

# THE IMPACT OF BUDGETARY AND POLITICAL INSTITUTIONS ON FISCAL CYCLICALITY: EVIDENCE FROM EGYPT

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## Abstract

**How to cite this paper:** El-Khishin, S., & Zaky, M. (2021). The impact of budgetary and political institutions on fiscal cyclicity: Evidence from Egypt. *Journal of Governance & Regulation*, 10(3), 72–84.  
<https://doi.org/10.22495/jgrv10i3art6>

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**ISSN Print:** 2220-9352  
**ISSN Online:** 2306-6784

**Received:** 22.04.2021  
**Accepted:** 12.07.2021

**JEL Classification:** H3, H5  
**DOI:** 10.22495/jgrv10i3art6

We investigate the cyclicity of fiscal policy in Egypt during the period of 1976–2019 with a focus on how budgetary and political institutions affect fiscal performance during economic cycles. We define new variables for budgetary and political institutions and incorporate them in a vector error correction model (VECM) and impulse response functions (IRFs) analysis. While current and capital spending are proven to behave procyclically, revenues respond countercyclically during business cycles. Poor political and budgetary institutions have a negative impact on the primary deficit in a way that led to procyclical behaviour in fiscal policy in the long run. We recommend reinforcing the Golden Rule and changing the nature of the electoral system to a party-based to strengthen the role of parliament in keeping the government accountable.

**Keywords:** Fiscal Cyclicity, Budgetary Institutions, Political Institutions, Business Cycles, Electoral Systems, Principal Agent, Common Pool

**Authors' individual contribution:** Conceptualization — S.E.-K. and M.Z.; Methodology — S.E.-K. and M.Z.; Software — S.E.-K. and M.Z.; Validation — S.E.-K. and M.Z.; Formal Analysis — S.E.-K. and M.Z.; Investigation — S.E.-K. and M.Z.; Writing — Original Draft — S.E.-K. and M.Z.; Writing — Review & Editing — S.E.-K. and M.Z.

**Declaration of conflicting interests:** The Authors declare that there is no conflict of interest.

**Acknowledgements:** Authors would like to express their thanks to Chahir Zaki for his valuable discussion and comments on an earlier version of this paper at the Economic Research Forum 26th Annual Conference (2019). Moreover, the authors appreciate the contribution of Dina Abdelazeem in executing the econometric models in the paper using STATA software package.

## 1. INTRODUCTION

While the Keynesian conventional wisdom stresses the importance of countercyclical fiscal policy in stabilizing the economy, evidence shows that in many developing countries and emerging economies, fiscal policies do not precisely follow this behaviour. Underlying structural factors, such as poor access to finance and limited fiscal space, weak institutions, social and political instability, and structural inefficiencies in fiscal performance, all contribute to evident procyclical fiscal behaviour in many of those countries. Proper institutions are supposed to limit fiscal expansion in good times, prevent pressures on

increased expenditures and lower taxes during booms. In the same token, countries with poor institutions tend to have more procyclical policies as a result of weakened control over the budget, both in recessions and booms (Venes, 2010; Woo, 2009; Bova, Carcenac, & Guerguil, 2014; Ilzetzki, 2011).

Given the different institutional and regulatory setup governing Egypt's fiscal policy, such observation is very relevant to the Egyptian context. We presume that there is possible different cyclical behaviour in the components of fiscal policy. In fact, Egypt witnessed many changes in its fiscal discipline, budgetary and political institutions since the late 1970s that continue to reflect on its fiscal

performance and outcomes. As such, the current paper's motivation is to investigate the cyclicity of fiscal policy in Egypt during the period of 1976–2019 with a focus on how budgetary and political institutions affect fiscal performance during economic cycles. Our paper's novelty stems from defining new variables for budgetary and political institutions and measure the cyclicity of different components of government expenditure and public revenues in a disaggregated manner.

The current paper's main question is:

*RQ1: How did budgetary institutions influence the cyclicity of fiscal policy in Egypt as opposed to political institutions?*

To answer this question, we test the hypothesis that the cyclicity of fiscal policy in Egypt is a function in both budgetary and political institutions that together have impact fiscal performance in Egypt; both over the long run and during economic cycles. We empirically examine the cyclicity of Egyptian fiscal policy during the period of 1976–2019, that is, since the initiation of the economic transition in Egypt and the adoption of the Infitah policy. We follow this investigation by examining the interactions between fiscal and political institutions and fiscal performance in Egypt during economic cycles. The paper's contributions are threefold: first, we examine the cyclicity of fiscal policy in Egypt in a disaggregated manner using the VAR model and IRFs. Second, we examine the interactions between political and fiscal institutions in Egypt; both empirically and descriptively. While several studies examined the impact of budgetary institutions on fiscal cyclicity, few have incorporated political institutions into the analysis as potential determinants of the cyclicity of fiscal policies. Third, we define new proxies for political and budgetary institutions. Regarding budgetary institutions, we use the Golden Rule as a proxy for budgetary institutions. Egypt applied the Golden Rule until 2005, after which the Egyptian government was legally granted the right to finance current expenditures by borrowing. Regarding political institutions, we measure the impact of political institutions — legislative and/or executive — on imposing changes on the budget during the implementation phase. In this regard, the proxy we define is “deviation between draft budget appropriations and actual spending”, that is, the difference between actual total expenditures and the approved executive budget proposal. We examine both long-run and short-run interrelationships using VECM and IRFs.

The remainder of the paper is organized as follows. Section 2 presents a literature review on fiscal cyclicity and the role of budgetary and political institutions. Section 3 explains the research methodology, and Section 4 present the research results. Section 5 discusses the models' results. Finally, Section 6 encompasses the conclusion and the policy implications.

## 2. LITERATURE REVIEW

### 2.1. Institutions and fiscal cyclicity in developing countries

The Keynesian countercyclical policy relies on the assumption that the fiscal policy stabilization function will smooth the business cycle by lowering

taxes and increasing social spending components during recessions. The rationale of countercyclical fiscal policy is that governments should decrease discretionary government spending during booms, allow automatic stabilizers to operate, based on the assumption of the presence of effective automatic stabilizers such as tax rates, especially progressive types (Alesina, Campante, & Tabellini, 2008), and social programmes such as unemployment benefits. In contrast, in times of recession, governments should increase discretionary spending in the form of increased spending and decrease revenues to stimulate aggregate demand and raise employment.

However, empirical literature shows that in many developing countries and emerging markets, fiscal policies do not follow Keynesian advice and, instead, tend to be procyclical; that is, spending too much in booms leads to forced cuts in recessions (Frankel, 2011). Temsumrit (2020) highlights that both democratic and non-democratic developing countries implement procyclical fiscal policy. However, democratic environments with better institutional quality are keys for the countries to restrain the procyclical fiscal policy. Carneiro and Garrido (2015), Bogdanov (2010), Alesina et al. (2008), Ilzetzki and Vegh (2008), and Frankel, Végh, and Vuletin's (2013) empirical findings affirm procyclical behaviour in developing economies opposite to a countercyclical behaviour in developed countries and argue that developing countries tend to behave in a way that contributes to exacerbating the effects of the business cycle; that is, they tend to exhibit more often than industrialized economies pro-cyclical fiscal policies in both booms and downturns, contributing to exacerbating output volatility. This is not the case in developed countries, as the reviewed studies claim. Ilzetzki (2011) reviews a wide strand of literature that affirms that the fiscal policy in most high-income countries follows countercyclical behaviour with regard to both expenditure and taxation. Very similarly, Gavin and Perotti (1997) find that fiscal policy is highly procyclical in Latin America, and Venes (2006) affirms this conclusion and finds that higher levels of income inequality are associated with higher procyclicity on the revenue side. Manasse (2006) provides evidence that both developing and developed countries are acyclical in bad times and procyclical in good times; the difference is that bad times in developing countries are much worse or prolonged than those in developed countries.

Three main determinants of the procyclicity of fiscal policy in developing countries have been consistently mentioned in the literature reviewed: first, imperfect access to credit during times of crisis, limited access to financial markets and the lack of financial depth, especially external financing. Second, political factors that influence spending decisions during booms and recessions and inefficiencies in political institutions during social and political instability and crises that directly affect fiscal performance. For example, Furceri and Jalles (2018) find that fiscal counter-cyclicity is positively associated with financial deepening, the level of economic development, trade openness, and government size, as well as with political factors. Third, the quality of budgetary institutions that leads to structural inefficiencies in fiscal performance, whether in equilibrium or during cycles. In general,

countries with structural fiscal problems tend to have more procyclical policies (Woo, 2009; Bova et al., 2014; Ilzetzki, 2011). Stabilization programmes and policies implemented in developing countries supported by the IMF are also included in the literature as determinant factors of the cyclicity of fiscal policy (Venes, 2006).

## 2.2. Budgetary institutions as determinants of fiscal cyclicity

Efficient budgetary institutions play a strong role in adjusting fiscal responses, particularly during crises and economic downturns. In weak governments, sudden economic cycles make it harder for countercyclical fiscal policy, particularly discretionary fiscal policy, to work. Designing fiscal stimulus packages and tax cut programmes takes a longer period of time to be effectuated under weak fiscal discipline and budgetary institutions. Oppositely, strong institutions lead to less dependence on discretionary fiscal policy and should provide the needed fiscal space for automatic countercyclical stabilizers to operate. Ilzetzki and Vegh (2008) argue that if fiscal rules are present, countercyclical fiscal policies will optimally produce the appropriate solutions to business cycles.

According to Bova et al. (2014), although imposing countercyclical fiscal rules during recessions means that governments have fewer tools to react to business cycles during recessions, such rules can initially limit large expenditure expansions during booms and sudden contractions during recessions. In the same manner, Carneiro and Garrido (2015) affirm that the establishment of fiscal councils and the adoption of fiscal rules, sound debt management strategies that reinforce fiscal discipline and strengthening macro-prudential regulations are necessary conditions for graduation from procyclicality. Schmidt-Hebbel and Soto (2017) provide evidence from 120 countries over a 30-year period that rules on government expenditures can reduce the pro-cyclicality of public spending by around 40% on average. Dabla-Norris et al. (2010) examine the responses of fiscal variables to the quality of budgetary institutions in low-income countries and find that countries with stronger budgetary institutions are able to better implement countercyclical policies.

Combes, Minea, and Sow (2017) find that non-linear responses of fiscal policy to the business cycle are attributed to the level of the ratio of public debt to GDP; once this ratio exceeds "a threshold" of 87%, fiscal policy becomes procyclical. They also examine several forms of fiscal rules and conclude that the most significant fiscal rule when public debt is high is the Golden Rule. When public debt is high, the Golden Rule can play a role in switching fiscal policy from procyclical to countercyclical. The Golden Rule is one of the most important fiscal rules for managing the operation of fiscal policy. According to the rule, a government should not borrow except to finance capital spending or investment. Hence, a government cannot borrow, either during recessions or during booms, to finance current spending on social benefits programmes, wages, and interest payments. Very similarly, IMF (2003) suggests that the primary surplus response to the economic cycle weakens as the debt-to-GDP ratio

rises and simply stops when debt exceeds 50% of GDP. These results also affirm other similar results by Bergman and Hutchinson (2015), who show that fiscal rules reduce procyclicality in fiscal policy only in the case of a strong and efficient government. In Zaky and El-Khishin (2016), we analysed the violation of the Golden Rule in 2005, a violation that granted the Egyptian executives a greater power to finance significant increases in wages, interest payments, and social protection programmes by borrowing. This borrowing has resulted in a substantial increase in the budget deficit, in public debt, and, consequently, in interest payments.

## 2.3. Political institutions as determinants of fiscal cyclicity

On the other hand, political institutions and factors have also been investigated as determinants of fiscal cyclicity. Gavin and Perotti (1997), Garayeva and Tahirova (2016), and Bova et al. (2014) present evidence of procyclical government spending in developing countries as a result of political distortions, principal-agent problems, common pool problems, and other political pressures, particularly when accompanied by poor fiscal institutions. Very similarly, Frankel et al. (2013) find that the cyclicity of a country's fiscal policy is inversely related to the quality of specific political institutions, such as rule of law, bureaucracy, and control of corruption. Ilzetzki and Vegh (2008) argue that political institutions are key determinants of the cyclicity of fiscal policy because they encourage rent-seeking activities. Similarly, Halland and Bleaney (2009) argue that fiscal procyclicality itself is a sign of political distortions. Temsumrit (2020) affirms that a political regime that coincides with a lower procyclical fiscal policy is a democratic regime. The democratic regime creates a supportive environment for the government to implement countercyclical fiscal policy.

Political economists highlighted two main problems associated with political institutions that significantly affect fiscal performance, especially when budgetary institutions are insufficiently strong: the common pool problem and the principal-agent relationship between voters (the principals) and politicians (the agents). These two problems are empirically proven to have significantly affected fiscal performance in many countries worldwide. The effect is clearly larger fiscal deficits and higher debt levels. A common pool problem results when politicians make biased decisions to spend money in favour of their constituencies at the expense of the whole economy of taxpayers. This spending creates a high incentive for externalities where interest groups free ride on each other's contributions, thus indicating a bias towards overspending. On the other hand, a principal-agent problem occurs when the demands and preferences of voters are not consistent with the priorities of their political representatives. This inconsistency is a result of the biased actions of politicians who seek to extract rents from being in office and to spend public money on projects other than those which voters desire to serve their own interests. The consequence of the political principal-agent problem is political catering to special interests. Elected politicians typically use fiscal "redistributive policies" to

influence the provision and distribution of targeted public goods, which is generally their strategic tool for guaranteeing their re-election or for staying in office (Perrson & Tabellini, 2003; Von Hagen, 2002).

The impact of these two problems, particularly on fiscal cyclicity, has been examined in some studies. For example, Alesina et al. (2008) argue that fiscal policy is procyclical in developing countries and is more sound in corrupt democracies as a result of “political agency” problems, where voters demand more public goods and lower taxes during booms and politicians respond to these demands in light of the political principal-agent problem and rent-seeking behaviours. Woo (2009) empirically examines the impact of social polarization on procyclicity and concludes that countries with strong social polarization are more likely to exhibit procyclical fiscal policies. In this regard, he argues that the heterogeneity of policymakers may lead to a bias in spending that appears to be individually rational but collectively inefficient. This argument is another way of explaining the common pool problem, which creates free riders on the public spending decision, particularly if the fiscal policy is a discretionary policy. Woo (2009) affirms that political systems with a high plurality will lead to greater procyclicity. Ilzetzki (2011) finds that fiscal policy is procyclical in developing countries because of the political distortions resulting from high political fragmentation and disagreement over the desired distribution of public expenditures.

In addition to the common pool and principal-agent problems, some studies have mentioned the voracity effect as another political-institutional problem that influences the cyclicity of fiscal policy. The voracity effect was first introduced by Tornell and Lane (1999) as a cause of political cyclicity in developing economies with poor political institutions. Tornell and Lane (1999) and Venes (2010) explain the voracity effect as a case in which powerful political groups significantly affect the fiscal process in a way that slows growth in equilibrium times and generates a larger change in fiscal outcomes and decreases growth during economic cycles, hence constituting procyclical behaviour. Accordingly, decreasing the political concentration of power through a democratization process will dilute the influence of powerful political groups on the budget process and will ultimately lead to lower procyclical responses to economic cycles and, hence, better fiscal and economic performance.

### 3. RESEARCH METHODOLOGY

A well-identified strand of literature, such as Venes (2006), and Manasse (2006), empirically examine the interactions between institutions and fiscal cyclicity using aggregated fiscal variables. Nevertheless, a recent strand of literature argues that, while overall fiscal variables can behave in a specific cyclical direction, the cyclical behaviour of fiscal policy components can vary and can hence affect the overall fiscal outcomes during economic cycles. Calderón and Schmidt-Hebbel (2008) disaggregated government expenditures into current and capital expenditures and used tax revenues rather than total revenues. They argue that countries are unable to implement countercyclical fiscal

policies if they have poor institutions or lack access to internal and external credit markets. Hallerberg and Strauch (2002) also disaggregate total expenditures into transfers, wage compensation, purchases, and investments, and on the revenue side, they disaggregate taxes into direct and indirect taxes. Their main finding is that public investment shows a consistent procyclical pattern in Europe. Mukherjee (2014) analyses the cyclicity of fiscal policy and found that, while aggregate government expenditures are largely procyclical; however, there is a variation in cyclical behaviour across different components of expenditures.

#### 3.1. Variables and data sources

The hypothesis that we examine is that the budgetary and political institutions in Egypt have positively contributed to the implementation of countercyclical policies in times of economic cycles. Following Calderón and Schmidt-Hebbel (2008) and Hallerberg and Strauch (2002), we disaggregate government expenditures into current spending and capital spending. We also disaggregate revenues into taxes and non-tax revenues. We define new variables for political and budgetary institutions. Primarily, we use the Golden Rule as a proxy for budgetary institutions, as Egypt applied the Golden Rule until 2005, after which the Egyptian government was legally granted the right to finance current expenditures through borrowing. While reviewed literature use dummy measures as a proxy for fiscal rules in general and for the Golden Rule in panel analysis. However, since our model is a single-country model, the dummy approach might not be optimum. Alternatively, we use the “current deficit” — the difference between current revenues and current expenditures — as a new proxy for the Golden Rule. Notably, the violation of the Golden Rule in 2005 resulted in the classification of capital investment above the line of cash deficit within budget expenses. We argue that this amendment enabled the government to finance increased current expenses by borrowing and, hence, exacerbated the fiscal deficit. When the Golden Rule is abolished, the primary deficit is expected to increase due to the reliance on loans to finance significant increases in current expenditures. (Zaky & El-Khishin, 2016).

Regarding political institutions, we examine to what extent do political institutions — legislative and/or executive — can impose changes on the budget during the implementation phase. In this regard, the proxy we define is “deviation between draft budget appropriations and actual spending”, that is, the difference between actual total expenditures and the expenditure approved by the parliament in the enacting stage of budgeting (planned expenditure). Notably, before 2005, the Ministry of Finance had the right — through general directives — to increase public spending during budget implementation without parliamentary approval. This has resulted in a wide gap and significant deviations between actual expenditures and the budget appropriations enacted by the parliament. In 2005, Budget Law amendments constrained the authority of the Minister of Finance to amend the budget by applying numerical ceilings on transfers of budget appropriations between chapters during budget implementation. The new

law also prevented the executive branch of government from increasing public spending during budget implementation without parliamentary approval. Moreover, the 2007 constitutional amendments affirmed the restrictions of executive authority over budget on one side, however, they increased the authority of the parliament to amend the executive's budget proposal provided the agreement with the government on how to obtain required resources for finance. The new constitutional amendments also gave the parliament a longer time to discuss and enact the budget and audit final accounts. We assume that granting the parliament the authority to participate effectively in the budget process should be reflected in minimizing the deviation between actual expenditure and budget appropriations (Zaky & El-Khishin, 2016).

### 3.2. Models and tests

To assess the impact of economic shocks on fiscal performance and fiscal institutional performance, we test the cyclicity of fiscal policy in Egypt using VAR analysis that involves a vector error correction model (VECM)<sup>1</sup> and impulse response functions. In the first model, short-run responses of fiscal policy to output shocks are examined we analyse the effects of growth shocks on fiscal components in a disaggregated manner. Furthermore, to identify fiscal policy shocks, we take a recursive approach (Cholesky decomposition)<sup>2</sup>. In the second model, we test the impact of both political and fiscal institutions on the cyclicity of fiscal policy in Egypt. The model includes output gap as a proxy of the output cycle<sup>3</sup>, primary deficit, current account balance, in addition to the abovementioned proxies for budgetary institutions and political institutions. The estimated models use Egyptian annual data from 1976 to 2019. It is worth mentioning that, while the first model relies on the real GDP growth rate, the second model uses the output gap as a proxy for the business cycle. The reason is that the first model aims to analyse the reaction of fiscal policy to changes in GDP. Therefore, the real GDP growth rate is a more appropriate variable for this analysis. Alternatively, the second model aims to study the effect of political and budgetary institutions on fiscal aggregates during the business cycle; thus, making the output gap a better proxy for representing the output cycle.

After applying unit root tests and deciding on the proper lags<sup>4</sup>, cointegration tests are performed to determine whether there is a long-run relationship among the variables<sup>5</sup>. The VECM is

applied to illustrate the long-run interactions between political institutions, budgetary institutions, and the output gap. As indicated above, the other main control variable in this model is the current account balance as a percentage of GDP, and  $\lambda$  represents the error correction term. We measure the impact of both fiscal and political institutions on fiscal aggregates during economic cycles. The interaction variables explain the interactions between cycles and both political and fiscal institutions. Our VECM specification for examining these two variables is as follows:

$$\begin{aligned} \text{Primary deficit}_t &= \beta_0 + \beta_1 \text{Polit\_inst} * \\ \text{Output\_gap}_t &+ \beta_2 \text{Budg\_inst}_t * \text{Output\_gap} + \quad (1) \\ &\beta_3 \text{CA\_GDP}_t + \lambda \text{ECM}_{t-1} \end{aligned}$$

The model uses a dummy variable to capture the structural break in the budgetary institution indicator – the current deficit. The dummy variable has been added to the model as an exogenous variable and takes the value of zero from 1976 to 2004 and the value of one from 2005 (after the Golden Rule is abolished) to 2019<sup>6</sup>. We express the output gap as a dummy variable taking one in years of recessions and zero in years of booming. Another dummy variable has been added to capture the structure break of the Economic Reform and Structural Adjustment Program in the 1990s, this dummy takes a value of one in 1992 moving forward and zero otherwise. On the other hand, after testing for structural breaks in the years of 2011 (revolution 25th) and 2016 (the devaluation), no structure breaks have been captured. This mainly because our model does not take into consideration the main variables that witnessed significant increases since 2011 (i.e., the interest payments, debt level, and nominal exchange rate).

## 4. RESEARCH RESULTS

### 4.1. Model 1: Testing the cyclicity of fiscal policy in Egypt

Impulse response functions (IRF) in Figure 1 affirm the positive relationship between both capital and current expenditures, and the real GDP growth rate. These results indicate that the two components of government expenditure in Egypt have procyclical behaviour. Concerning the overall budget deficit, the IRFs indicate a negative relationship between the overall deficit and the real GDP growth at first lag, after which the effect of GDP growth on the deficit begins to be positive. With regard to public revenues (tax and non-tax revenues), both of them start to respond to GDP growth in a positive manner, implying a countercyclical response to the business cycle.

<sup>1</sup> The results of the lag length criteria and other diagnostic checks are presented in Appendix B.

<sup>2</sup> The variables and data source are presented in Appendix A.

<sup>3</sup> The output gap is defined as the difference between the actual and potential output as a percentage of the potential output. When the output gap is zero, there is no upward or downward pressure on inflation, as actual demand coincides with the economy's potential. If the output gap is positive, meaning that actual output is greater than potential output, inflation will begin to rise in response to demand pressures. Similarly, if the output gap is negative, meaning that actual output falls below potential output, prices will begin to fall to reflect weak demand (Alichii, 2015). In this study, the Hodrick-Prescott (HP) filter was used to filter the actual GDP data and to extract from these data the trend representing potential output. Then, the output gap series was calculated by the difference between the actual GDP series and the trend series.

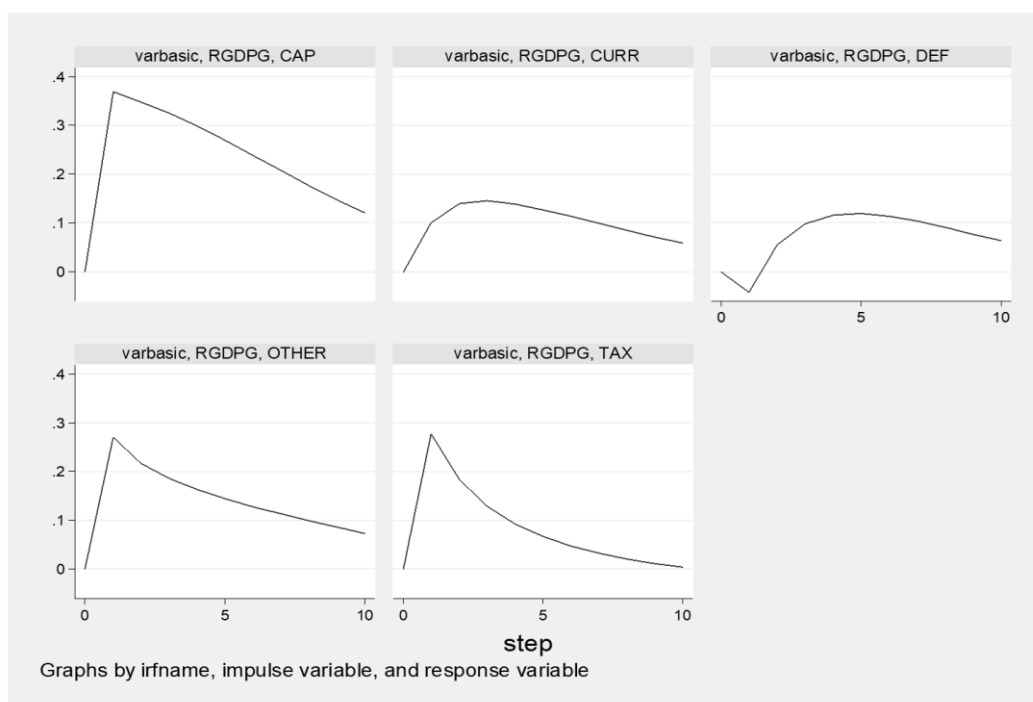
<sup>4</sup> The model results and diagnostic checks are presented in Appendix C.

<sup>5</sup> The Johansen cointegration test was chosen to test the long-run relationship. The trace and maximum eigenvalues are used to determine the presence of cointegration between variables. The cointegration results illustrate that there

is one cointegrating equation based on the trace test and the maximum rank test; this result is significant at the 5% level.

<sup>6</sup> Notably, we did not use any dummy variables for political institutions. In this regard, the model does not use any dummy variables because the constitutional amendments have not led to a significant change in the magnitude of deviations between actual and draft budgets.

Figure 1. IRF results of testing the cyclicity of fiscal policy in Egypt



#### 4.2. Model 2: Testing the impact of budgetary and political institutions on the cyclicity of fiscal policy

The results of running the VECM to test the impact of budgetary and political institutions on the cyclicity of fiscal policy in the long run are as follows in equation (2).

The below equation shows that both political and budgetary institutions have a negative impact

$$\text{Primary deficit}_t = 56.15 - 4.21\text{Polit\_inst} * \text{Output\_gap}_t - 1.01\text{Budg\_inst}_t * \text{Output\_gap}_t - 10.76\text{CA\_GDP}_t - 0.058\text{ECM}_{t-1} \quad (2)$$

Std. Err. (1.085) (0.191) (2.310) (0.017)

As opposed to our results, El Hussein (2016) examined the cyclicity of Egypt's fiscal policy in aggregate manner in expenditure side. In revenues side, the study tested the cyclicity of both public revenues and taxes. El Hussein (2016) found evidence for a countercyclical behavior of public expenditure and a procyclical behavior of public revenues and tax revenues. As a result, she affirmed that the overall fiscal policy, as measured by the primary budget deficit-to-GDP ratio, is found to act 'a-cyclically. Our results are consistent with those of the empirical studies that tested the cyclicity of different components of government expenditure and public revenues in a disaggregated manner, namely Hallerberg and Strauch (2002), Calderón and Schmidt-Hebbel (2008), and Mukherjee (2014) with regard to capital expenditure (public investment) procyclical behaviour. Additionally, we affirm Calderón and Schmidt-Hebbel's (2008) conclusion regarding the pro cycle behaviour of budget deficit in developing countries. In measuring the institutional variables impact on fiscal cyclicity, our results are similar to Calderón and Schmidt-Hebbel's (2008) with regard to countries inability to conduct countercyclical fiscal policies if they have poor institutions. Similar to this result, Manasse (2006) affirmed that fiscal rules and fiscal responsibility laws tend to

reduce the deficit bias on average, and seem to enhance, rather than to weaken, countercyclical policy. Oppositely, Venes (2006) concluded that higher levels of income inequality are associated with stronger expenditure procyclicity however, better institutions do not seem to mitigate this effect.

reduce the deficit bias on average, and seem to enhance, rather than to weaken, countercyclical policy. Oppositely, Venes (2006) concluded that higher levels of income inequality are associated with stronger expenditure procyclicity however, better institutions do not seem to mitigate this effect.

#### 5. RESULTS DISCUSSION

The positive relationship between capital expenditures and the real GDP growth rate means that the government increases investment spending when the economy is growing and tends to tighten this type of spending in times of economic slowdown. Capital spending in Egypt is hence proven to be procyclical. Notably, the capital spending component of total spending is generally very small. At its highest values in 2008, it was approximately 14.4% of total spending. It decreased to approximately 6.8% after the revolution and then recently started to show a positive trend, reaching approximately 13% in 2019 (Egyptian Ministry of Finance database). Similarly, current spending is found to react in a procyclical manner to output cycles reflecting the government tendency to increase spending on current items, such as wages and subsidies when the economy is growing.

It should be mentioned that when the Egyptian economy achieved significant growth rate exceeded 7% on average during the period of 2006–2008 wages, and pensions and ration card subsidies witnessed significant increases in May 2008. Additionally, the government proposed 30% increase in the basic salaries of central government employees, beside an unprecedented increase the incentives of local administration employees from 25% to 75%, and 20% increase in pensioners' income. The government also approved multiplying the quantities of ration card goods received by citizens. All these proposals were approved by the parliament and enacted (Egyptian Ministry of Finance database).

Concerning the overall budget deficit, theory indicates that an increase in the budget deficit during recessions happens through either spending increase and/or revenues decrease. Hence, a countercyclical fiscal policy would imply an increasing budget deficit during recessions through the famous Keynesian mechanism of deficit spending. Our model result is intuitive and indicates that the budget deficit in Egypt follows the same trend as capital and current spending; that is, it is procyclical.

Regarding public revenues (tax and non-tax revenues), both of them start to respond to GDP growth in a positive manner, implying a countercyclical response to the business cycle. This result can be explained by the fact that during recession public revenues (tax and non-tax) decline automatically through the automatic stabilizer effect. Generally speaking, taxation policies in Egypt are not the prime discretionary tools resorted to during recessions. Oppositely, the Egyptian government usually resorts to spending policies as a result of having a poor tax administration and thus a weak stabilization impact of taxation tools. Egypt suffers from very high tax evasion rates in addition to informality problems, which weaken the impact of any tax-based policy intervention and, therefore, the significance of this policy in the model. Thus, in Egypt, the only effect of tax revenues is the automatic stabilizer effect, which is normally countercyclical.

With regards to the long-run relationship, our results have very important implications. First, we defined political institutions as the deviation of actual expenditures from the appropriated draft budget; hence, a larger deviation means that discretionary interventions — pursued by either the parliament or the executive — are imposed to increase spending. If this happens during a recession, that is, there is an increased output gap, then fiscal policy is countercyclical and vice versa. In the above equation, the negative coefficient of political institutions indicates that wider output gaps (i.e., recession times) are associated with expansion in the deviations between actual spending and the appropriated budget. This result implies that political institutions in Egypt have played a role in making fiscal policy procyclical in the long run through discretionary interventions.

The significant coefficient indicates that our earlier assumption, that is, granting the parliament the authority to effectively participate in the budget process should be reflected in minimizing

the deviation between actual expenditures and budget appropriations, does not hold. It is just type of de jure authority that was not practiced de facto. This result can be explained in light of the structure of Egypt's political regime. According to Polity IV index, Egypt has been classified as autocracy with some transitions to intermediate forms of autocracy, namely "closed anocracy" by the introduction of some democratic reforms that were later manipulated by the government and in some cases boycotted by the opposition, who were largely fragmented and oppressed (CSP, 2018). Anocracies are a middling category rather than a distinct form of governance. They are societies whose governments are neither fully democratic nor fully autocratic, rather, combine an often incoherent mix of democratic and autocratic traits and practices (Marshall & Elzinga-Marshall, 2017). One manifestation of having anorectic regime in Egypt is holding competitive elections for legislature while effectively having little impact on the executive branch. Under this political regime, the government always has the upper hand on budget management and any power granted to the parliament in budget management is superficial. Therefore, any modification proposed from the parliament on the budget appropriation during enacting stage is of prior agreed on between government and parliament. Also, the parliament's right of prior approval on supplementary budgets during fiscal year is a type of rubberstamp approval. It should be mentioned that before January 25th revolution, any legislation is decided by National Democratic Party's (NDP) leaders prior to the public session.

As a result of maintaining the de facto power on budget management entirely in the hand of the government<sup>7</sup>, one can argue that the impact of political institutions on fiscal cyclicity in Egypt is not a result of common pool problem. It is a result of principal agent problem or/and the voracity effect. In Egypt, it's obvious that there is a concentration of power, indicating Tornell and Lane's (1999) voracity effect or a "more-than-proportionate change" as a result of powerful political groups, as previously explained in the paper. Egypt's political regime is characterized by political concentration and influence over power and decision-making centres. The regime always has a strong influence on government decisions and the management of public finance, whether through its presence in government or in parliament. Those in the regime naturally belonged to the ruling NDP before the revolution of January 25, 2011 (Figure 2)<sup>8</sup>. After the January 25th revolution, the political system became more fragmented because of the dissolution of the NDP, which led to large political fragmentation within the government and in the parliament, which was formed after the adoption of the 2014 Constitution.

<sup>7</sup> Article No. 124 of the Egyptian Constitution sets two conditions that place the supreme authority in budget management in the hand of the government and emphasize that parliament's authority in such management is just de jure authority and not de facto. The first condition: If the amendment proposed by Parliament to the draft budget results in an increase in the total expenditures, the parliament must agree with the government to provide sources of revenue that achieve a rebalancing between them. And the second condition is that: it is not permissible that the proposed amendments may not entail placing new burdens on citizens.

<sup>8</sup> This is a kind of "candidate-ballot" electoral system, not a "party-ballot" system.

Figure 2. Distribution of Egyptian Parliament Seats, 2000–2015



Source: Calculated from data in Hassan (2012), Zaky and El-Khishin (2016), and Abdellatif, Hassan, Youssef, and Zak (2016).

However, the regime quickly returned to its nature after the formation of the “Supporting Egypt Coalition” within the parliament, which, once again, included the most politically influential individuals or their representatives in the parliament. On the other hand, poor budgetary institutions, which are reflected in the violation of the Golden Rule and which allow current deficit financing, also resulted in a long-run tendency towards an exacerbated primary deficit through current deficit financing in the long run. The violation of the Golden Rule, in the absence of other fiscal rules, resulted in procyclical behaviour in fiscal policy in the long run.

**6. CONCLUSION**

The current paper examines the interactions between institutions (budgetary and political) and fiscal performance in Egypt during business cycles. We examine the cyclicity of fiscal policy in Egypt in a disaggregated manner. Looking at the main components of fiscal policy tools, our results indicate a procyclical behaviour in fiscal policy in response to output shocks. The only countercyclical behaviour was found in public revenues (tax and

non-tax revenues), which we argue to result from the operation of automatic stabilizers since discretionary interventions through the taxation channel in Egypt is limited.

In the long run, both political and budgetary institutions have a negative impact on the fiscal outcomes represented by the primary deficit. Poor budgetary institutions, reflected in the violation of the Golden Rule and which allow current deficit financing, also resulted in a long-run tendency towards an exacerbated primary deficit through current deficit financing in the long run which, altogether with the absence of other fiscal rules, resulted in procyclical behaviour in fiscal policy in the long run. On the other hand, our empirical findings affirm the hypothesis that political institutions in Egypt played a role in making fiscal policy procyclical in the long run through discretionary interventions. The de jure increased power of the parliament the authority to effectively participate in the budget process didn't not reflect on decreasing the deviation between actual expenditures and budget appropriations. This result is intuitive given the anorectic regime in Egypt. Under this political regime, the government always



has a de facto upper hand on budget management while the power granted to the parliament in budget management continues to be relatively limited. A number of policy proposals can hence be presented based on the above findings.

Weak institutions allow the abuse of discretionary interventions to alleviate the underlying structural fiscal imbalances during prolonged periods of recession and turn the fiscal policy behaviour to a procyclical trend. A key policy recommendation here is the importance of proposing proper fiscal rules to limit the authority of both the legislative and the executive branches over the budget and minimize the procyclical behaviour of fiscal policy, particularly during boom times. In addition to numerical ceilings, we recommend reinforcing the Golden Rule to limit the financing of current spending by borrowing. The Golden Rule and other fiscal rules are supposed to minimize discretionary interventions that are proven to have hazardous impacts on fiscal performance in countries with loose budgetary and political institutions. The Egyptian government has already implemented an IMF-supported reform programme that includes a radical transformation in the structure of current spending, particularly the subsidies component. Nevertheless, another

current spending component is increasing dramatically: interest payments. In this regard, it is worth noting that focusing on the primary deficit as an indicator of fiscal performance might be misleading. Rather, the overall deficit should be the proper indicator to be targeted because it includes the largest component at present, debt service. In addition to the current structural reforms, re-adopting the Golden Rule will help avoid future pressures on debt explained by debt service. Regarding political institutions, we recommend changing the nature of the electoral system to a party-based, rather than an individual-based, system to strengthen the role of parliament in keeping the government accountable and to avoid the occurrence of spending bias due to principal agent and voracity effects problems.

Finally, we have to refer to the current paper limitations including the validity of using the output gap as a measure of business cycles. It should be mentioned that the modification of Egypt's budget classification in 2005, to be in accordance with GFS system, resulted in a little bit inaccuracy in the values of some fiscal variables. Additionally, unavailability of a long time series for fiscal data put restrictions on the authors in adding more explanatory variable in the models.

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## APPENDIX A

**Table A.1.** Variables and sources of data

Eleven variables have been used in two models are specified below.

Variable	Sources
1. Current expenditure % GDP	Ministry of Finance, the budget and unpublished data
2. Capital expenditure % GDP	
3. Tax revenues % GDP	
4. Other non-tax revenues % GDP	
5. Overall deficit % GDP	
6. Primary deficit % GDP	
7. Current account balance % GDP	Central Bank of Egypt
8. Real GDP growth rate	World Bank
9. Output gap	Author calculations
10. Budgetary institutions	Author calculations
11. Political institutions	Author calculations

**APPENDIX B. VAR ANALYSIS**

**Figure B.1. Lag length criteria**

Eigenvalue stability condition

Eigenvalue	Modulus
.8915999 + .1139153i	.898848
.8915999 - .1139153i	.898848
.7054119	.705412
.5585079	.558508
.3824041	.382404
-.01175461	.011755

All the eigenvalues lie inside the unit circle.  
VAR satisfies stability condition.

**Figure B.2. VAR stability condition**

Eigenvalue stability condition

Eigenvalue	Modulus
.8915999 + .1139153i	.898848
.8915999 - .1139153i	.898848
.7054119	.705412
.5585079	.558508
.3824041	.382404
-.01175461	.011755

All the eigenvalues lie inside the unit circle.  
VAR satisfies stability condition.

**Figure B.3. No autocorrelation condition at lag 2**

Lagrange-multiplier test

lag	chi2	df	Prob > chi2
1	61.5171	36	0.00508
2	35.8264	36	0.47679

H0: no autocorrelation at lag order

**Figure B.4. Normally distribution**

Kurtosis test

Equation	Kurtosis	chi2	df	Prob > chi2
RGDPG	2.3968	0.652	1	0.41947
DEF	4.7402	5.426	1	0.01984
CURR	2.8235	0.056	1	0.81319
CAP	4.9964	7.141	1	0.00753
TAX	3.6298	0.711	1	0.39926
OTHER	4.0727	2.062	1	0.15105
ALL		16.047	6	0.01350

## APPENDIX C. VEC MODEL

Figure C.1. Lag length criteria

Selection-order criteria  
Sample: 1980 - 2019

Number of obs = 40

lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	-656.469				9.8e+06	33.1235	33.2151	33.3768
1	-502.101	308.74	36	0.000	26892.6*	27.205*	27.8462*	28.9784*
2	-482.715	38.771	36	0.346	69927.8	28.0358	29.2265	31.3291
3	-445.695	74.039	36	0.000	94428	27.9848	29.7251	32.7981
4	-395.51	100.37*	36	0.000	103388	27.2755	29.5654	33.6088

Endogenous: PRIMARY\_DEF\_GDP POLIT\_OUTGAP BUG\_OUTGAP CA\_GDP D01 D02  
Exogenous: \_cons

Figure C.2. The Johansen cointegration test

Johansen tests for cointegration  
Trend: constant  
Sample: 1977 - 2019

Number of obs = 43  
Lags = 1

maximum		LL	eigenvalue	trace	5% critical
rank	parms			statistic	value
0	6	-603.52749	.	123.8623	94.15
1	17	-570.31965	0.78659	57.4466*	68.52
2	26	-557.34307	0.45314	31.4934	47.21
3	33	-549.06939	0.31943	14.9461	29.68
4	38	-545.18485	0.16529	7.1770	15.41
5	41	-542.37431	0.12254	1.5559	3.76
6	42	-541.59636	0.03554		

maximum		LL	eigenvalue	max	5% critical
rank	parms			statistic	value
0	6	-603.52749	.	66.4157	39.37
1	17	-570.31965	0.78659	25.9532	33.46
2	26	-557.34307	0.45314	16.5474	27.07
3	33	-549.06939	0.31943	7.7691	20.97
4	38	-545.18485	0.16529	5.6211	14.07
5	41	-542.37431	0.12254	1.5559	3.76
6	42	-541.59636	0.03554		

Figure C.3. VECM results

Cointegrating equations

Equation	Parms	chi2	P>chi2
_cel	5	57.23642	0.0000

Identification: beta is exactly identified

Johansen normalization restriction imposed

beta	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
_cel					
PRIMARY_DEF_GDP	1	.	.	.	.
POLIT_OUTGAP	4.21154	1.085536	3.88	0.000	2.083928 6.339152
BUG_OUTGAP	1.017292	.1916578	5.31	0.000	.6416499 1.392935
CA_GDP	10.76601	2.310115	4.66	0.000	6.238265 15.29375
D01	14.67304	12.68477	1.16	0.247	-10.18865 39.53474
D02	-123.9748	17.25051	-7.19	0.000	-157.7852 -90.16446
_cons	56.15138	.	.	.	.

**Figure C.4. No autocorrelation at lag 1**

Lagrange-multiplier test

lag	chi2	df	Prob > chi2
1	49.8182	36	0.06257

H0: no autocorrelation at lag order

**Figure C.5. Normally distribution**

Jarque-Bera test

Equation	chi2	df	Prob > chi2
D_PRIMARY_DEF_GDP	23.036	2	0.00001
D_POLIT_OUTGAP	102.210	2	0.00000
D_BUG_OUTGAP	11.812	2	0.00272
D_CA_GDP	2.900	2	0.23455
D_D01	464.030	2	0.00000
D_D02	1.354	2	0.50803
ALL	605.342	12	0.00000