accelerating economic growth. In fact, fiscal policy is a powerful tool in the hands of the government to achieve its development goals. The role or purpose of fiscal policy in a developing economy is to change the pattern of investment in the desired direction by maintaining capital formation and investment rates, retaining or growing the adequate supply of capital and consumer goods and services, maintaining price stability and, most of all, equating the distribution of national income. By using taxes and expenditures, fiscal policy variations can respond to the business cycle in two ways i.e. countercyclical and procyclical fiscal policy. Usually, in developing countries, the fiscal policy has typically been procyclical. In procyclical fiscal policy, government follows expanding fiscal policy, as government increases spending or cut taxes in good time, but during recession government uses tighten fiscal policy; government cuts spending or raised taxes. Whereas, developed countries usually conduct countercyclical fiscal policy. In countercyclical fiscal policy, government follows expansionary fiscal policy in recession by cutting taxes or increasing spending, on the other hand in good time, government conducts fiscal policy to cool down the economy by cutting the spending and raising the taxes.

Every government segregates its fiscal policy into two parts – first one is discretionary and second is non-discretionary. Non-discretionary fiscal policy, technically called automatic stabilizer, is not at the discretion of the government and these policies turn out impact automatically without any specific new legislation, decrease (increase) budget deficits during times of booms (recessions). These measures may include progressive taxation, tax cuts, employment incentives, subsidies and unemployment compensation. Automatic stabilizers increase GDP when it falls and decrease it when it rises. For example, at the point when the economy become stagnation and individuals lose their jobs, the government automatically spends more on unemployment benefits. On the other hand, during economic growth, individuals earn more and give more taxes while unemployment rate is lower. Consequently, the government spends less on unemployment compensation. As far as second component of the fiscal policy, discretionary fiscal policy, is concerned government deliberately attempts to induce changes in the economy through government spending or taxes, to stabilize the economy. Discretionary policy is a conscious manipulation of the

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state expenditure and taxes. The first carry changes of the state purchases of the goods and services, transfer payments etc., the second – changes in the taxation (rates of taxes, tax privileges, base of the taxation etc.). This suggests that governments typically have a limited range of options when trying to utilize fiscal policy to mitigate short-term output shocks (Audi and Ali, 2016; Audi et al., 2021; Audi et al., 2021; Audi et al., 2021). Additionally, governmental commitment to instantly improve the situation of the economy typically serves as the foundation for discretion. It also refers to short-term budgetary measures that democratic governments are legally permitted to initiate and terminate. With the presumption that discretionary spending pursues transient and reversible goals, temporary decisions account for the absence of persistence. Indeed, many countries endeavour to meet up the aggregate demand and to boost the economic growth by using discretionary fiscal policy (Ali and Naeem, 2017; Ali, 2011; Ali, 2015; Ali, 2018; Ali and Bibi, 2017; Ali and Ahmad, 2014; Ali and Audi, 2016; Ali and Audi, 2018; Ali and Rehman, 2015; Ali and Senturk, 2019). Generally, government can meet the aggregate demand with the increase in taxes. To stimulate the economy, governments can cut down taxes when aggregate demand is high. In 1990s, the Japanese government disbursed $1.4 trillion on infrastructures such as roads, bridges, breakwater, dams and even on parking to stem the steady decline in aggregate demand. The fundamental purpose of development spending in Japan was to increase aggregate demand. This is a paradigm of discretionary fiscal policy to mobilize the economy using government construction spending[4].

The government uses expansionary discretionary fiscal policy when it increases expenditures or decreases taxes. This policy is commonly used in recession; it creates jobs that can be created through public works programs or indirect through contractors. Creating jobs increases demand by giving individuals more money to spend. Taxes are reduced by the government, which increases disposable income for citizens this boosts aggregate demand and boosts economic growth. The Economic Stimulus Act ended the Great Depression in a matter of months because the metal accumulates when taxes and government spending are reduced at the same time. Between March and October 2009, 640,000 jobs were created using a combination of tax cuts, public works projects, and unemployment payments[5]. When an economy is in a situation where growth is spiralling out of control and causing inflation and asset price bubbles, contractionary discretionary fiscal policy is used to keep inflation at a stable level. A contractionary discretionary fiscal policy will reduce government spending and/or increase taxes, this policy will reduce aggregate demand.

Pakistan economy has been plagued by financial imbalances since independence, with government spending pushing up tax revenues. It has not only enlarged the gap between government spending and tax revenue but also increased public debt. The discount rate rises if the government borrows on the domestic market because the private sector has less access to credit. Regardless of the issue of governance and the persistently bad economic indicators of growth, inflation, employment and negative net exports, every government takes an oath with claims to stop these economic woes. Policy makers formulate policies, but they only contribute to small part of the economy. This deliberate fiscal management to enhance production and development and to curb the issues of unemployment, inflation and other economic crisis increase the essentialness of fiscal discretion in the world as well as in Pakistan. Smaller countries like Pakistan, because of less developed financial markets, have more volatile business cycles, and simultaneously most of the discretionary fiscal policy can be relied upon. Due to instability in the economy such as law and order situation and lack of financial resources, etc., and small automatic stabilization, small governments do not have stable government spending. As smaller economies, which are characterized by more volatility in output and shocks, can utilize government spending more aggressively (Afonso et al. (2008). There is limited work on discretionary fiscal policy in Pakistan. In this respect, Ismail and Husain (2012) analyzed the effect of fiscal discretion on output, inflation and employment variation. Our study will contribute by analyzing the effect of fiscal discretion on aggregate demand, additionally, we will also examine the determinants of fiscal discretion. In the light of the problem statement and significance of the study, we can explain the objectives of our study. The principle objective of the study is to determine the fiscal discretion by using fiscal rule approach and then to analyze the effect of fiscal discretion on aggregate demand in Pakistan over the period of 1984-2020.
The study objectives are summarized as;

- To measure the fiscal discretion as it is unobservable.
- To analyses the effect of fiscal discretion on aggregate demand.
- To determine the factors affecting fiscal discretion.

[4] Krugman & Wells (2006)

[5]https://www.thebalance.com/discretionary-fiscal-policy-3305924

- To propose suitable policy implications based on empirical findings.

II. REVIEW OF LITERATURE

In this section we will discuss prior empirical literatures on the discretionary fiscal policy. Literature review is an important aspect of research methodology. It helps the researcher to be aware of the magnitude of the work that exists or it can help to advance the existing study, it is helpful to refine the learning outcomes compared to the previous results. Taylor (2000) analyzed the fiscal policy rule with budget surplus, which was taken as an output gap for the U.S. economy from 1960 to 1999. The study estimates automatic stabilizers besides systematic discretionary fiscal policy. The changes in government spending and taxes because of automatic stabilization are far greater than discretionary fiscal changes. Changes in government expenses affect aggregate demand, however changes in automatic stabilizers are more unsurprising and quicker than discretionary changes. Empirical findings suggest that monetary policy has become more responsive to the economy, as compared to the fiscal policy which may be less responsive. Empirical results show that over time, automatic stabilizers are less responsive whereas, discretionary policy actions have shown less consistent response.

Auerbach (2002) has reviewed the recent state of discretionary fiscal policy of United States. Recently, US discretionary monetary policy is more proactive in responding to both budget balances and cyclical conditions, but there has been considerable uncertainty about the impact of discretionary fiscal policy on productivity using data from 1956 to 2001. The study evaluated that the policy has played a key part in stabilizing the potential weakening of its impact, but the tax system, as an automatic stabilizer, has many aspects that undermine its potential role, especially with regard to investment. The budgetary pressures not only have an effect on the fiscal response, but can also undermine the effectiveness of expansionary fiscal policy. Contrarily, contractionary fiscal policy not only restricts activity, also has a productive effect on output. These findings suggest focusing on making stabilization more effective automatically, using discretionary policy prudently, and integrating better fiscal balance measures into the discretionary policy process.

Fatas and Mihov (2003) examined the fluctuations in production of 91 countries during 1960-2000 and the impact of discretionary fiscal policy on economic expansion. The Blanchard (1993) methodology was employed in the study to separate discretionary fiscal policy from fiscal rule. In all cases, the results prove that discretionary monetary policy is used aggressively and is associated with fluctuations in business and economic growth. Instrumental variables are taken from political-economic literature. The use of these tools exposes the interesting links between political economy variables as well as fiscal policy. Rich countries have more political barriers, which often use discretionary policy. The results illustrate the benefits of imposing restrictions on policy discretion, as the reduction in business fluctuations has negative welfare effects.

Larch and Salto (2003) have discussed the limitations of the utilization of cyclically adjusted primary balance (CAPB) changes as a manifestation of discretionary fiscal policy. Public finance data from the EU's four largest countries shows that passive behavior is a significant part, as predictive errors are important to clarify changes in the cyclically adjusted balance (CAB). Budget growth estimation is expected to rise sharply in Germany, Italy and France, while growth forecasts in the UK are unbiased or neutral. The regression analysis tested out the relationship between the CAPB and non-cyclical growth the forecast errors for verify this implication. Conversely, when potential growth is considered overestimate, CAPB's condition worsen whereas, when potential growth is considered underestimated, CAPB perks up. The fiscal deficit in some of the largest EU countries has highlighted the potential for correlations between growth forecasts and budget implementation.

Hagen (2005) compared the performance of fiscal policy and also examined fiscal rules in Europe and Japan from 1980 to 2003 using the growth-accounting technique described in Hughes-Hallett et al. (2001) The significance of budgetary institutions for the adequacy of fiscal laws was also discussed. He pointed out that the financial standards in the EU have some impact on discretionary fiscal policy prior to the launch of the European Monetary Union (EMU). The study divided European fiscal law into two parts as soft rules and hard rules. The soft rules focus on key budget limits, including annual non-essential claims. Hard rules include a spending mechanism that strengthens management's ability to meet these objectives. This study shows that the EU's monetary guidelines have further enhanced the improvement of budget organizations in countries where the world of politics is on a standardized basis for dealing with financial discipline. Since the launch of the EMU in 1999, fiscal policy in all countries except Austria and Portugal has expanded to the European Union. The Japanese analysis indicates that the Japanese discretionary monetary policy after 1991 differed in three respects from the discretionary policy under the 1980s

fiscal rule. To begin with, it expanded significantly larger and larger also, it became countercyclical. Third, it turned out to be quite expansionary in the election years. It recommended that the 1980s fiscal regime affected discretionary fiscal policy.

Hunt (2005) parted government expenditures of Irish fiscal policy from 1969 to 2003 into discretionary and non-discretionary i.e. cyclical components. In addition, he segregated the discretionary factor to feasible discretionary consumption, government investment, and current transfers. There are two sub-components of expenditure, the consumption of feasible discretionary government and the feasible transfer of current discretion. Feasible government investment was taken as total government capital expenditures less government transfers, which is strongly pro-cyclical. Overall, government expenditures are acyclical and more strongly effected by fiscal discrimination rather than GDP growth. He concluded that in areas where policy makers have real discretion and complete freedom to maneuver is a symbol of fundamental economic principles.

Kalckreuth and Wolff (2007) proposed a technique of determining discretionary fiscal policy with real-time GDP data for Germany, taking Blanchard and Perotti (2002) assumptions, by using semi-structural VAR from 1965 to 2005. Government spending reacts significantly to measurement errors, which are related to discretionary fiscal policy only, not to automatic stabilization. The study found that if real-time GDP is lower than true GDP, then government spending is adjusted upwards, which calls into question the identity of Blanchard and Perotti (2002) assumption. Further, it suggested that fiscal policymakers should use short-term funds to purchase goods and services in response to GDP updates.

Afonso et al. (2008) have segregated fiscal policy into three components i.e. responsiveness, persistence and discretion, with data from EU-15 countries during 1970-2007, as well as taking sample of 132 countries from 1980 to 2007. The results show that in most countries fiscal policy is cyclical, in other words, the response is usually small while persistence is an important component. There is a considerable trade-off between discretion and persistence. For both revenue and expenditure, the effect of cross-country covariates is negative for persistence and positive for discretion and vice versa, which suggest that countries with more persistence have little discretion and inversely. Government size, country size, and revenue negatively affect the discretionary components of fiscal policy, they are persistent in fiscal policy to some extent. Besides, once considered a regional dummy, macro and political and institutional factors cannot reflect responsiveness.

Badinger (2008) analyzed the relationship between cyclicality of output fluctuations, fiscal policy, and economic development using data of 88 countries from 1960 to 2004. Institutional and political characteristics of countries used for identifying the impact of cyclicality on output volatility. Both countercyclical and pro-cyclical fiscal policy amplify output volatility. The output volatility, that is due to cyclical and changes in discretionary fiscal policy, is adversely related with economic growth. The effect of cyclicality of economic growth is not direct except the volatility of the output. These results recommend that fiscal rules should be implemented, as this would reduce the utilization of discretionary and cyclical fiscal policy, which expand economic growth by receding volatility.

Furceri and Ribeiro (2008) have empirically evaluated that smaller countries spend more volatile government expenditures using panel data sets of 160 countries from 1960 to 2000. The results are robust to various countries samples and time, different econometric techniques; like OLS estimation, fixed effect estimation and others, and also takes several sets of control variables. The debate escalated to the point that as the country has large size, it reduces the volatility of government spending because it works as a shock and it moves to increasing returns to scale. The study also exhibits that the size of the country is adversely associated with discretionary government consumption/spending. In smaller countries, government spending on education, health and defense is more volatile, but not on public services, public order and social security.

Fedelino et al. (2009) explained the mechanism for changing the overall fiscal balance between automatic and discretionary affects, cyclical and cyclically adjusted components. These measures are generally used to evaluate how fiscal policy responses to economic conditions. This study emphasizes on the methodology used by the IMF's Fiscal Affairs Department (FAD). The results show that when economic activities slow down, government revenues are negatively impacted and government spending rise automatically, resultantly deteriorate fiscal balance. These activities may give the sense of expansionary (or contractionary) discretionary policy actions, although these transforms are taken by cyclical factors. Various spending plans also automatically respond to business cycles, such as unemployment remuneration or other social transitions, designed to cope with deteriorating economic conditions.

Changes in the cyclically adjusted primary balance can be established with cyclically adjusted expenses and revenue. The structural primary balance is not affected by cyclical variations. Variations in cyclically adjusted primary balance are usually availed to find the size of the discretionary policy.

Beetsma and Giuliodori (2010) explored the theoretical alongside empirical implication of discretionary fiscal policy variations in both; closed and open economies, and afterward extended Beetsma's (2008) analysis also examined the consequences of expected variations in government spending and its components on local activities, the external balance and public budget, based on panel vector authorizations (VARs) used for samples of 14 European Union countries from 1970 to 2004. Besides, the study looked at spill-overs activity in EU trade partners. A fiscal expansion increases output as well as consumption and suppresses the trade balance. The stimulus effect of higher expenditure is weaker and the diminishing trade balance is inflated for more open EU countries, which is more consistent to leakage effects. This study illustrates that import elasticity for trade within the EU is higher than for trade with countries outside the EU. Furthermore, in a direct estimate of the spill-over impacts for cross-border, the fiscal expansion of the EU's major economies is of paramount importance for economic activity with key trading partners.

Hebous (2010) has reviewed the literature, theoretical strand, and also applied Vector Autoregression (VAR) to find the effect of discretionary fiscal policy on economic aggregates in the short term. After reviewing various studies, he concluded that the implementation of an expansionary fiscal shock increases productivity, but its magnitude also relies on the country and on the sample. Consumption is positively related in most studies, particularly in cases which have unanticipated shocks. In addition, employment increases after an expansionary fiscal shock. The consequences of real wages and alongside interest rates are ambiguous so that no perception can be made. The real exchange rate drops consequent to an expansionary fiscal shock. The expansionary fiscal shock unfavorably influences the trade balance and the current account. Finally, the results show that fiscal expansion stimulates the economy.

Badinger (2011) investigated the association of discretionary fiscal policy with economic stability in the output and inflation fluctuations of the 20 OECD countries through cross-section, taken annual as well as panel data. In cross-section analysis, instrumental variables are selected by sample of institutions, like electoral systems and political barriers, whereas, in panel analysis applied a GMM estimation to check the sensitivity of the outcomes. He concluded that discretionary fiscal policy considerably influences the volatility of GDP per capita and its segments. Moreover, fluctuations in inflation are not directly affected but its main factor is output volatility so inflation volatility is indirectly increased by discretionary fiscal policy.

Skeete (2011) examined the economic impact of discretionary fiscal policy, as increased government spending and tax deductions, using structural VAR and structural vector error correction models in Caribbean countries from 1980 to 2009, presented by Blanchard and Perotti (2002) and Perotti (2004) to identify financial shocks. This study shows that government expenditure policies can stimulate the economies of Jamaica, Trinidad and Tobago, but not Barbados. In stabilizing the fiscal balance, discretionary tax policies were found to be favorable. The positive effects of the tax shock associated with GDP suggest that tax cuts to stimulate Caribbean economies may not delay the desired results. In particular, the study suggests that tax reforms planned to reduce debt growth and fiscal deficits could yield attractive results whereas improving the GDP growth of all countries.

Agnello and Cimadomo (2012) measured the response of discretionary fiscal policies of the government budget to economic fluctuations in EU countries. This study presented latest indication of the cyclical activities of fiscal policy of EU countries from 1998 to 2008. The study highlights the legislative changes in contributions to social protection and taxes, as given by the European System of Central Banks (ESCB) disaggregated approach. Legislation changes that have a budgetary impact on discretionary segment of fiscal policy are generally definitely more viable than fiscal measures. Particularly, it investigates regardless of whether EU governments executed countercyclical revenue composed fiscal policies which assisted to smooth the business cycle, for example, during a slowdown implementing expansionary policies while raising taxes. Above all, during economic expansion, direct taxes collected from consumers are reduced significantly. Whereas, variations in indirect tax laws emerge to be a cyclical and estimates are in favor of pro-cyclicality based on adjusted indicators. Furthermore, indirect taxes are a sub-component of revenue that apparently used to sturdy the debt-to-GDP ratio of the government.

Ismail and Husain (2012) scrutinized the impact of government discretionary spending on output, employment levels and inflation from 1971-72 to 2009-10. The residual term of a discretionary fiscal policy is identified by the political system and market structure. The fiscal mechanisms of government spending and taxes are performed to deal with the negative fluctuations in economic activities. The descriptive variables do not affect government expenditure other than government spending, it is assumed that fiscal expenditures are based on past year's expenditures. This study suggests that neither development spending nor current spending is affected by changes in economic activity. The fiscal discretion has not considerably affected the productivity, employment and inflation. Finally, it is suggested that in order to achieve the desired effect on economic variables, a politically and economically sound policy framework should be made practical to government policy makers at the discretionary policy process.

Tagkalakis (2013) examined the effects of variations of discretionary fiscal policy on real GDP, private consumption, private residential as well non-residential investment, and net exports in Greece from 2000 to 2011. The results depict that change in discretionary fiscal policy have Keynesian effects. Nonetheless, a rise in public consumption has clear positive impact on productivity growth, private consumption and non-residential investment, while diminishing residential investment. However, a reduction in net transfers is related to a decline in private investment and income growth. Crowding of government investment projects in private investment are diminished, and adversely associated with the net export. Both direct and indirect taxes decrease disposable income and reduce expenditure, specifically it cut back productivity growth, private consumption and private investment. Nonetheless, by reducing more direct taxes, then disposable income decreases the imports, therefore raising the balance of trade.

Coricelli and Fiorito (2013) identified the components of discretionary spending for the OECD countries during 1980-2011, using a series of expenditure fluctuations and persistence properties. Government spending is determined through inertial and automated components. On the other hand, the portion of discretionary spending is negligible of about 30% of total primary spending in OECD countries. During a recession, a small portion of discretionary spending significantly reduces the counter-cyclical fiscal policy stance, moreover, in many cases it runs pro-cyclically. The study analyzed that 14 out of 15 countries have more fluctuations in discretionary spending than non-discretionary spending.

Attinasi and Klemm (2014) investigated the effect of discretionary fiscal policy on economic growth of 18 European Union (EU) countries from 1998 to 2011. Static as well as dynamic panel data approaches are used, and evaluated that fiscal stability may hinder economic growth, while certain budget category is not statistically significant. Overall, the findings also illustrate that cost-based adjustments are less destructive than revenue-based adjustments. In addition to spending cuts, declining government investment and consumption shows slow growth. In revenue, indirect tax increases have a considerable negative impact. Dynamic attributes recommend that stability generally diminishes growth in the year, whereas potential growth rates are influenced simply by the persistence. Non-linear indicators infer that spreading stability shrinks the negative impact on growth. Additionally, when fiscal stability is based on expenditure cuts instead of tax increases, growth-related financial stability is less detrimental to growth.

Moreira (2015) analyzed the character of fiscal rule of Brazil using the VEC model from January 2005 to July 2012. Preliminary results, however, indicate a weak fiscal rule, while nominal deficits compete against domestic public debt and variations in inflation, as the discretionary component of fiscal policy is isolated, can highlight its pro-cyclical bias, such policies have led to permanent deterioration in public debt to GDP ratio in Brazil over the years. As a result of increasing debt. In the time of high GDP growth, more flexible fiscal government will cause nominal surpluses.

Stanova (2015) analyzed the association of discretionary fiscal policy with output growth by taking quarterly data from ten Central and Eastern European (CEE) countries from 2000q1 to 2014q1 by using the SVAR approach. He considered the three components of fiscal discretion, the cyclical pattern, its contribution to GDP growth, as well as the association between policy aggression and output volatility. He found that fiscal discretion played a small part in economic growth. Fluctuations in fiscal policy are positive but there are moderate correlations with fluctuations in output. Prior to the 2008-09 crisis, the characteristics of the structural cyclical balance have been a combination of pro-cyclical and counter-cyclical changes. In view of the findings, he suggests that policymakers should rely on automatic stabilizers, instead of discretionary fiscal policy in CEE countries, to protect production spending.

Canale and Liotti (2015) examined the discretionary fiscal policy in Eurozone countries from 2001 to 2013 using intuitive cross-section analysis and Panel Dynamic Ordinary Least Squares (PDOLS). Both techniques produce positive results of discretionary fiscal policy multipliers. The study recommends positive impact of discretionary fiscal policy implications on GDP and infers that modification in the structural public balance has adversely affected the growth regardless of economic conditions. The consequences indicate that if a decline in structural balance is to be considered a goal such a goal should not be pursued as economic conditions deteriorate. Concluding from cross-section analysis that expansionary discretionary fiscal policy actions have positive impact on growth and vice versa.

In a panel of 55 nations, Ali et al. (2018) examined the effect of discretionary public spending on economic development, including both developed and developing countries. The empirical results illustrated that economic growth is severely affected by fluctuations in discretionary public spending in all the countries. In the case of developing countries, fluctuations in discretionary spending have serious allegations for economic growth, although in developed countries, the impact is minimal. In general, developed countries operate under certain fiscal laws and aggressive discretionary policy cannot be used by policymakers. Furthermore, developed nations have the ability to absorb fluctuations in discretionary public spending through an effective domestic stabilization system. In developing economies, on the other hand, discretion is easily used in fiscal policy, with very few barriers, causing instability and uncertainty, which has negative effects for private investment and economic progress. The results recommend that prudent policies be put in place to prevent governments from pursuing a volatile discretionary fiscal policy.

II.I. LITERATURE GAP

The empirical work on discretionary fiscal policy is limited in Pakistan. In this respect Ismail and Husain (2012) have contributed, where discretionary fiscal policy is identified through the fiscal reaction function and then regressed this discretion against output, employment level and inflation variation. Whereas, our study will contribute by analyzing the effect of fiscal discretion on aggregate demand, we will also examine the determinants of fiscal discretion.

III. FORMULATION OF THE MODEL

In this section first, we discuss the fiscal policy rule from where we will derive the fiscal discretion variable and then will discuss the effect of discretionary fiscal policy on aggregate demand on the basis of theoretical and prior empirical findings and also discuss the factors which affect the fiscal discretion. Next, we will describe variables in detail. Moreover, econometric methodology will be discussed theoretically.

III.I. DISCRETIONARY FISCAL POLICY

The term discretionary fiscal policy basically refers to changes in fiscal policy that do not illustrate a reaction to economic conditions. We have consulted the literature on fiscal policy rules in order to identify the exogenous discretionary component of fiscal policy (e.g. Blanchard and Perotti (2002), Alesina et al. (2002), Fatas and Mihov (2003), Ismail and Hussain (2012)) which are as follows:

$$G_t = \alpha_o + \alpha_1 Y_t + \alpha_2 G_{t-1} + \alpha_3 ED_t + \alpha_4 INF_t + \alpha_5 EMP_t + \varepsilon_t \text{------ (A)}$$

G stands for government spending, Y is real GDP, G_{t-1} is lagged government spending, ED is external debt, INF is inflation rate and EMP is employment level in the given time period. Whereas, α_1 represents responsiveness, α_2 shows persistence while ε is residual. The equation's residual term is understood to represent arbitrary adjustments to fiscal policy. A discretionary change, on the other hand, is one that is unrelated to the cyclical variations of the economy. Cyclical component of fiscal policy is given by $\alpha 1$ and the structural component (residual of equation) is interpreted as discretionary fiscal policy. A positive (negative) value of $\alpha 1$ being associated with procyclical (countercyclical) fiscal behaviour. The automatic movements of the government budget because of the business cycle are referred to as the cyclical component of the budget. The other part, the structural component, is called the exogenous component. We have used government expenditure as an indicator of fiscal policy due to its larger and positive multiplier effect moreover expenditures are less affected by the cycle while revenues are perfectly correlated with the cycle.

III.II. EFFECT OF DISCRETIONARY FISCAL POLICY ON AGGREGATE DEMAND

After measuring the fiscal discretion, we will peruse the effect of discretionary fiscal policy on aggregate demand as given below:

$$Y_t = \beta_o + \beta_1 Y_{t-1} + \beta_2 FD_t + \beta_3 FDI_t + \beta_4 POP_t + \beta_5 PI_t + \varepsilon_t^Y \text{ --------- (i)}$$

$$\beta_1 > 0,\ \beta_2 \leq 0,\ \beta_3 > 0,\ \beta_4 >< 0,\ \beta_5 > 0$$

In equation (i), Y is real GDP taken as a dependent variable whereas independent variables are real GDP lag, fiscal discretion (FD), foreign direct investment (FDI), population (POP), private investment (PI) and error term.

According to economic literature, fiscal discretion has no impact at all on the level of output because rational consumers who anticipate higher taxes would entirely offset any rise in current expenditure with savings. On the contrary fiscal discretion can also affect negatively the real GDP as unexpected increases in government spending create uncertainty about future fiscal policy that could hurt private sector confidence and spending. Foreign direct investment, especially in developing countries, is known as a considerable wellspring of financial support, such as job creation, skills and technology transfer, increased productivity, and sustainability in developing countries, therefore, long-term growth boost the economy. The relationship of population and real GDP is controversial. Many analysts consider that in high-income countries the economic growth is probably going to slow comparatively in the coming years as growth in population in these countries is predictable to be incredibly low (Baker et al., 2005). Others assume that growth in population has been and will consistently be a problem because most people certainly use the many limited resources accessible on earth which lessen long-term potential growth (Linden, 2017). Private investment increases employment opportunities in the country, which in turn increases individual income therefore, it improves the quality of life by reducing poverty in the country, hence, improves real GDP.

III.III. DETERMINANTS OF FISCAL DISCRETION

Here we will review the factors which affect the fiscal discretion. These factors are government size (G), income level (Y), institutional quality (IQ), inflation (Inf) and country size (POP) by following Afonso et al. (2008) methodology, which is discussed as below:

$$FD_t = \phi_o + \phi_1 FD_{t-1} + \phi_2 G_t + \phi_3 Y_t + \phi_4 IQ_t + \phi_5 INF_t + \phi_6 POP_t + \varepsilon_t^{FD} \quad \text{-------(ii)}$$

$$\phi_1 > 0,\ \phi_2 < 0,\ \phi_3 < 0,\ \phi_4 < 0,\ \phi_5 > 0,\ \phi_6 < 0$$

Fiscal discretion in equation (ii) depends on its own lag, government size (G), income level (Y), institutional quality (IQ), inflation rate (INF), country size (POP) and error term. Government spending actually expresses government size. Discretionary spending is adversely linked to government size, as larger governments usually have more stable government spending and higher automatic stabilizers[6]. Real GDP is used to realize a country's level of development of a country. It relates with discretionary spending inversely, poorer countries will experience more variations in the business cycle as a result of less developed financial sectors, simultaneously depending more on discretionary fiscal policy[7]. We measure institutional quality through government effectiveness. Government effectiveness is adversely related to discretionary spending as more checks and balances on the government reduce discretion. This is consistent with Persson and Tabellini (2001) and Fatas & Mihov (2003). Furthermore, in the presence of low-quality institutions, governments cannot cope with the pressure to spend more during the boom[8]. Inflation is positively associated to fluctuations in discretionary spending, as high inflation is equivalent to high price fluctuations affecting associated costs. Population is generally taken as the size of the country because smaller countries have more discretion[9].

III.IV. DESCRIPTION OF VARIABLES

Table 1 presents the descriptions of the variables. Annual time series data of all variables from 1984 to 2020 is collected from State Bank of Pakistan (SBP), Pakistan Economic Survey (PES), World Development Indicators (WDI) and International Country Risk Guide (ICRG). Real GDP is taken in million rupees, whereas, employment level and population are in number of persons in million. Government expenditures, private investment and external debt are taken as a percentage of GDP. Inflation is in percentage per annum. Institutional quality (IQ) is taken as index ranging from zero to five (0-6). Remaining variables are in percentage of GDP.

III.V. METHODOLOGY

In this section we will discuss the econometric methodology that we will apply to peruse the impact of fiscal discretion on aggregate demand. In this regard, all the equations mentioned in the previous section will be analyzed

[6]Fatas & Mihov (2001)
[7]Rand & Tarp (2002)
[8]Garayeva & Tahirova (2016)
[9]Afonso et al. (2008)

by estimating the General Method of Moments (GMM) estimation to examine and discuss comprehensively the empirical results of the study.

Table 1: Description of Variables

Variable	Symbol	Description	Unit	Source
Government Spending	G	All the current and capital expenditures of the central government.	% of GDP	WDI
Gross Domestic Product	Y	Sum of gross value included by all residents in addition to any product taxes and less any subsidies excluded from the value of the product.	Million Rupees	SBP
Inflation	INF	Annual percentage change in consumer price index (CPI)	Index 2010=100	WDI
Employment	EMP	People ages 15 and older who supply labor for the production of goods and services.	Number of persons	PES
Fiscal Discretion	FD	Temporary changes in fiscal policy.		Own calculation
Population	POP	Total number of residents regardless of legal status or citizenship	Number of persons	PES
Private Investment	PI	Gross fixed capital formation, entails expenditures on additions to the fixed assets of the economy by the private sector.	% of GDP	WDI
Foreign Direct Investment	FDI	Net FDI inflows.	% of GDP	WDI
External Debt	ED	Debt that has a maturity of more than one year and that is payable to nonresidents by residents of a country.	% of GDP	WDI
Institutional Quality	IQ	Govt. Effectiveness	Index (0-6) Weak to strong.	ICRG

Note: WDI: World Development Indicators, SBP: State Bank of Pakistan, PES: Pakistan Economic Survey, IFS: International Financial Statistics, ICRG: International Country Risk Guide.

III.V.I. UNIT ROOT TEST

The preliminary step is to execute the unit root test which is executed to attain the order of integration. In this study, the Augmented Dickey Filler (ADF) test is performed to test the unit root, which was originated by two American statisticians David Dickey and Wayne Fuller (1984) to analyze the unit root in time series data. Two models of regression; intercept and trend & intercept are used to test the unit root. The study will execute the following two types of ADF regression:

$$\Delta X_t = \alpha_o + \beta X_{t-1} + \sum_{j=1}^{p} \gamma_j \Delta x_{t-1} + \varepsilon_t \quad \text{(with an intercept) -------} \quad (1)$$

$$\Delta X_t = \alpha_o + \alpha_1 T + \beta X_{t-1} + \sum_{j=1}^{p} \gamma_j \Delta x_{t-1} + \varepsilon_t \quad \text{(with a time trend \& intercept) ---- (2)}$$

Where, ΔX is the first difference of X series, α_o is an intercept (constant), α_1 is the coefficient of time trend T, β and γ are the parameters, p is the number of lagged first differenced term and ε is the stochastic error term.

The hypothesis mentioned below is used to test the variable's stationarity:

Null Hypothesis H_0: *$\beta=0$; (X_t has a unit root or Non-Stationary)*

Alternative Hypothesis H_1: *$\beta<0$; (X_t has not a unit root or Stationary)*

We reject the null hypothesis in condition when a variable has a unit root. If the test statistic is smaller than the critical value, it entails that the variable is stationary.

III.V.II. GENERALIZED METHOD OF MOMENTS (GMM)

In econometrics, the Generalized Method of Moments (GMM) is a technique for measuring parameters. In general, this applies to semi-parametric models, where the corresponding parameter is a finite dimension, while the full state of the data distribution function cannot be known, and thus the maximum probability estimate does not apply. The technique requires that specific conditions of the moment be indicated for the model. These moments are conditional model parameters and data elements, as they have zero expectations on the true values of the parameters. GMM

estimation is considered to be a consistent, asymptotically normal, and efficient in all estimation classes that do not use any additional information contained in the moment situation. The GMM technique was introduced by Lars Peter Hansen in 1982to generalize the method of moments introduced in 1894 by Karl Pearson.

All regression variables that are not associated with the residuals can be instrumental factors. The important thing about this speedy estimate is that it does not require detailed information of the residual's distribution. It should be noted that when there are variance distinctions, the GMM technique should be used because GMM has nothing to do with regression assumptions, including normality. The basic premise of this method is that the disturbing factors in the conditions don't connect with the arrangement of instrumental variables. By selecting the right instrumental factors, this method of estimation can apply the weight matrix to make appropriate estimates for dissimilar variations. Due to events such as revolutions, wars, and the progress of various financial schemes, due to structural failures in the normal process of variables, a variable trend is therefore expected. GMM seems to be the most practical estimator in the current situation.

IV. RESULTS AND DISCUSSION

In this section, we will find descriptive statistics that provide a general understanding of the empirical features of the data included in the study. In addition, a pair-wise analysis of variables used to test the correlation between independent variables will be discussed. In the next section, the model mentioned in the previous chapter will be evaluated by the Generalized Method of Moments (GMM).The descriptive statistics of all the variables including the mean, minimum and maximum values, standard deviation and Jarque-Bera are summarized below in the table. We can see that the standard deviation of the exchange rate is higher than other variables, which indicates that the exchange rate is more volatile in comparison to other variables. Jarque-Bera's statistics and P-values are used to test the null hypothesis for normal distribution (H_o: Normal distribution). Since all P-values are greater than 0.05, which demonstrates that the null hypothesis is accepted for all variables and they are normally distributed.

Table 2: Descriptive Statistics

Variables	Mean	Median	Max	Mini	St. Dev.	Jarque-Bera	Prob.
FD	-0.01	0.01	1.81	-1.44	0.81	1.46	0.48
FDI	0.96	0.68	3.67	0.1	0.83	3.25	0.12
G	11.29	11.13	16.78	7.781	2.104	1.837	0.399
PI	9.75	9.8	13.5	7.19	1.66	1.36	0.51
INF	7.96	7.65	20.3	2.53	3.89	6.8	0.08
IQ	0.22	0.22	0.52	0	0.18	2.39	0.3
POP	4.91	4.92	5.34	4.46	0.25	2.04	0.36
Y	11.84	11.81	12.33	11.23	0.37	2.32	0.31

Pair-wise correlation is used to check the correlation between independent variables, as reported in the table below. The results show that all variables have value less than 0.8 as correlation coefficients. As a rule of thumb the results of correlation matrix conclude that there is no problem of multicollinearity in our model.

Table 3: Pair-wise Correlation

	FD	POP	PI	INF	FDI	G	Y	IQ
FD	1							
POP	-0.10	1						
PI	-0.10	0.69	1					
INF	0.01	0.08	0.25	1				
FDI	0.03	0.41	0.58	0.41	1			
G	0.26	-0.53	-0.56	0.14	-0.31	1		
Y	0.09	-0.36	-0.51	-0.06	-0.22	0.52	1	
IQ	0.02	0.13	-0.01	0.38	0.07	0.53	-0.11	1

We test the stationarity of the variables by applying the unit root test which is used to determine the order of integration. The most commonly used test is the Augmented Dickey-Fuller (1979) test. The results of the ADF test are illustrated in the table below:

Table 4: Results of Unit Root Test

Variables	Level		1st Difference		Order of Integration
	Intercept	Trend & Intercept	Intercept	Trend & Intercept	
FD	5.8636*(2.9458)	5.8214*(3.5366)	5.2862*(2.9458)	5.2122*(3.5403)	I(0)
FDI	2.7931(2.9458)	3.0404(3.5403)	4.0520*(2.9458)	4.0003*(3.5403)	I(1)
G	1.4214(2.9434)	1.7823(3.5366)	4.8631*(2.9458)	4.8047*(3.5403)	I(1)
PI	2.1440(2.9434)	2.0543(3.5366)	7.1205*(2.9458)	7.0984*(3.5403)	I(1)
INF	2.7177(2.9434)	2.6789(3.5366)	7.3234*(2.9458)	7.2148*(3.5403)	I(1)
IQ	1.5341(2.9434)	1.5829(3.5366)	6.2331*(2.9458)	6.1459*(3.5403)	I(1)
POP	1.2285(2.9434)	2.6080(3.5366)	3.5037*(2.9458)	3.2786(3.5403)	I(1)
Y	0.3860(2.9458)	3.2778(3.5403)	3.0678*(2.9458)	3.0615(3.5403)	I(1)

Note: *MacKinnon (1996) one-sided p-values.

In the table above, the results are reported based on ADF test statistics. The null hypothesis is stated that the series is non-stationary, or else has a unit root, and rejection and acceptance of the null hypothesis is based on the MacKinnon (1996) critical values. It is clearly evident that the null hypothesis; variable has a unit root, cannot be ruled out at the level in all variables because the test statistics are less than the critical values, except fiscal discretion where the value is stationary at level. After explaining the variables and their characteristics in detail, in this section we will estimate empirically and discuss thoroughly the impact of fiscal discretion on real GDP as well as we will estimate the determinants of fiscal discretion by utilizing Generalized Method of Moments (GMM) estimation. Real GDP (Y) depends on lagged real GDP, fiscal discretion (FD), foreign direct investment (FDI), population (POP) and private investment (PI). The result of GMM Two-Stage Least Square estimation of the above equation is given below in table:

Table 05: Dependent Variable: Y

Instruments: Y(-2) FDI(-1) POP(-1) PI(-1) FDI(-2) POP(-2) PI(-2) TO (-1)

Variable	Coefficient	Std. Error	t-Statistic
C	6.170292	3.780333	1.632209
Y(-1)	0.698915	0.193128	3.618931*
FD	-0.042319	0.033958	-1.246215
FDI	0.077535	0.032734	2.368621**
POP	-0.648307	0.366310	-1.769833***
PI	0.064410	0.036475	1.765875***
R-squared	0.977081	Mean dependent var	11.83598
Adjusted R-squared	0.973261	S.D. dependent var	0.368761
S.E. of regression	0.060300	Sum squared resid	0.109083
Instrument rank	8	Prob(J-statistic)	0.179727

Note: * shows significance at 1%, ** at 5% while *** at 10% level of significance.

Results show that population has a negative impact on real GDP, while other variables; lagged real GDP, foreign direct investment and private investment have a positive effect on real GDP. Fiscal discretion is insignificant. The results show that if fiscal discretion increases by 1% it has no effect on real GDP. Rational economic agents tend to expect their income to fall in the future for any spending increase or tax cut. These agents will thus rationally respond by saving a larger portion of their income in expectation of a future tax hike. Due to the low marginal propensity of temporary income to be consumed, the fiscal multiplier would have a significantly less effect on overall demand. The Ricardian Equivalence will hold. In this scenario, fiscal policy has no impact on output levels at all since rational consumers who anticipate higher taxes would entirely offset any increase in current spending with savings. Our findings are consistent with Tagkalakis (2013) and Ismail & Husain (2012). As the coefficient of lagged real GDP is 0.698915 which shows that the lagged real GDP is positively correlated with the current real GDP which is evidence of persistence in real GDP. The association between foreign direct investment and real GDP is positive. When foreign direct investment increases by 1%, real GDP grows by 0.077535%. In developing countries like Pakistan foreign direct investment in developing countries is known as an important source of finance because it creates jobs, transfers skills and technology, raises productivity, and sustains long-term growth in developing countries, because of this, it strengthens the economy. Louzi & Abadi (2011), Aurangzeb & Haq (2012) and Zeb et al. (2014) also concluded the same result that foreign direct investment has a positive effect on growth. If the population grows by 1%, real GDP decreases by 0.648307%. The Ahmed & Ahmad (2016) study presented the

same conclusion explaining that population adversely affects growth as limited resources are distributed because of overpopulation. Linden (2017) concludes, however, that population growth is and will keep on being a problem because most people certainly utilize the limited resources accessible on earth, consequently long-term potential growth reduces. Our search matched the results of Banerjee (2012) and Wanjun et al. (2013).

When private investment increases by 1%, real GDP upsurges by 0.064410%. Private investment increases employment in the country, which in turn increases individual income, it improves the living standard by reducing poverty in the country, therefore, improves real GDP. Hence, it shows that the key outcomes coincide with the Harrod-Domer model, which stated that the development pace of national income is directly associated with the savings ratio as well as capital formation as an economy is capable to more savings and investment then this GDP will grow to the maximum. The positive link between private investment and real GDP was also found by Dritsakis et al. (2006), Bint-E-Ajaz & Ellahi (2012) and Shuaib & Ndidi (2015).

Fiscal discretion (FD) depends on lagged fiscal discretion, government expenditure (G), income level (Y), institutional quality(IQ), inflation rate (INF) and population (POP). The results of GMM Two-Stage Least Square estimation of the above equation are demonstrated in the following table:

Table 06: Dependent Variable: FD

Instruments: G(-1) G(-2) Y(-1) Y(-2) INF(-1) IQ(-1) POP(-1) POP(-2) INF(-2)

Variable	Coefficient	Std. Error	t-Statistic
C	15.26231	5.651006	2.700813
FD(-1)	0.239205	0.695886	0.343742
G	-0.048341	0.025766	-1.876754***
Y	-0.693848	0.269044	-2.578942**
IQ	-1.135960	0.440343	-2.579718**
INF	0.048615	0.009943	4.889174*
POP	-1.295335	0.498808	-2.596859**
R-squared	0.955221	Mean dependent var	0.018133
Adjusted R-squared	0.945957	S.D. dependent var	0.818545
S.E. of regression	0.190289	Sum squared resid	1.050087
Instrument rank	9	Prob(J-statistic)	0.339117

Note: * shows significance at 1%, ** at 5% while *** at 10% level of significance.

The above table shows that lagged fiscal discretion and inflation rate positively affect the fiscal discretion but other variables; government expenditure, income level, institutional quality and population have negative impact on fiscal discretion. All variables are significant except lagged fiscal discretion. The coefficient of lagged fiscal discretion i.e. 0.239205 is positive but insignificant shows that the current fiscal discretion is not affected by the previous year fiscal discretion. The coefficient of government expenditure shows that if government spending (govt. size) increases by 1%, fiscal discretion decreases by 0.048341%. Due to instability in the economy such as law and order situation and lack of financial resources, etc., small governments like Pakistan do not have stable government spending and automatic stabilizers are smaller therefore fiscal discretion increases. Our findings are similar with the conclusion of Fatas & Mihov (2001) and Afonso et al. (2008). When real GDP increases by 1%, fiscal discretion decreases by 0.693848%. Real GDP represents the level of development of the country or income level. Poor countries like Pakistan, due to less developed financial markets, have more volatile business cycle, and simultaneously most of the discretionary fiscal policy can be relied upon. Rand and Tarp (2002) and Afonso et al. (2008) have drawn the same conclusions as in our results.

The coefficient of institutional quality shows that as it increases by 1%, fiscal discretion decreases by 1.135960%. As more checks and balances on the government reduces fiscal discretion. Moreover, in the presence of low-quality institutions, governments cannot cope with the pressures of high spending during the boom. This is according to the previous findings of Persson & Tabellini (2001), Fatas & Mihov (2003) and Garayeva & Tahirova (2016). As the inflation coefficient makes it clear that if inflation rises by 1%, fiscal discretion also increases by 0.048615% because higher inflation is related to higher price fluctuations, which ultimately affects discretionary spending. Our conclusion is matched with the result of Afonso et.al (2008) and Ismail & Husain (2012). As population increases by 1% then fiscal discretion decreases by 1.295335%. The population represents the country size. Furceri & Ribeiro (2008) explained the negative association of the government spending volatility with the size of the country. As

small economies, which are characterized by more volatility and higher government spending, due to idiosyncratic shocks, can use fiscal discretion more aggressively. Afo nso et al. (2008) have derived the same results.

V. CONCLUSION AND POLICY IMPLICATIONS

Since independence, the Pakistan economy has faced financial imbalances that have widened the gap between spending and taxes and even increased debt. Despite governance issues and persistently worse economic variables; growth, inflation, employment and negative net exports, every government tries to stop these economic woes. Policymakers formulated policies but did little to support the economy. This deliberate fiscal management to control economic and social affairs expanded the significance of fiscal discretion in the world as well as in Pakistan. Our aim is to analyze the impact of fiscal discretion on aggregate demand additionally we determine the factors that affect fiscal discretion for Pakistan from 1984 to 2018. For empirical analysis, we have used the General Method of Moments (GMM). As for as our first objective is concerned we know that the fiscal discretion is an unobserved variable, we have used the fiscal policy rule to measure exogenous discretionary component by using government spending. Regarding our second objective we have examined the effect of fiscal discretion on aggregate demand. The empirical results show that fiscal discretion has no effect on real GDP. Population is inversely related to real GDP, on the other hand, lagged real GDP, foreign direct investment and private investment have a positive impact on real GDP. Moreover, real GDP shows persistence behavior. Since any rise in expenditure today would entirely convert into an equal amount of savings by consumers who are logical and foresee tax increases, fiscal discretion has no impact at all on the level of output. Foreign direct investment acts as liquidity in the economy, which in turn creates more employment opportunities. Due to lack of resources, population growth is inversely related to economic growth. Private investment increases employment levels, reduces poverty, therefore, improves real GDP. Regarding our third objective, we find determinants of fiscal discretion. Empirical results show that government size, income level, institutional quality and country size are negatively associated with fiscal discretion, while inflation is positively associated with fiscal discretion. Small governments like Pakistan do not have stable government spending and automatic stabilizers are smaller therefore fiscal discretion increase. Being a poor country, Pakistan uses discretionary fiscal policy more frequently due to its more volatile business cycle. High efficacy of institutions and more checks and balances on the government reduce discretion. High inflation is related to high price fluctuations, which ultimately affect discretionary spending. Smaller economies use government spending more aggressively.

It is advised as a course of action that cautious measures be put in place to prevent governments from using erratic discretionary fiscal policy. For instance, one such restraint could be the adoption of sensible expenditure limits for the government, as doing so would limit its capacity to pursue assertive discretionary policy. These results suggest a focus on making sustainability or automatic stabilizers more effective, and the government should use discretionary policy carefully, as well as incorporate better fiscal balance measures into the discretionary policy process. The quality of institutions is a significant determinant of the pace of economic growth. The best approach to improve is to implement effective policies to make existing institutions more efficient, such as putting barriers on policy makers to control such kind of discretion. High level of inflation is related to high price fluctuations, which ultimately affect discretionary spending. The government should manage inflation to improve private consumption and alleviate poverty of the household, so the price level needs to be stabilized. In our study, we have taken government spending as a measure of discretionary variable, however, we can segregate government spending into sub-components namely feasible discretionary government consumption, government investment and government current transfers, which may be more useful and constructive in the budgetary-formation.

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