

Public Financial Management and Growth Interaction: Evidence from the Two-Stage Least Square Approach

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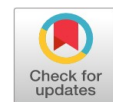
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Abstract: Financial Management in the Public sector is an essential part of the country's development process. Public Sector Financial Management (PFM) encompasses the collection and utilization of revenue. Financial Management Reforms are developments and change over time in finance. In this context, the objective of this study is to explore the impact of PFM on output growth in the case of Pakistan. This study also investigates the effect of public sector financial reforms (implemented in the 1990s) on GDP, the proxy of output growth. Tax reforms included in this study to show a structurally different tax pre and post. The time-series data covering the period from 1977 to 2018 has been taken in this study. Econometrics methodology includes Unit root test, Causality test, and Two-Stage Least squares (2SLS). The 2SLS approach is implemented due to endogeneity. There is an existence of reverse causation between the variables, which shows that the change in domestic and external debt shows bilateral causality with output growth. The results of 2SLS show that PFM has a promising impact on output growth. In this regard, domestic debt positively and external debt is negatively associated with output. The government spending on social services, community services, economic services, and reforms positively impacted the economy. On the other hand, government expenditure on administration, defense, and transfer of payment results in decreasing output. Therefore, the study concludes that the behavioral trend, the social context, and time limits set for the achievement of set goals must be considered by effective public sector financial management in Pakistan. This paper will help policymakers allocate the limited resources and help in strategic priorities to spur reallocation from lesser to higher priorities to ensure allocation efficiency.

Keywords: Output growth, Public sector financial management, Reforms, Causality, 2SLS

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INTRODUCTION

Public Sector Financial Management (PFM) is concerned with efficient government accumulation and allocation of funds. It is a mechanism for generating and managing public financial resources for efficient and effective public service delivery. All government financial operations are underlined by PFM. This includes revenue mobilization; the distribution of these funds to various activities; expenditure; and the accountability of the funds that have been spent. It involves planning and budgeting, accounting and reporting, internal controls, audit, and external oversight. The flows of the financial resources depend upon the government's structures, processes, and administration. The management of the inflows and outflows of government treasury funds is closely associated with economic performance. Economic growth increases as public funds and investments are better used and managed (Alenoghena, Aigbiremolen, Abejegah, & Eboreime, 2014; Gamayuni, 2020).

Government financial management is an important topic to understand. It has a strong historical background. PFM means the process of the transition from a natural state to an open-access society (Allen, 2009). The structure of different functions, rules, and regulations that regulate public resource management needs to be recognized. Ultimately, these functions are intended to affect growth (Simson, Sharma, & Aziz, 2011). Developing countries have lower-quality institutions that suggest that PFM that works well in developed countries is not generally acceptable for developing countries. In addition, administrative capacity deficits are also related to low fiscal capacity, resulting in poor financial management in developing countries (Pirttilä & Tarp, 2019). Basic budgeting

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skills like cost allocation, forecasting, constraint operation, and Microsoft Excel use is important for PFM (Thom, 2019).

The main objective of the Financial Management of the Public Sector is that all public resources must be used as effectively as possible. Less wasting of public funds at the level of government should be needed. Efficient PFM systems maximize financial performance. In other words, it is a mechanism that promotes good governance that is used to promote the availability of benefits to the greatest number of citizens. With an increase in populations, resources become scarcer so, the importance of PFM rises. It is helpful in poverty reduction and useful to achieve sustainable economic growth. A major cause of the financial crisis has been the lack of effective fiscal institutions and mismanagement of public financial developments in any economy. Fiscal policy has emerged more explicitly as a key instrument of PFM to eradicate the financial crisis (Kaplanoglou, 2019; Ozyürek, 2016). The problem of financial management in the public sector has gained a lot more attention in the last few decades. Several developing countries have implemented a policy to strengthen budgeting, accounting, and financial data or treasury. 50 different donors are providing PFM support worldwide (Allen, 2009). In improving PFM and governance, both developed and developing countries achieved impressive achievements. With the rising complexity of PFM and the pace of change, every government continues to struggle. The public financial structure is more complex by political instability, staff shortages, recruitment and retention, a weak performance appraisal, and ineffective leadership. It is difficult for emerging economies (Adhikari, Kuruppu, Ouda, Grossi, & Ambalangodage, 2021). In Pakistan, PFM has gained attention. In this respect, it has achieved some key milestones. The development of a standardized and advanced financial reporting system with the help of the World Bank is the most important achievement. With the cooperation of Governance Global Practice, the Institute of Chartered Accountants of Pakistan is supporting public finance managers. These acts enable the government to strengthen Pakistan's financial reporting and auditing framework.

Infective systems of PFM need to be modified by introducing certain changes. International assistance may contribute funds, and in terms of ideas and technological knowledge, donors can support. International organizations, such as the IMF and the World Bank, etc., should build reform-support strategies. However, the reform itself is the government's policy for strengthening its financial management. In this respect, government costs and waste should be minimized, and credible macro-economic policies should be enforced. Government must empower key agencies such as Auditor General, Legislative committees, etc. With enough operational, legal, and independent authority. Reforms also suggest accountability and openness of governance in PFM in general. It will help to maximize the efficient use of limited public resources (Ain, Yousaf, Jie, & Akhtar, 2020).

The Government of Pakistan has developed a plan to strengthen its PFM by some reforms. In the context of regional planning and budgeting, the government takes effective action, reporting, budget implementation, accountability and openness, budget management and resource mobilization, etc. In the 1990s, the Government of Pakistan introduced a new chart of Accounts to modernize its accounting and auditing processes. This latest system is a computerized system for accounting. An independent audit role is developed, and professional capability is strengthened. The public reforms were operationalized under this new economic policy. This strategy of new reforms was based on the World Bank's (WB) experience of developing countries. Under this program, actions were taken to train public servants, improve their salaries, and enhance the use of Information Technology (IT) (Iqbal, 2014).

Hussain (2004) the former Governor of the State Bank of Pakistan, has suggested and highlighted the audit role in the PFM cycle. He called for a Supreme Audit Institution to be created. Public accountability and fiscal efficiency of government activities are carried out primarily by the Department of the Auditor General. Ali (2020) stated that Pakistan's financial management is still considered cumbersome, corrupt, and inefficient. Despite a long history of reforms, the situation in Pakistan has remained unchanged for its citizens and the international development community.

An enormous number of studies have examined the impact of public debt on the economic growth rate. Different analyses investigate those changes in public expenditure bring positive or negative changes in economic growth. A lot of studies examine the impact of public revenue on economic growth. However, we have found little empirical work regarding the connection between PFM and economic growth. Therefore, it is needed to explore the relationship between PFM and economic growth, especially in the case of Pakistan.

This paper investigates the relationship between PFM and GDP, which is a proxy for economic growth. It

is an attempt to analyze the magnitude of the connection between the financial management of the public sector and output growth. In addition, the effect of various public sector financial reforms on growth is also being investigated. Without a strong public sector, life in the world would be less just, less free, more unequal, and more insecure. It is the responsibility of the government to protect the individual rights of its citizens. These functions of the state enhance economic growth. But the government needs funds to run the administrative units. The government must raise the financial resources to meet the expenditures. Thus, effective management of public finance is fundamental. Resources become scarce when the population increases and economics grow more complex. Moreover, transparency and accountability are also important. The International Public Sector Accounting Standards (IPSAS) are one of the most widely used tools used by governments worldwide to ensure more transparency and accountability (Atuilik & Salia, 2019; Ulfah, Afala, & Rahman, 2020). It is imperative to highlight the relationship between New Public Management (NPM) reforms and Human Resource Management (HRM) (Mahmoud & Othman, 2021; Prato & Jatmiko, 2020; Suwanda & Suryana, 2020; Tetteh, Agyenim-Boateng, Simpson, & Susuawu, 2021). In this regard, PFM has a vital role.

LITERATURE REVIEW

When the societies tried to organize them, the idea of government came to light. From 1940 to 1979, the government's role was entrepreneurial. Classic economists, such as W. Arthur Lewis, Rosenstein Rodan, David Ricardo, Thomas Malthus, Nurse, Singer, Prebish, Hirshman, and Leibenstein, noted that economic development is a growth process that requires factors of production to be used efficiently. Pretorius and Pretorius (2009) noted that during the 1970s and 1980s, OECD countries and some developing countries started to analyze their public sector management. This led to the implementation the New Public Management (NPM) growth model. Public finance is not only about public revenue and public expenditure; it is also about budgeting and auditing. (Holmes, 1998) mentioned that another method was characterized by the World Bank's Public Expenditure Management (PEM). This approach highlighted the need to adopt a due process approach. In economic and financial management, Tanzi (2000) claimed that good governance is an integral component. Premchand (1999) states that there is a connection between PFM and the community's aspirations with resources. Odior and OsiAlenoghena (2014) have pointed out a significant relationship between government financial management and output growth in the case of Nigeria. The authors conclude that managing the inflows and outflows of financial funds from the government treasury has a strong connotation with economic prosperity. They show positive elasticity concerning economic performance and appropriate management of financial resources. Simson et al. (2011) provided a guide for policymakers seeking to deepen their understanding of PFM, especially in the case of less developed countries. It enables the governments of the underdeveloped countries to utilize scarce financial resources in a better possible way.

Ding, McQuoid, and Karayalcin (2019) explain the Tax Sharing System (TSS) across regions and overtime for econometric identification purposes and find robust causal evidence that the Tax Sharing System had a positive impact on economic outcomes. The economic and political consequences of this new Tax Sharing System (TSS) have been discussed widely in the literature, especially because of the renewed interest in fiscal federalism and its interaction with political institutions and economic outcomes. Yilmaz and Zahir (2020) stated that public debt rises because of tax protests and growing welfare costs. These factors cause state finance to be under considerable pressure. Different countries opted for different financial management solutions that reflected their political and economic structures to overcome this problem.

In the early 1990s, Pakistan's government pursued its economic deregulation agenda; the government realized that changes in the public sector the financial management were needed to improve economic growth (Adhikari et al., 2021). Rahman, Khan, and Charfeddine (2021) argue the researcher and politician treated the financial dimension of economic development as an afterthought problem because it is considered as a more sophisticated matter as compared to simple economies. Akram (2011) presented his paper to examine the consequences of the impact of public debt on the economic growth of Pakistan for the period 1972-2009. He applies the Autoregressive Distributed Lag (ARDL) method for estimation. This paper finds a negative relationship between external debt and per capita GDP. The foreign public debt of Pakistan has an inverse and significant association with per capita in the short and long run. Ahmad, Sheikh, and Tariq (2012) explore the effect of domestic debt on economic growth in Pakistan. Research reveals a positive relationship between economic growth and the domestic debt of Pakistan from 1972 to 2009. Resources generated from domestic borrowing were used in those projects that contributed to

economic growth.

Miraj and Wang (2019) highlighted those reforms in government management systems are becoming increasingly important in examining actions and efforts done to improve demands for greater openness and accountability in public finance management. Shaikh and Ali (2020) explored that when developing countries face disasters like COVID 19, the weak budget base and lack of elasticity of budget spending create catastrophic situations, and lack of funds is the biggest problem in such a crisis. Rahim, Allen, Barroy, Gores, and Kutzin1 (2020) analyses how COVID-19 funds to make them efficient, transparent, and accountable. Many countries have also created special COVID 19 additional budgets to mobilize more resources and accelerate spending in emergencies.

METHODOLOGY

In terms of the influence of government size on economic growth, there are several models and theories. Theories like Rostow and Rostow (1990) Stages of Economic Growth and the theory of Musgrave (1973) emphasized the importance of scarce resources being used efficiently. These theories indicate that economic development results from scarce public resources being handled prudently. However, for fostering economic growth, the endogenous theory gives a theoretical basis to the government. Better knowledge of the dynamic relationship between government expenditure and GDP is relevant for policy in two major respects (Arpaia, 2007).

The endogenous growth theory emphasizes that economic growth is influenced by endogenous factors or forces. Government policies, access to capital and human resources, and an internal mechanism impact economic growth. The theory of endogenous growth, popularized in the 1980s, holds that investment in the human capital sector and innovation positively impact the country's economic growth. The economic advantages of industrialized countries compared to developing countries are explained in this theory. To describe economic development, technological innovations are regarded as an important factor. In the endogenous growth model, an internal factor of the economy is responsible for affecting economic growth. This theory is based on the concept that the source of growth of the independent variables in the growth model is tracked down, focusing on knowledge. There is a general perception that fiscal policies cannot change the long-run growth of output in a neoclassical growth model. The introduction of endogenous growth models that incorporate the government sector has led to the opposite conclusion that fiscal policies can affect the long-run growth rate of an economy (Barro & Sala-i Martin, 1992).

To specify capital accumulation, human capital is added in the model to represent time, energy, and money devoted to acquiring knowledge by individuals. Obtaining knowledge requires effort and is therefore considered an investment. Investment in human capital leads to more productive labor, generating higher wages. Therefore, an extra independent variable (H: human capital) is taken in the economy's production function = AF (K, L, H). Public infrastructure is a factor directly contributing to economic productivity. Therefore, the economic production function is extended by including KG: $Y = AF (K, H, KG)$. It may also imply that government may influence economic growth positively and negatively by investment in human capital.

DATA, EMPIRICAL MODEL, AND ECONOMETRIC STRATEGY

The time-series data covered the period from 1977 to 2018 used in this analysis. The data has been collected from the various issues of the Pakistan Economic Survey, various issues of Pakistan Statistical yearly books, and World Development Indicators. PFM is associated with all aspects of resource mobilization and expenditure management at the aggregate level. Based on theoretical postulates and following Odior and OsiAlenoghena (2014), the relationship between growth and public sector financial development can be specified as:

$$G_t = \alpha + \beta_1 DOEBT_t + \beta_2 EXEBT_t + \beta_3 D^* GOREV_t + \beta_4 GTEAD_t + \beta_5 GTEES_t + \beta_6 GTESC_t + \beta_7 GTTRA_t + \beta_8 FD_t + \beta_9 Opnesness_t + \beta_{10} DRM_t + \beta_{11} DRF_t + \mu_t$$

In this model, G_t is GDP, which is a proxy of output growth, DOEBT is domestic debt, and EXEBT is external debt. GOVREV represents public revenue which comprises both tax revenue and non-tax revenue. Tax reforms with a dummy and the tax variable show a pre-and post-tax structural difference. GTEAD is government expenditure on defense, general administration, and internal securities. GTEAD is government protection, general administration, and internal security spending. GTEES shows public expenditures on economic services. GTESC is government spending on social community services. GTTRA consists of government expenses on the transfer of payments. FD is financial development, and openness is trade openness; both are control variables. In this model, DRM_t and DRF_t are dummy variables. DRM_t is equal to 1 if there is a democratic government and 0

otherwise (military government = 0 and democratic government = 1). DRM_t show reform in the public sector and subscript "t" represents the time. This equation shows that economic growth is influenced by various factors like domestic debt, external debt, government revenue, Government total expenditure on administration, social community services, financial services, etc. Appropriate borrowing amounts can enhance economic growth from foreign and internal sources. On the contrary, enormous borrowing will slow down growth because it burdens society to pay interest against such a loan. Along with reforms, collected revenue is used to meet expenses such that it promotes economic development and has a positive coefficient. Various government expenditures, such as government spending on human development (education and health and public services, etc.), positively affect GDP growth. Government expenditure on the allocation of payments, such as grants and subsidies, etc., harms economic growth. In this regard, the policy of government spending should not aim to protect a party's interests.

To capture the impact of public sector financial variables on economic growth (measured by GDP growth rate), it is essential to choose an appropriate functional form and econometric model. The estimation technique used in this paper is based on three steps procedure. The first step consists of the unit root test, which involves the determination of the order of integration. The second step is to run the predictive causality test to choose the instrumental variable. The third step is to estimate the model using the (2SLS) method.

ANALYSIS OF EMPIRICAL RESULTS

The result of Table 1 shows that the entire series is not stationary at levels but stationary at first difference. In the empirical analysis, the existence of non-stationarity in time series data is considered a problem. This leads to the results of spurious regression, meaning that further inference is meaningless (Newbold & Granger, 1974).

Table 1: Results of unit root test

Name of Variables	Level	1st Difference	Level of Integration
t Statistic (P-Value)	t Statistic (P-Value)		
GDP	0.3749(0.9984)	-6.1807**(0.0000)	I(1)
External debt	0.1212(0.9649)	-4.6842**(0.0032)	I (1)
Domestic debt	-1.295211(0.8740)	-5.2153**(0.0010)	I (1)
Revenue	0.858307(0.9997)	-6.9966**(0.0000)	I (1)
GTEAD	0.232317(0.9974)	-6.624569**(0.0000)	I (1)
GTEES	-2.892785(0.1760)	-8.388886**(0.0000)	I (1)
GTESC	1.871491(0.9998)	-6.061239**(0.0001)	I (1)
GTTRA	0.4792(0.9988)	-4.7126**(0.0030)	I(1)
CGOV	-1.873509(0.6484)	-5.884456(0.0001)	I(1)
Public reforms	-1.641954(0.7570)	-6.048738(0.0001)	I(1)
Financial development	-1.458565(0.8615)	-5.57818(0.0003)	I(1)
Trade openness	-3.4217(0.0638)	-7.607929(0.0000)	I(1)

Author's estimations

The predictive causality test assesses whether an endogenous variable can be treated as exogenous. This enables the selection of a set of variables to be included on the instrumental variable (IV) list. Policymakers need to know the variables' causal relationship before analyzing the effects of the various actions. This study analyzes whether domestic and external debt causes output growth or output growth causes debt. The estimated results of the F-causality test in Table 2 show that domestic debt affects output growth and output cause domestic debt. Reverse causation also exists between external debt and growth in output. Public expenditures, revenue, financial reforms, and control variables do not show reverse causality with output growth.

Table 2: Results of Causality Test

Null Hypothesis	No of Lag	F-Statistic	Prob	Decision
GDP does not Granger Cause DOMESTIC	2	4.09437	0.0261	Reject
DOMESTIC does not Granger Cause GDP		1.75750	0.01887	Reject
GDP does not Granger Cause External	2	21.8289	0.0000	Reject
External does not Granger Cause GDP		3.38581	0.0464	Reject
GTEAD does not Granger Cause GDP	2	2.33664	0.0464	Reject
GDP does not Granger Cause GTEAD		1.82664	0.1129	Reject
GTEES does not Granger Cause GDP	2	0.05666	0.1773	Accept
GDP does not Granger Cause GTEES		5.25616	0.9450	Accept
GTESC does not Granger Cause GDP		0.97384	0.3885	Accept
GDP does not Granger Cause GTESC	2	1.47432	0.2441	Accept
GTTRA does not Granger Cause GDP		0.44064	0.6476	Accept
GDP does not Granger Cause GTTRA	2	3.04435	0.0621	Reject
REVENUE does not Granger Cause GDP		0.89570	0.4183	Reject
GDP does not Granger Cause REVENUE	2	0.23189	0.7944	Accept
CGOVE does not Granger Cause GDP		1.37932	0.2663	Accept
GDP does not Granger Cause CGOVE	2	0.92547	0.4067	Accept
REFORM does not Granger Cause GDP		0.88003	0.4246	Accept
GDP does not Granger Cause REFORM	2	0.30158	0.7417	Accept
GDP does not Granger Cause GDP Trade		2.30218	0.1169	Accept
Trade does not Granger Cause GDP	2	8.50792	0.0011	Reject
GDP does not Granger Cause FD		2.03647	0.1476	Accept
FD does not Granger Cause GDP	2	2.70543	0.0826	Accept

Author's estimations

The 2SLS results are represented in Table 3. Most of the coefficient values in Table 3 are statistically significant, and the signs are consistent with previous studies, which indicates that economic growth is inversely connected to three parameters. Increasing domestic debt by one unit would raise production by 1.88 units. The positive effects of domestic debt are related to the proper use of borrowing funds, which contributes to higher growth in resource-starved economies (Babu, Kiprop, Kalio, & Gisore, 2015; Sheikh, Faridi, & Tariq, 2010). On the other hand, external debt is insignificant and negatively correlated with growth. Due to a one-unit rise in foreign debt, production would decrease by 0.29 units. The interest load of external financing may absorb important government revenues. Huge external debt means capital outflow in the form of interest, which will discourage the development of the country (Akram, 2011; Atique & Malik, 2012; Safdar, Liaquat, & Bibi, 2021). The government should increase domestic savings and decrease useless spending rather than relying on extensive foreign assistance. The government receives taxes to provide its people with public services. The economy's output is accumulated through better use of such revenue so that the impact of government revenue on economic growth is positive.

Government Expenditure on Social and Community Services (GTESC) would have the effect of eliminating social and economic backwardness. As the results of Table 3 show, there will be an increase in output of 13.4 units due to a one-unit increase in government spending on social and community services. As a result of increased government spending on health, education, and other social and community services, people's productivity would increase, accelerating economic development (Asghar & ur Rehman, 2011; Ciobanu, 2020). The coefficient results in Table 3 indicate that expenditure on financial services GTEES can play an essential part in the country's economic growth. GTEES consists of agriculture, transport, and infrastructure spending. If the government raises one-unit financial services expenditure GTEES, 33.7 units will increase. Government spending on transfers of payment GTTRA tends to be negatively linked to economic growth. A one-unit rise in fund transfers such as pensions and subsidies would decrease the output by 5.57 units. There is also a negative coefficient of government spending on General Administration, Defense, and Internal Security (GTEAD). This research shows that government defense and internal security spending is inversely linked to output growth, which implies inadequate financial management in this field. The finding of 2SLS represents those public financial reforms are a significant dummy

variable, whereas a change in government is an insignificant dummy variable. Financial development and trade openness affect the economy positively. This entire means that all the parameters jointly influence the output growth.

Table 3: Results of Two-Stage Least Square

2SL	
Name of Variables	Coefficient (p-Value)
Constant	-3477636 0.0106
Domestic	1.875457 (0.0000)
External	-0.295706 (0.2066)
Revenue	1.288472 (0.0651)
GTEAD	-1.531923 (0.0671)
GTEES	33.76653 (0.0146)
GTESC	13.41347 (0.6751)
GTTRA	-5.579848 (0.0082)
Reform	1428572 (0.0000)
CGOVE	-41808.81 (0.8775)
Financial Development	11.71065 (0.0182)
Trade Openness	9.151536 (0.0127)

Author's estimations

CONCLUSIONS AND POLICY RECOMMENDATIONS

The evidence from this study identified the importance of public financial resource management to Pakistan's output growth. In this analysis, the annual data used covers the period from 1977 to 2018. The implications of the 2SLS technique on the sample data suggested that the financial management of the public sector contributes to accelerating the growth process. Moreover, this study also examined the effect on the growth of the financial reforms of the 1990s and concluded that they had a positive impact on output. The results of this study indicate that various types of government spending have different effects on the growth of GDP. Administrative expenditure, defense, and transfer of payments negatively influence the economy. This indicates that resources are poorly managed. Public spending on the social, community and economic programmers would have a promising economic impact. Domestic debt spent on productive purposes boosts economic growth. Foreign debt harms the economy because the country must pay a high level of interest on external debt. In this situation, the government should pay the principal amount and interest. This results in foreign reserve leaks harming economic expansion. The study also concluded that financial development and trade openness (control variables) also positively influenced output growth. This study concluded that along with the reform of the 1990s, properly stacked government projects, improved budget preparation, and an effective financial planning mechanism are important to economic growth. Financial management reforms are often complicated as they include the political inclination to make difficult decisions. Reforms such as proper budgeting, monitoring, implementation, and accountability, if implemented, would have a positive impact on production growth.

Government spending is a key component of fiscal policy for achieving economic goals. Government expenditure that is inflationary causes economic and social problems should be limited. The government should take adequate measures to educate and train its public servants to achieve better results. The government should limit foreign borrowing, which has adverse effects on the economy. There is certain limitation attached to the concept of PFM. In the public sector, financial management is a traditional sort of profession. Not quick to respond to new ideas and adjustments. Furthermore, implementing new technology and techniques necessitates many permissions from various departments. Finally, financial resources are required to make its implementation practicable, and the rationale for doing so necessitates work and time.

The coronavirus (COVID-19) pandemic that swept the globe in early 2020 resulted in a significant increase in fiscal pressures, emphasizing the need for PFM in managing the budgetary response. In this context, further research is required to explore this matter, and especially there is need to investigate how government manage its limited financial resources as the government has to increase spending on vaccination

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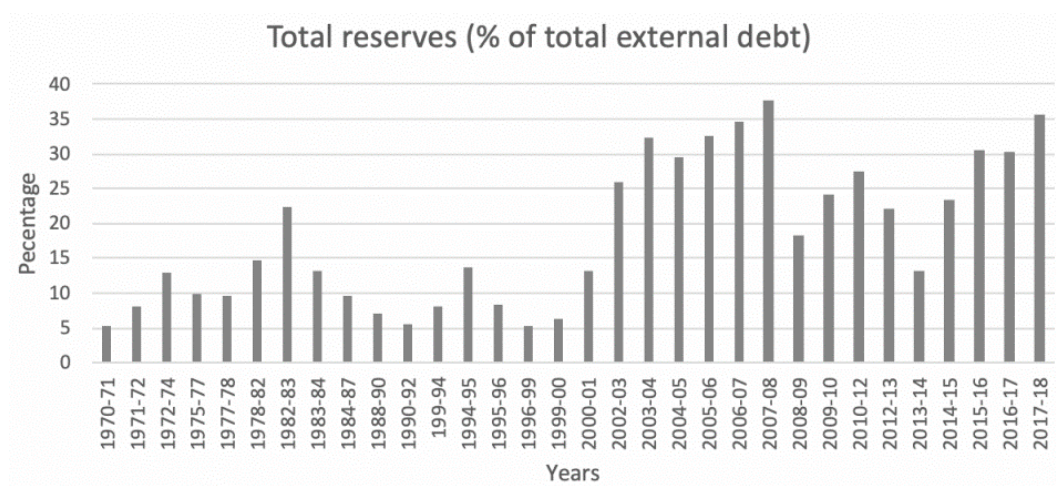
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APPENDIX

Theory intuition, and expected signs			
Variable	Theory and Intuition	Expected Sign	Data Source
GDP at Constant Factor Cost	Proxy of Economics Growth	Depended on Variable	Various Pakistan Economic Survey
Domestic Debt	A loan that a country borrows from domestic institutions	+/-	Pakistan Economic Survey
External debt	A loan that a country borrows from international institutions	+/-	Pakistan Economic Survey
Public revenue	Tax revenue as well as non-tax revenue	+	Various Pakistan Statistical yearbooks
Expenditure on administration	Expenditures to defense, military and internal securities administration	+	Various Pakistan Statistical yearbooks
Expenditure on economics services	Expenditure on the agriculture sector, construction, transport	+	Various Pakistan Statistical yearbooks
Expenditure on social community services	operating expenses on education science and public health	+	Various Pakistan Statistical yearbooks
Expenditure on transfer	Payments of social security, unemployment allowances, pensions, or scholarships	-	Various Pakistan Statistical yearbooks
Reform in public sector	Reforms are positively associated	+	Dummy Variable
Military or democratic	Government Change in government has a positive or negative impact	+/-	Dummy Variable
Financial development	Stimulate economically activity and hence increases economic growth	+	WDI
Trade openness	Promote economic growth	+/-	WDI

Author's estimations



Total reserves % of total external debt (Source:World Bank Database 1970-2018)