

TESTING BUDGET SUSTAINABILITY IN SARAWAK STATE

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ABSTRACT

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This study examines sustainability of the budget stance of Sarawak state during the period of 1970-2008. Using the usual intertemporal borrowing constraint as a framework, the study tests the long run relationship between government revenue and expenditure. The empirical result indicates that there is exists long-run or equilibrium relationship among the variable. The cointegration result suggests that Sarawak state fiscal stance satisfies the weak sustainability condition. Besides that the Granger causality result reveals that there is a bi-direction relationship between government revenue and expenditure. This means that fiscal authorities are made simultaneous decisions on expenditure and revenue. Government revenue and expenditure will mutually reinforce each other.

ABSTRAK

Mengkaji Kestabilan Budget di Negeri Sarawak

Oleh

Teo Hui Fern

Kajian ini bertujuan untuk mengkaji kestabilan budget di negeri Sarawak dalam tempoh masa 1970-2008. Kajian ini mengkaji hubungan dinamik antara pendapatan kerajaan dan pembelanjaan kerajaan. Berdasarkan keputusan ujian kointegrasi ia telah membuktikan kewujudan hubungan antara pendapatan kerajaan and pembelanjaan kerajaan. Keputusan ujian kointegrasi mencadangkan bahawa Sarawak berada dalam keadaan yang kurang stabil. Di samping itu, ujian penyebab Granger menunjukkan bahawa hubungan pendapatan kerajaan dan pembelanjaan kerajaan adalah saling berkaitan antara satu sama lain. Ini bermaksud pengkuasaan fiskal telah membuat keputusan yang serentak di antara pendapatan dan pembelajaan kerajaan. Pendapatan dan pembelajaan kerajaan akan mencapai kesamaan yang memuaskan.

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CHAPTER ONE

INTRODUCTION

1.0 Introduction

In managing the economy, government can use both fiscal and monetary policies. Fiscal policy is the use of government spending and revenue collection to influence the economy. While monetary policy is the process of country to control the supply of money, availability of money and cost of money or rate of interest by the central bank or monetary authorities.

The two main instruments in fiscal policy are government spending and taxation. Changes in the level and composition of taxation and government spending will affect the aggregate demand and level of economic activity as well as the pattern of resources allocation and the distribution of income. Fiscal policy can also be used to bring the economy to the potential level if policymakers understand the relationship between government expenditure and revenue. Hence the budget sustainability has attracted significant interest. This is due to the fact that budget sustainability has an impact on the economic growth.

There are three possibilities of the fiscal policy that can affect the budget outcome of the economy activity, which are neutral, expansionary and contractionary. A neutral stance of fiscal policy implies a balance budget where government expenditure is equal to total tax revenue. An expansionary stance of fiscal policy

involves an increase in government spending throughout rising government spending or a fall in taxation revenue or a combination of the two. This will lead to budget deficits, which cause government expending greater than government revenue. A contractionary fiscal policy occurs when government spending is reduced either through higher taxation revenue or reduced government spending or a combination of the two. This will lead to a budget surplus.

Refer to the Abdunasser (2002) budget sustainability is the talent of the government in maintaining given spending, taxation, and borrowing pattern as well as altering policies setting to satisfy its long –run budget constraint. In other words, budget sustainability refers to the ability of the government to maintain a given policy stance in the future. Thus, government plays an important role to maintain budget sustainability.

Castro and Cos (2002) recommended that strong budget sustainability indicate no future problem in the deficit behavior is expected to arise, and there is no need for structural fiscal reforms. On the other hand, weak sustainability implies that government might have future problem in marketing their debt.

1.1 A Brief Background on Sarawak State Development¹

Sarawak was officially granted independence on 22 July 1963 and was admitted into the Federation of Malaysia on 16 September 1963. As the largest state in the Federation of Malaysia, Sarawak aims to be a fully developed state along with the rest of the country by 2020.

Sarawak has identified four sectors as key sources of growth, which include manufacturing, commercial agriculture, construction, and services sector. The availability of an abundance of nature resources has made Sarawak an attractive choice for investors. In the beginning, Sarawak economic was mainly dependent on the natural resources, such as the agriculture and forestry sectors, to provide a basis for the industrial growth. During 1963-1973, the primary commodities sectors contributed 36 percent of the GDP, particularly agriculture, forestry and mining. After 1972, the mining and manufacturing sectors became the biggest contributors to the state's GDP. The average GDP growth rose from RM3, 679 million in year 1981 to RM6, 559 million in 1990.

Between 1991 and 2005, Sarawak economy has growth at an average pace of 5.5 percent per annum. GDP in real term has increased more than two times from RM9.9 billion to RM22.2 billion. This is due to the contribution of the mining and corporate sector. Per capita nominal GDP also rose from RM7,467 in 1990 to RM21,260 in 2005. By the era of the 21st century, the agriculture and plantation sectors, mainly palm oil, became mechanized and Sarawak starts adopting modern

¹ The discussion in this section is adapted from Sarawak government Official Portal (2008).

method of farming. The large tract of land generates Sarawak suitable for commercial agricultural development. Approximately 32% of the state's total land areas have been identified as suitable agricultural land. However, productive permanent crops planted were less than 9%. Oil palm, sago, and papper became Sarawak major commercial crops.

During 2005 agriculture, mining, manufacturing, construction and the service sector became the state's economic growth. Agriculture has expanded its size from RM0.65 billion in 1990 to RM1.6 billion, while services sector became state's biggest sector making up 31 percent of real GDP sector and overtaking the mining and quarrying sector at 29.9 percent. During this period the tourism industry also helps to spur the growth of the services sector mainly transport and communication, restaurants, hotel and other services sector.

Over the time, Sarawak's global economic has been expected to remain robust and dynamic right up to the next decade. As Sarawak states can keep nation's economy at a steady and stable level. Sarawak can become a developed state by the year 2020.

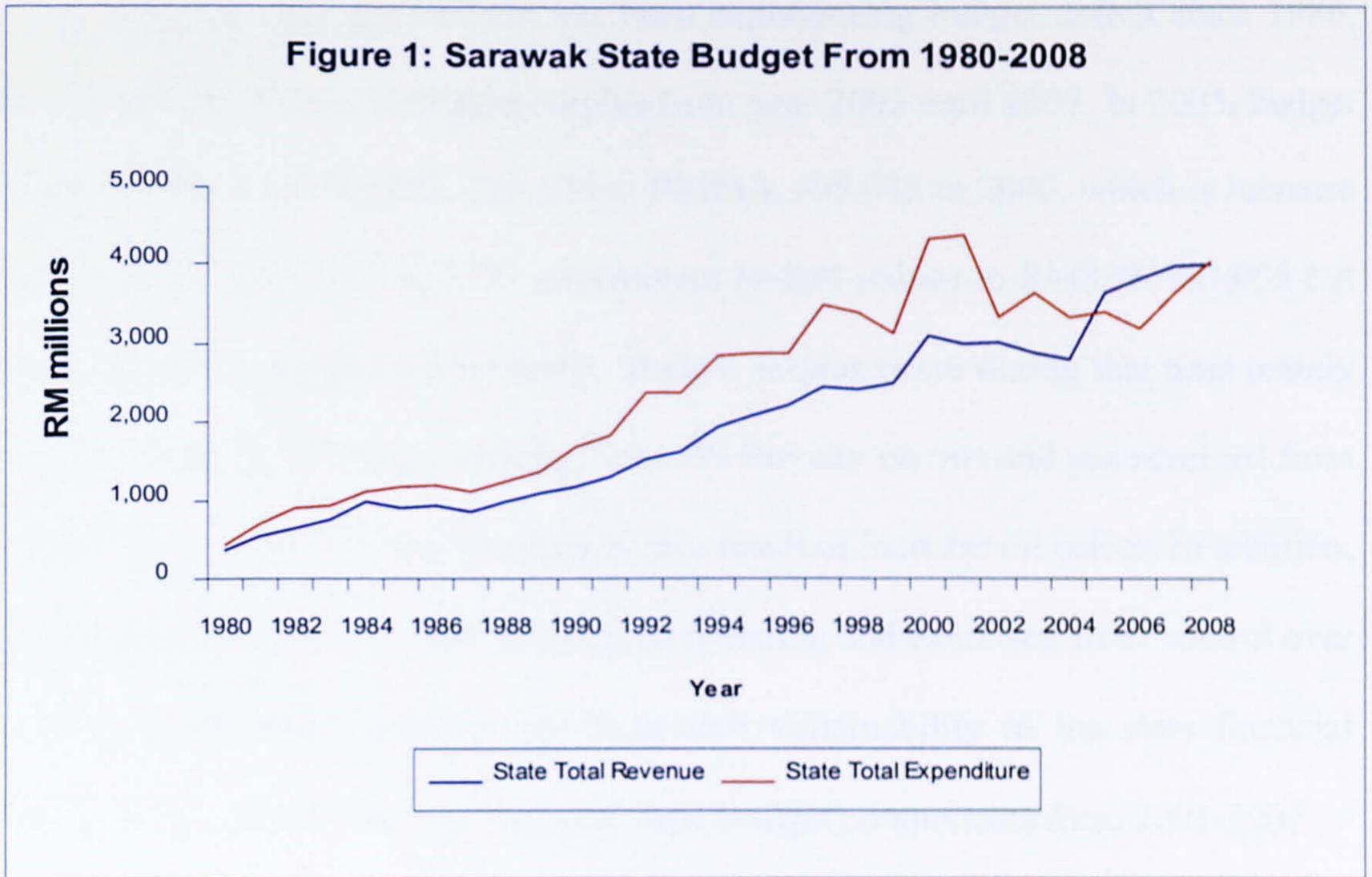
1.2 Sarawak State Budget

There are two main components in the Sarawak budget: revenue and expenditure. Sarawak revenue sources are tax revenue, non tax revenue, non revenue receipts and federal grants and reimbursements.

Tax revenue is collected based on ordinances and acts. The major sources are forestry royalty, forest premium and forest tariff. Rates of royalty and premium for produce taken under license are regulated by section 52(2) of Forest Ordinance. Based on States Sales Tax Ordinance 1998 effective 1 October 1998, State sales of Crude palm oil will increase from at 2.5% to 5% of total sales and states sales tax of 5% was imposed on sales of lottery ticket in 2001 and has increased to 10% of total sales effectives 2004. The major sources of non tax revenue is form 5% royalty on oils and gas receive from PETRONAS based on the 1975 agreement sign between the State Government and PETRONAS. While, non revenue receipts obtained mainly from the dividend income from the state's investment in listed and non listed companies and interest income on bank balances. Federal grants and reimbursement are received in accordance to the Federal Constitution.

Sarawak government expenditure consists of two components, which are operating and development expenditure. This operating expenditure accounts for about 40% of the total Sarawak government expenditure since 2004 while the balance is from development expenditure. Operating expenditure is essential for the smooth operation of government machineries that covers personal emolument, supplies and services, procurement of assets, grants and fixed payment and other. Development

expenditure is the expenditure allocated to the State's ministries, departments and agencies to implement the approved development projects.



As shown in Figure 1, Sarawak State Budget From 1980-2008, there has been a steady increase of the expenditure around 1983-1986 as there was a commodity crisis in 1982 and government has to increase expenditure to enhance economic recovery. In 1982, the government expenditure increases about 32% compare to the previous year. Meanwhile, the revenue gain by government increased about 19%. During 1997 to 1999, there was a slowdown phase due to 1997 financial crisis. Some actions have been taken by the Malaysia government to gain back market confidence, such as introduction of capital control, increase interest rate to curtail the sliding Malaysia currency as well as control over the fiscal policy. Government also utilizes fiscal policy by increasing expenditure to spur the economic growth. Thus, expenditure sharply increases from 1999 to 2001. Government expenditure increases

about 40% compare to the year 1999. At the same time government revenue increases about 19%.

Sarawak state government has been experiencing budget deficit since 1980, and then it take turn to the budget surplus from year 2005 until 2007. In 2005, budget surplus enlarge from RM242, 232,172 to RM614, 795,635 in 2006, which is increase around 154%. However, in 2007 government budget reduce to RM329, 393,005 but budget still at the surplus performance. Budget surplus occur during that time mainly due to the increase of revenue arising from 5% Royalty on oils and gas received from PETRONAS in non tax revenue category as a result of increase oil prices. In addition, government also practices prudent financial spending and exercised strict control over operating expenditure to ensure the long-term sustainability of the state financial position. Table 1 below shows, Sarawak State Budget components from 2001-2007

Table 1: Sarawak State Budget Components from 2001-2007

Year	TR	NTR	NRR	FGR	DR	OE	DE
2001	939.87	1472.79	6.19	73.39	515.75	1402.07	2990.60
2002	927.05	1516.59	6.09	76.65	508.32	1255.06	2106.35
2003	939.52	1341.22	6.99	82.41	544.38	1272.75	2405.46
2004	862.70	1588.79	12.85	118.81	247.55	1344.70	2026.94
2005	909.54	2095.54	8.70	88.29	566.16	1219.89	2206.11
2006	904.08	2582.04	12.97	89.92	255.09	1158.53	2070.77
2007	900.73	2630.59	14.14	95.82	372.69	1266.64	2417.94

Notes: The figures are in Ringgit Malaysia (RM) million. TR - Tax Revenue, NTR - Non Tax Revenue, NRR - Non Revenue Receipt, FGR - Federal Grants and Reimbursements, DR - Development Revenue, OE - Operating Expenditure, and DE - Development Expenditure.

1.3 Relation between Revenue and Expenditure

Fiscal policy is crucial to promote sustainable growth. Thus, understanding the relationship between government revenue and expenditure is important to evaluate budget sustainability. Recently, public finance literature provides a vast number of studies to analyses the relationship between government revenue and expenditure. These studies mostly characterized by efforts of the fiscal authority to maintain the budget balance.

From a fiscal perspective, maintaining a stable long-term relationship between expenditure and revenue is one of the key requirements for a stable macroeconomic environment and a sustainable economy. Budget deficit happens when government expenditure exceeds government revenue; on the other hand, budget surplus was achieved when government revenue is more than government expenditure. Whereas budget balance happen when the government revenue equal to the government expenditure, however it is hard to obtain budget balance. Therefore, government plays an important role to maintain budget sustainability of the state.

There are three competing hypotheses regarding the relationship between government revenue and expenditure, namely: the fiscal synchronization hypothesis, the tax and spend hypothesis, and spend and tax hypothesis. Those hypotheses provide useful guidelines for the decision maker on the choice of prevent or correction measurement. Narayan and Narayan (2006) provide three reasons why the nature of the relationship between government expenditure and government revenue is important. The first reason state that if the revenue-spend hypothesis holds, budget

deficit can be avoided by implementing policies that stimulate government revenue. The second reason states that if the bi-directional causality does not hold, government revenue decisions are made independent from government expenditure decision. This can cause high budget deficit, government expenditure will rise faster than government revenue. The third reason is that if the spend-revenue hypothesis holds, it suggests that the government spends first and pays for the spending later by raising taxes. This will cause public paying more taxes in the future and encourage the outflow of capital.

Thus, government revenue and expenditure will affect budget performance in Sarawak. As the budget deficits happen government can exploit the policies that motivate government revenue. According to Eita and Mbazima (2008), budget deficit can be eliminated by implementing policies that stimulate government revenue.

1.4 Problem Statement

Sarawak state government has been experiencing budget deficit from year 1980-2004, and then it took turn to the budget surplus from year 2005 until 2007. This was mainly due to the government strict control over the expenditure and rising up the revenue via tax revenue to ensure the long-term sustainability of the state financial position. Thus, budget sustainability became an empirically debatable issue in the field of public finance.

Large and persistent government budget deficit can pose a serious threat to the country growth. If such phenomenon does occur, then the fiscal imbalance would imply a need for larger and more painful adjustment for the economy. Government has to pay off its outstanding debt through sufficiently large future budget surpluses, which require an increase in the taxes or cut in the spending. Higher taxes have many distortion effects on the economy. Furthermore, a large increase in the government debt may impose a burden on the future generation.

Therefore, this study intends to empirically examine the budget sustainability condition in Sarawak. The budget imbalance can be avoided if policy maker understand the nexus between government revenue and expenditure. In addition, government is supposed to ensure that the adjustment of policy can be within the framework of the sustainable budget position. Government revenue and expenditure have to be investigating properly and be more effective in influencing economic growth.

1.5 Objectives of the Study

1.5.1 General Objective

The general objective of this study is to find out the relationship between government revenue and government expenditure in Sarawak. The relationship between government revenue and government expenditure will provide useful insight to the government. Besides that, this study also attempts to identify the budget sustainability in Sarawak.

1.5.2 Specific Objectives

- i. To study the long-run cointegration relationship between Sarawak state government revenue and expenditure.
- ii. To test the sustainability condition of fiscal policy in Sarawak
- iii. To examine empirically the causal direction between government revenue and expenditure in Sarawak.

1.6 Significance of the Study

The significance of the study is to investigate the relationship between government revenue and government expenditure, in order to test the budget sustainability in Sarawak. The right decision for the fiscal policy, which relate to the government revenue and expenditure might bring to budget surplus rather than deficit for the state of Sarawak.

1.7 Scope of the Study

The study is a time series data analysis and the sample size will focus on the 38 years of government expenditure and revenue in Sarawak from the year 1970 to 2008 annually. The arrangement of the study is introduction of the research will present in Chapter one. In Chapter two, literature review will be discussed on various views of previous researchers relate to the topic. In Chapter three the research methodology and the data collection will be discussed while Chapter four will contain the empirical result and discussion of the result. A conclusion remarks and policy suggestion will be included in the final Chapter of this study.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

There had been extensive theoretical and empirical studies on fiscal sustainability in both developed and developing countries, which can provide some view on fiscal sustainability condition among those countries. In this chapter we will review empirical evidences from numerous literatures to clarify and identify the relationship between government revenue and expenditure and the methodology utilized by the previous study. We will look through the relationship among these variables to identify the sustainability condition.

In the literature on fiscal policy sustainability there are basically two main approaches. Both approaches suggested that possible techniques to test the sustainability of fiscal policy via the fulfillment of the government's present value budget constraint (PVBC) or referred as intertemporal budget constraint (IBC) in present value terms. The first approach, beginning with Hamilton and Flavin (1986), was based PVBC analyses historical series of public deficit and debt, while the second approach has based on Trehan and Walsh (1988) which shows that satisfying the government budget balance in present value terms was equivalent to the condition that government expenditure and tax revenue to be cointegrated. In that case, cointegration between expenditure and revenue, either in real terms or as ratios of GDP, was a sufficient condition for the sustainability of fiscal policy.

2.1 Reviews on Fiscal Sustainability from Developed Countries

Makrydakis et al. (1999) employed conventional unit root test and the Zivot-Andrews sequential unit root test procedure to investigate the long run sustainability of fiscal policy in Greece during the period spanning from 1958 to 1995. The empirical analysis revealed that the Greek government failure to satisfy intertemporal budget balance in the long-run and identifies as the cause of this failure a deterministic by the policy regime shift taking place in 1979. Hence the study suggested that, such unsustainability condition can be avoided through appropriate fiscal consolidation.

Green et al. (2001) applied intertemporal budget constraint (IBC) as a framework to evaluate the sustainability of the current fiscal policy regime in Poland. Although the budget deficit remains high, the results suggested that Poland has made substantial progress toward fiscal sustainability. Unit root and cointegration test indicated that Polish policy is currently sustainable. While, the causality test show that fiscal policy appears to be 'expenditure led' with the authorities adjusting taxes to ensure that planned expenditure can be finance within the framework of a sustainable budget balance.

Arestis et al. (2002) investigated the long-run sustainability of fiscal policy in the U.S during the period spanning from 1947:2 to 2002:1. They argued that for fiscal authorities to be able to meet the solvency constraint, they should intervene through deficit cut only when the government budget deficit become very large. Thus, they applied threshold unit root estimation procedure proposed by Coner and Hansen

(2001). Empirical result shows that U.S fiscal policy has undergone structural shift in the last four decades. The study suggested that these switches were driven by asymmetries in the adjustment process. Hence, government authorities would intervene by cutting deficit only when they have reached a certain threshold.

Bravo and Silvestre (2002) tested the sustainability of the public deficit by studying the stationary and the cointegration properties of total public expenditure and revenue as ratio of GDP for 11 member states of European Union during the period 1960-2000. The empirical results shows that in Austria, France, Germany, Netherlands, and the UK point to the possibility of sustainable budgetary, if the cointegration of expenditure and revenues as ratio to the GDP emerge a sufficient condition for sustainability. However, in Belgian, Ireland, Portugal, Italy and Finland were not seen to be sustainable.

Castro and Cos (2002) carried out unit root test and cointegration analysis on the data of Spanish during 1964-1998, it was found that in the recent year the fiscal policy regime seem to be become sustainable in a strong sense. The results consistent with the evolution of fiscal policy in Spanish recent years, characterized by gradual decline in the deficit as a result of drop in spending and slight decline of total revenue over GDP that reversed the previous tendency to imbalance in public finances. Therefore, under this study, the sustainability of the Spanish fiscal policy should be interpreted in the sense that no future problems in marketing public debt if fiscal variables follow the pattern of the past in the future.

Koo (2002) carried out the sustainability test on the Korean fiscal policy for the period 1970-1999. The result shows that Korean fiscal policy should be regarded as sustainable during that period. The indicators of sustainability also indicated that Korean fiscal policy for the period 1970-1996 was sustainable. However, both the primary and tax gap indicator with a sharp rise in the debt ratio are shown to be worsening since 1997 which indicating high possible unsustainable policies. Which can be observing as current primary deficit was too large and current taxes were too low to stabilize the debt ratio. Thus, increase tax collection and per capital tax burden were recommended to reduce the government budget deficit and debt, in order to retain the fiscal sustainability in Korea.

Bajo-Rubio et al. (2003) re-examined the long-run sustainability of budget deficit, when the fiscal policy was conducted as a nonlinear process. The analysis was applied to the case of Spain during the period 1964 to 2001. They utilized threshold cointegration which considered the possibility of a nonlinear relationship between government revenue and expenditure. The results suggested that the presence of significant nonlinear effect in Spanish fiscal policy. Consequently, the fiscal authorities would cut deficit only if they were large enough in order to ensure the long-run sustainability.

Konstantinou (2004) examined the solvency of the Greek fiscal policy over the period 1970:1 to 1997:1. The empirical results revealed an evidence of cointegration between government spending and revenue, but the finding was not satisfied Greek intertemporal solvency condition. The causality tests shows that revenue precedes government expenditure and that the behavior of the Greek fiscal