

# The Impact of Public Debt on the Economic Growth for the Gulf Cooperation Council Countries

HANADI TAHER,  
*Beirut Arab University, Lebanon*

In this paper, I study the government debt to GDP ratio impact on per-capita GDP growth rate for six Gulf Cooperation Council (GCC) countries, namely, Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and UAE over a period of about 23 years starting in 1990. Some light has shed on the European Union (EU) relationship with the GCC for better economic growth. The test results are consistent with some studies in literature that proved a negative correlation between public debt and nation's economic growth above certain threshold although this threshold is not standard. Public debt for the GCC countries has different effects on per capita GDP growth varying from country to country due to the variation in a number of different factors. The main finding of this study shows that country government debt and macroeconomic determinants have varied impacts on per capita GDP growth for various countries based mainly on their government debt ratios.

| 27 |

*Key words:* government debt, public debt, economic growth.

## INTRODUCTION

Government debt to GDP ratios increased considerably over the past years in most developed and mainly emergent economies which lead to various impacts on economic growth. In this paper, we study the impact of government debt to GDP ratio on per-capita GDP growth rate for six GCC (Gulf Cooperation Council) countries, namely, Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and UAE over a period of about 23 years starting in 1990. The Gulf Cooperation Council, as an integrating region in the Middle East, established in 1981 in order to reach an economic and monetary integration of six GCC countries—Saudi



Arabia, Kuwait, the United Arab Emirates, Qatar, Bahrain, and Oman. These regional integrating members share same economic structure as oil exporters beside the similarities in culture. Nowadays, in the globalized world virtual borders are present so that the Middle East European neighborhood is a matter to study economically. The most stable multilateral Middle Eastern organization is the GCC, beside the GCC member states role in securing the global and European financial system because of their sovereign wealth funds. Therefore, it is important to highlight on the relationship between the European Union and GCC partnership.

For these countries, government debt increased inconsistently during the last decades. While the government debt to GDP ratio has increased in all tested countries from 1990 to 2014, Kuwait was an exception that showed a sharp increase in 1991 reached 203% of GDP then started to decrease gradually to reach 7% of GDP in 2014. For some countries, such as Saudi Arabia and Kuwait public debt and economic growth showed a negative relationship with higher public debt and lower economic growth, while for other countries the results were more synchronised where higher government debt to GDP ratio was accompanied by increase in economic growth. Simply we can say, for all tested countries, the case of higher government debt to GDP ratio and lower economic growth are for countries with high government debt to GDP mean. The reasons for the increase in public debt are important issues to be explained in order to check its economic impacts and thus for building up the government's economic and fiscal strategies. Reinhart and Rogoff (2010) argue that peacetime debt is more complicated for future economic growth compared to wartime debt explosions.

One of the important questions related to the economic integration for the GCC countries is their public debt to GDP ratio. An increase in the public debt-to-GDP ratio, *ceteris paribus*, has accompanied with a decline in the economic growth rate. Theoretically, this relationship proved to have a non-linear impact where it turned to negative only after a certain threshold. In this paper, this non-linear relationship between government debt and economic growth has tested between the GCC

countries that have different public debt to GDP ratios, taking into consideration other macroeconomic and debt variables. Most GCC policymakers try to reduce their country's public debt ratios thinking that high government debt would decrease long-run economic growth. However, the government debt ratio negative impact on long-run economic growth is considerably consistent with the neoclassical and endogenous growth models (Diamond 1965; Saint Paul 1992). Although, other beliefs that government debt affects the public expenditures productivity which could have a higher negative effect on economic growth (Teles and Cesar Mussolini 2014). In the same vein, high government debt could increase uncertainty of future financial repression (Cochrane 2011), and increase sovereign risk (Codogno et al. 2003), and it would lead to lower private investment and higher real interest rates (Tanzi and Chalk 2000; Laubach 2009). However, it is recommended to build up different scenarios or policies related to expansionary fiscal policies by avoiding economic recessions risks this would have to have a positive effect on both short and long-term economic growth (DeLong and Summers 2012).

In recent empirical study of Reinhart and Rogoff (2010) found that government debt and economic growth generally have a weak relationship for countries with government debt below 90% of GDP while government debt can have adverse consequences on economic growth for countries with debt-to-GDP above 90%. The 90% threshold value of Reinhart and Rogoff (2010) have attempted to provide a formal test by other studies, for example, Cecchetti et al. (2011b) employ the threshold regression of Hansen (2000) to estimate public debt thresholds. Cecchetti et al. (2011b) tested the effects of public debt on economic growth for 18 OECD countries from 1980 to 2010 using a new dataset on debt levels. Their results showed that government debt affect economic growth negatively when it is above 85% of GDP. However, Caner et al. (2010) using data for a larger set of countries from 1980 to 2008 based on threshold regression methods find that the critical level of debt where it starts to affect negatively the economic growth is at a threshold of 77% public debt-to-GDP ratio. In the same vein, Minea and Parent (2012) found that there



is a negative effect of public debt on economic growth when the level of debt to GDP is between 90% and 115% by employing the panel smooth threshold regression model.

The recent financial crisis and economic recession in 2008 has resulted in serious economic problems for many regions and countries, some countries succeed to make a smooth economic reform during the last few years. This crisis affects most of the major macroeconomic variables like the increasing unemployment rate and climbing budget deficits, while most remarkable variable was the public debt that rapidly increased since 2008 worldwide. The Middle East region, more precisely the GCC states, is one of the regions most affected by debt due to their economic structure as oil dependent integrating economies. This crisis had a great effect on most of the GCC overall economies, since their governments worked hardly to peruse a stable public finance sector. Therefore, it is important to study the GCC government debt and other macroeconomic indicators for economic growth.

In studying the impact of public debt on per capita GDP growth rate for the GCC countries in this paper, I start by providing a theoretical and empirical literature review on the impact of government debt on economic growth. Then, I introduce the econometric model as a multi-regression relationship for the economic growth and government debt including other control variables after presenting the European Union –GCC partnership. Finally, I conclude the article with section data description empirical findings.

## LITERATURE REVIEW

The empirical study on the government debt impact on economic growth is taking more attention mainly for the developed economies and much less for emergent economies. The theoretical literature focused on the negative relationship between the public debt to GDP ratio and GDP per capita growth rate (Saint-Paul 1992; Aizenman et al. 2007). Other growth models concluded that there could be a possible positive impact for the public debt on the economic growth during the different stages of debt structure, based on where the debt is financed (Aizenman et al. 2007)

or when it reached a certain limit in financing a productive public capital (Aschauer 2000). The empirical studies on the impact of the government debt on economic growth recently are recently focusing on developing countries, while studies over the Middle East region mainly the GCC countries are mainly absent.

Reinhart and Rogoff (2010), using simple correlation for a sample of 20 developed countries from 1790 to 2009, studied the changes of public debt and the long-term real GDP growth rate. They noticed that there is a negative impact on government debt to GDP ratios on the long-term growth for the debt to GDP ratios below a threshold of 90% while above this threshold the median for the economic growth rate decreases by one percent point. In a sample of emerging and advanced economies, Kumar and Woo (2010) showed a linear inverse relationship between initial debt and subsequent growth. For the whole sample of emerging and developed countries, they also find a significant negative effect of public debt on economic growth at high public debt levels above 90 per cent of GDP, which is an evidence of nonlinearity.

The *theoretical approaches* to the impact of government debt and economic growth directed more toward a negative sign. In a neoclassical setting, growth models showed a negative relationship between government debt and economic growth, which raised with public debt, issued to finance consumption or capital goods. Modigliani (1961), based on Meade (1958), stated that the government debt is a huge load for next generations due to the reduction on the flow of income from a private capital. Modigliani considered the gross load of government debt might be, when the debt is financing government expenditure that affect the real income of the next generations, mainly productive public capital formation. Several empirical and theoretical contributions studied on the impact of external debt on the economic growth and the reasons that rises this impact. In this context, Krugman (1988) mentioned the term of “debt overhang” which reflect the case of a country’s expectation for an external debt repayment ability that falls below the original value of debt. The theoretical model of Cohen’s (1993) confirm the existence of a non-linear foreign borrowing impact on investment and thus on economic growth. Continuously, *external debt* accumulation

can promote investment up to a certain threshold, while beyond this threshold the debt overhang will state showing negative pressure on investors as main capital providers.

The *empirical research* on the relationship between the public debt and the economic growth has mainly focused on the relationship between external public debt and economic growth in developing countries. Accordingly, several recent studies have shown a non-linear impact of external debt on economic growth, with deviated effects for high public debt ratios mainly after a certain threshold debt to GDP ratio. Pattillo et al. (2002) found a negative impact for external debt on per-capita GDP growth, for public debt levels above 35-40% of GDP as net present value. They used in their test a panel dataset of 93 developing countries from 1969 to 1998. Similarly, Clements et al. (2003), using a panel dataset of 55 low-income countries from 1970 to 1999, investigated the relationship between the external debt and per-capita GDP growth and found that the turning point is above 20-25% of GDP also as net present value of external debt. Smyth and Hsing (1995) and Cohen (1997), as empirical studies also found a non-linear effect of external debt on economic growth. However, Schclarek (2004), using a panel of 59 developing countries from 1970 to 2002 found a linear negative impact of external debt on per-capita growth.

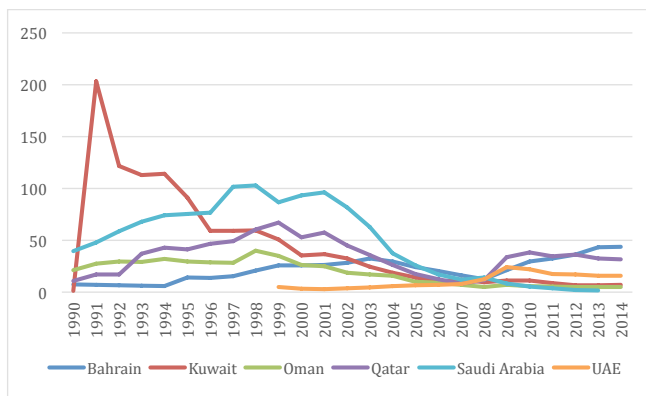
## RESEARCH METHODOLOGY

In this research the dataset used was build up using mainly WDI statistics. In total six countries were selected: Bahrain, Kuwait, Qatar, Oman, Saudi Arabia, and UAE. The criteria for country selection were the integration process that gather these countries and off course the availability of data.

Dataset gathered according to countries' specific factors beside the availability of data focusing on the debt variables, such as government debt to GDP and private debt. Other macroeconomic indicators selected according to the availability of data. These indicators are: trade openness, population growth, foreign direct investment that could have an important effect on economic growth, inflation rate due to the important influence

on the economic growth, current account balance that reflect on the country's deficit or surplus, and finally the national saving to GDP that could have a certain effect on investment and thus on economic growth. Data ranging from year 1990 until year 2014 used for the research – in total 23 yearly observations for each except for UAE 13 observations due to the availability of data mainly the trade openness (Figure 1). Therefore, we present a short overview about the GCC countries economic growth and the public debt for each and the EU-GCC partnership before we present and apply the model.

Figure 1: GCC countries public debt to GDP from 1990 to 2014



Source: IMF-WDI 1990-2014 country reports

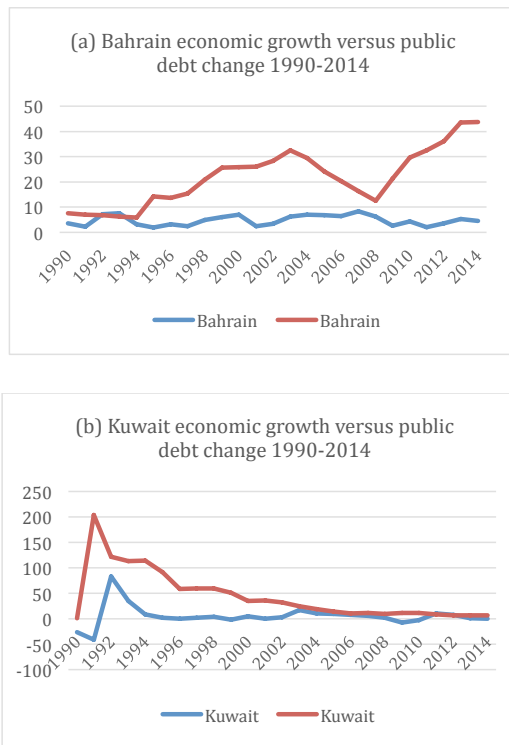
### ECONOMIC GROWTH AND PUBLIC DEBT IN GCC

The economic growth and the public debt for each of the GCC countries are not moving homogenously as shown in Figures 1. Bahrain economic growth was moving smoothly with highest rate in 2008 8% afterwards the public debt increased to reach 43% of GDP in 2014 (Figure 2, (a)). Kuwait showed a big decline by 26 and 41% in its economy accompanied with highest public debt level about 200% of GDP between 1990 and 1991, which is due to Kuwait Iraq war. Afterward, in 1992, the Kuwait economy started to recover and showed high economic growth by reaching 80%

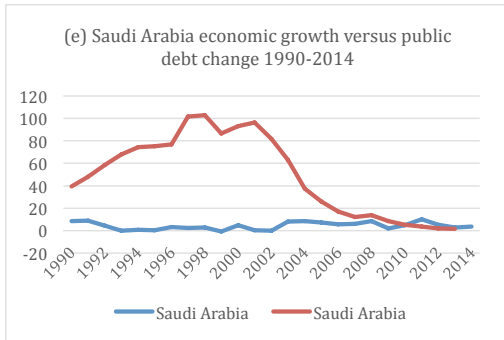
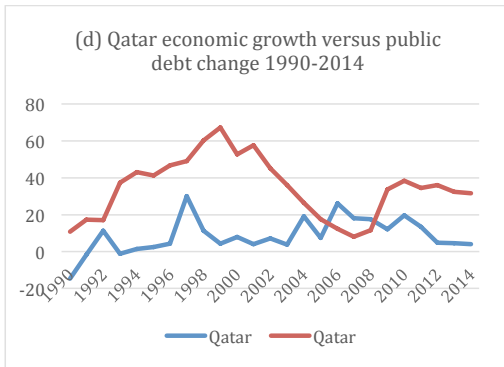
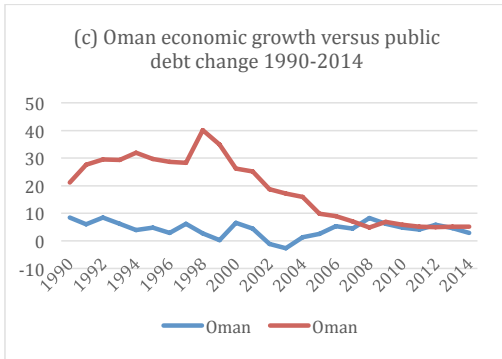


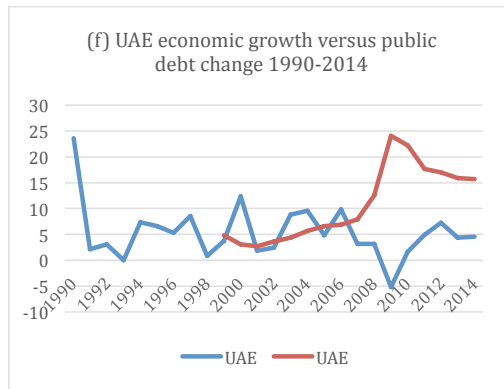
while public debt started to decrease and reached 6% of GDP in 2014 (Figure 2, (b)). Oman and Qatar public debt started to decline in 200 and their economic growth was moving smoothly for Oman and fluctuating for Qatar (Figure 2, (c), (d)). Saudi Arabia showed highest public debt rate in 1998 and 1999 then this level decreased gradually to reach 1.5% of GDP in 2013. This is the result of higher government revenue from oil production. The considered for United Arab Emirates was from 1999 to 2014 and because of this limitation in data availability no big variation either to the economic growth or for the public debt registered (figure 2, (e)). Therefore, we will test the factors affecting the economic growth for each country focusing mainly on the public debt.

Figure 2: GCC countries economic growth versus public debt to GDP









Source: IMF WDI 1990-2014 country reports

### EUROPEAN UNION – GCC PARTNERSHIP

In 1995, Barcelona Conference launched the Euro-Mediterranean Partnership. However, in 1990, European Union-GCC Cooperation Agreement presented three basic objectives: mainly European Union-GCC institutional framework, better economic cooperation, and push development in the GCC countries.

Recently, the GCC region has considered as the most stable regional organization based on multilateralism and cooperation. Facing the latest financial crisis Gulf sovereign wealth funds used to help in rescuing the European financial system. Therefore, a deep study for the European Union-GCC partnership must be launched for better economic growth for all parties. Accordingly, the European Union need to develop a strong strategy to encourage their bilateral relations with GCC member states and to support the GCC regional integration process based on their experience (Saleh 1999). Unfortunately, the European Union-GCC partnership is still weak due to different reasons: mainly due to their common interest in energy sector; to low degree of ‘Europeanization’ towards the GCC countries; and to lower degree of institutionalisation.



## MODEL AND DATA

The dataset used in the study collected mainly from IMF and WDI statistics. The dataset used for testing the impact of the GCC countries government debt on their economic growth composed mainly on the debt and non-debt variables. These variables selected based on their reliance and on the availability of yearly data like the public debt, private debt trade openness, national saving, the current account balance, Population growth, foreign direct investment, and finally Inflation rate due to their important influence on the economic growth. Data ranging from year 1990 until year 2014 used in this study in 24 yearly observations where it is limited due to the availability of data.

| 37 |

The research multiple linear regression equation model consists of one dependent and nine independent variables for the time period  $t$ , which equals 24 periods. The model equation is as follows:

$$gGDP_t = \alpha + \beta_1 PDBT_t + \beta_2 NSAV_t + \beta_3 PD_t + \beta_4 LN(GDP/Cap)_t + \beta_5 PP_t + \beta_6 FDI_t + \beta_7 OPN_t + \beta_8 CAB_t + \beta_9 INF_t + \varepsilon_t \quad (2)$$

Consider the following:  $\alpha$  is a constant variable;  $\beta$  is the regression coefficients;  $\varepsilon_t$  is the error term.

*The model dependent variable at the time  $t$  is:*  $gGDP_t$  represents the growth rate for the gross domestic product used as a percentage change for the GDP at current prices in US dollars;

*The model independent variables at the time  $t$  are:*

- $PDBT_t$  (General government gross debt to GDP) is defined as the total gross debt at the end of each year
- $NSAV_t$  (national saving to GDP) is calculated as total national and dividing it by GDP.
- $OPN_t$  (openness) has calculated as trade of goods and services divided by GDP.
- $PD_t$  (private debt) is the calculated as the domestic credit to private sector as percentage of GDP.
- $PP_t$  (population growth rate) has calculated as the annual percentage change in nation's population.
- $FDI_t$  (foreign direct investment) is the net inflow of foreign direct investment to GDP ratio



- CABt (Current Account Balance to GDP) is the current account balance divided by GDP.
- INFt (inflation average CPI) has calculated as the percentage change in the annual CPI.
- LN(GDP/Cap) (log of GDP per capita) is the natural logarithm for annual GDP per capita.

The main hypotheses to be tested in this model is that the government debt to GDP ratio has a significant positive effect in countries with relatively low ratio as it is studied and analyzed in the literature.

EMPIRICAL RESULTS

We test the impact of the 6 GCC countries’ government debt to GDP ratio on GDP per capita growth rate in a sample of 6 GCC countries, namely, Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and UAE. Basic data comes from IMF mainly WDI database covering primarily the period 1990–2014. Adjusted R square and Durbin-Watson test results for GCC countries registered respectively at Table 1.

Table 1: Econometric test results

	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	UAE
Durbin-Watson	1.859	1.505	2.709	2.123	2.132	1.962
R Square	.777	.613	.814	.688	.685	.908
Adjusted R Square	.673	.345	.685	.375	.482	.447
Sig.	.001	.085	.002	.128	.021	.383
F	7.465	2.288	6.305	2.200	3.376	1.972
Number of observations	23	23	23	19	24	13
Public debt mean	19.9267	48.2677	19.9007	37.7552	49.6872	12.308

Source: own calculation



Table 2: Significance level for each variable for each country

Variable	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	UAE
Public debt to GDP	.018	.419	.012	.618	.747	.855
national saving to GDP	.050	.023	.114	.785	.824	.781
population	.000	.348	.015	.193	.492	.646
trade to GDP	.003	.519	.366	.052	.356	.650
Domestic credit to private sector (% of GDP)	NA	.096	.008	.185	.018	.770
Current account balance to GDP	.724	.050	.311	.627	.468	.923
inflation average CPI	NA	.916	.150	.158	.457	.605
FDI net inflow	.178	.575	.277	.635	.729	.822
LNGdpPcap	.230	.377	.052	.041	.872	.839

Note: Bahrain For models with dependent variable GDP Per capita growth rate, the following variables are constants or have missing correlations: Domestic credit to private sector (% of GDP), inflation average. They deleted from the analysis.

Source: own calculation

Table 3: Beta coefficients

Variable	Bahrain	Kuwait	Oman	Qatar	Saudi Arabia	UAE
Public debt to GDP	.783	-.719	1.537	.253	-.254	.393
national saving to GDP	.893	-6.379	.822	.258	.442	-.799
population	-.642	-.336	-.417	-.844	.188	2.036
trade to GDP	.877	-.455	.227	-.825	-.663	-1.971
Domestic credit to private sector (% of GDP)	NA	-.947	-.750	-.709	-1.143	.343
Current account balance to GDP	.105	5.926	.329	-.315	1.086	-.348
inflation average CPI	NA	-.036	.264	.941	.221	-3.882
FDI net inflow	-.268	-.178	-.323	-.274	.149	.870
LNGdpPcap	-.368	.482	1.329	1.555	.136	-.240

Note: Bahrain For models with dependent variable GDP Per capita growth rate, the following variables are constants or have missing correlations: Domestic credit to private sector (% of GDP), inflation average. They deleted from the analysis.

Source: own calculation



Although all countries showed good to acceptable result, Kuwait and Qatar are with adjusted R square 0.345 and 0.375, which is an acceptable result. We notice accordingly that the independent variables used explained by 34.5% and 37.5% of GDP variance. The other countries adjusted R square results are around 0.5 and above. The adjusted R square for Oman and Bahrain equal to 0.685 and 0.673 (see Table 1).

The Durbin-Watson test values are within 1.2 and 2.5 in most cases except for Oman with 2.709, which shows no autocorrelation of residuals. In general, we can notice from the test results the model worked well in all tested countries (see Table 1).

The regression results differ from country to country as shown in table 1. Public debt has positively relationship to the economic growth for Bahrain, Oman, Qatar and UAE and the results showed significance just in Bahrain and Oman. The result showed a negative relation between the public debt and economic growth for Saudi Arabia and Kuwait and statistically insignificant. Bahrain, Oman, Qatar and UAE showed a low to medium public debt percentage to GDP while Kuwait and Saudi Arabia with mean 48.2 and 49.6 showed a relatively high public debt level (see table.1). These results reflect the theoretical finding for Reinhart and Rogoff (2010) that show a weak relationship between government debt and real GDP growth for debt to GDP ratios below 90% threshold. The  $\beta$  coefficient and significance results for each variable used and for each tested country shown in table 3. Private debt results showed a negative relation to economic growth to most of the tested countries except for UAE, which could be justified due to the small number of observation (13 observation), and the results for Bahrain was not registered to the missing correlation and the results were significantly related just in Oman and Saudi Arabia.

## CONCLUSION

The main finding of this paper shows that the different levels of the GCC countries' government debt have a significant impact on their economic growth, positively related for cases of low public debt to GDP and negatively related above certain

threshold. In the test cases, the results reflected the theoretical finding for Reinhart and Rogoff (2010) by taking the 90% of GDP as the threshold. The regression test results differ from country to country as shown in table 1. Public debt has positive relationship to the economic growth for Bahrain, Oman, Qatar and UAE and the results shows significance just for the cases of Bahrain and Oman. The result proves that the public debt in case of Saudi Arabia and Kuwait has a negative impact on their economic growth and is statistically insignificant. Bahrain, Oman, Qatar and UAE show a low to medium public debt percentage to GDP while Kuwait and Saudi Arabia with mean 48.2 and 49.6 expose a relatively high public debt level. In this research, trade openness, private debt, and the other tested variables have different effects on GDP, due to countries' characteristics variations. A recommendation stemming out of this research is that the European Union and GCC member states partnership becomes more pro-active and encourages a bilateral relationship that can provide better economic growth for the Euro-Mediterranean region.

## REFERENCES

- Abbas, A., N. Belhocine, A. El-Ganainy, and M. Horton. 2010. "A Historical Public Debt Database." Working paper No. 10/245. *International Monetary and Funds*. Accessed September 6, 2016. <https://www.imf.org/external/pubs/cat/longres.aspx?sk=24332.0>.
- Aizenman, J., K. Kletzer and B. Pinto. 2007. "Economic growth with constrains on tax revenues and public debt: implications for fiscal policy and cross-country differences." Working paper 12750. *The National Bureau of Economic Research*. Accessed September 6, 2016. [http://www.nber.org/authors/joshua\\_aizenman](http://www.nber.org/authors/joshua_aizenman).
- Aschauer, A. D. 2000. "Do states optimize? Public capital and economic growth." *The Annals of Regional Science* 34: 343–363.
- Baum, A., C. Checherita, and P. Rother. 2012. "Debt and growth: new evidence for the Euro area." Working paper No.1450. *European Central Bank*. Accessed October 10, 2016. <http://edz.bib.uni-mannheim.de/daten/edz-ki/ezb/12/w-paper/ecbwp1450.pdf>.
- Caner, M., T. Grennes, and F. Koehler-Geib. 2010. "Finding the tipping point – when sovereign debt turns bad." Working Paper



- No.5391. *World Bank Policy Research*. Accessed May 10 2016. Doi:10.1596/1813-9450-5391.
- Cecchetti, S., M. Mohanty and F. Zampolli. 2011. "The real effects of debt." Working Paper No 352. *Bank of International Settlement*. Accessed October 10, 2016. <http://www.bis.org/publ/work352.pdf>.
- Checherita, C., and P. Rother. 2012. "The impact of high and growing government debt on economic growth: an empirical investigation for the Euro area." *European Economic Review* 56:1392–1405.
- Clements, B., R. Bhattacharya, and T. Nguyen. 2003. "External debt, public investment, and growth in low-income countries." Working Paper 03/249. International Monetary and Funds. Accessed October 12, 2016. <http://www.imf.org/external/pubs/cat/longres.aspx?sk=17074>.
- Cochrane, J. H. 2011. "Understanding policy in the great recession: some unpleasant fiscal arithmetic." *European economic review* 55 (1): 2–30.
- Codogno, L., C. Favero and A. Missale. 2003. "Yield spreads on EMU government bonds." *Economic Policy* 37: 503–532.
- Cohen, D. 1993. "Low Investment and Large LDC Debt in the 1980s." *American Economic Review* 83/ 3.
- Cohen, D. 1997. "Growth and external debt: a new perspective on the African and Latin American tragedies." Discussion paper No. 1753. *Centre for Economic Policy Research*. Accessed October 10, 2016. <https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp1237.pdf>.
- Cordella, T., L. Ricci, and M. Ruiz-Arranz. 2010. "Debt overhang or debt irrelevance?" Staff papers No.05/223. *International Monetary and Funds*. Accessed May 10, 2016. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.101.3406&rep=rep1&type=pdf>.
- Diamond, P. 1965. "National debt in a neoclassical growth model." *The American Economic Review* 55(1): 1126–1150.
- Fosu, A. K. 2010. "The External Debt Burden and Economic Growth in the 1980 s: Evidence from Sub-Saharan Africa." *Canadian Journal of Development Studies* 20 (2): 307–18.
- Fouad, M., W. Maliszewski, M. Hommes, H. Morsy, M. Petri, and L. Soderling. 2007. "Public Debt and Fiscal Vulnerability in the Middle East." Working Paper 07/12. *International Monetary Fund*. Accessed May 10, 2016. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.531.9010&rep=rep1&type=pdf>.
- Hansen, B. 1999. "Threshold effects in non-dynamic panels: estimation, testing and inference." *Economic Review* 83 (3):437–49.



- International Monetary Fund. 2015. *World Economic Outlook Database*. Washington, DC. Accessed June 5, 2016. <https://www.imf.org/external/pubs/ft/weo/2015/02/weodata/index.aspx>.
- Krugman, P. 1988. "Financing vs. forgiving a debt overhang: Some analytical issues." Working paper. *The National Bureau of Economic Research* 29: 253-268. Accessed June 5, 2016. <http://www.nber.org/papers/w2486>.
- Kumar, M., and J. Woo. 2010. "Public debt and growth." Working paper 10/174. *International Monetary Fund*. Accessed June 5, 2016. <http://www.imf.org/external/pubs/cat/longres.aspx?sk=24080.0>.
- Laubach, T. 2009. "New evidence on the interest rate effects of budget deficits and debt." *Journal of European Economic Association* 7(4): 858-885.
- Meade, J. E. 1958. "Is the National Debt a Burden?" *Oxford Economic Papers* 10/2: 163-183.
- Minea, A., and A. Parent. 2012. "Is High Public Debt Always Harmful to Economic Growth? Reinhart and Rogoff and some complex nonlinearities." CERDI Working Papers, no. 201218. Accessed May 5, 2016. <http://publi.cerdi.org/ed/2012/2012.18.pdf>.
- Modigliani, F. 1961. "Long-Run Implications of Alternative Fiscal Policies and the Burden of the National Debt." *Economic Journal* 71(284): 730-755.
- Pattillo, C., H. Poirson, and L. Ricci. 2002. "External debt and growth." Working paper 02/69. *International Monetary Fund*. Accessed May 5, 2016. <https://www.imf.org/external/pubs/ft/wp/2002/wp0269.pdf>.
- Pescatori, A., D. Sandri, and J. Simon. 2014. "Debt and Growth: Is There a Magic Threshold?" Working papers No.14/34. *International Monetary Fund*. Accessed May 10, 2016. <https://www.imf.org/external/pubs/ft/wp/2014/wp1434.pdf>.
- Reinhart, C., and K. Rogoff. 2009. "The aftermath of financial crises." Working paper w14656. *The National Bureau of Economic Research*. Accessed May 5, 2016. <http://www.nber.org/papers/w14656>.
- Reinhart, C., and K. Rogoff. 2010. "Growth in a time of debt" *The American Economic Review*. 100(2): 573-578.
- Saint Paul, G. 1992. "Fiscal Policy in an endogenous growth model." *The Quarterly Journal of Economics* 107: 1243-1257.
- Saleh, N. 1999. "The European Union and the Gulf States: A Growing Partnership." *Middle East Policy Council Journal* 7(1): 13-20.
- Schclarek, A. 2004. "Debt and economic growth in developing industrial countries." Working paper No.2003/20. Lund University.

- Smyth, D., and Y. Hsing. 1995. "In search of an optimal debt ratio for economic growth." *Contemporary Economic Policy* 13: 51–59.
- Teles, V. K., and C. C. Mussolini. 2014. "Public debt and the limits of fiscal policy to increase economic growth." *European Economic Review* 66(1): 1–15.
- Tanzi, V., and N. Chalk. 2000. "Impact of large public debt on growth in the EU: a discussion of potential channels." *European Economic review* 2(4): 23–43.

