Public Spending and Private Investment: Does the Relationship Affect Accounting Services' Demand in Nigeria?

Gbadebo SALAKO

Department of Economics, Emmanuel Alyande University of Education, Oyo, Oyo State, Nigeria
salakog@eauedoyo.edu.ng;

Abstract

This paper examined the relationship between public spending and private investment as it affected the demand for accounting services in Nigeria from 1980 to 2022. Data used in the study were obtained from Central Bank of Nigeria Data & Statistics (2023). Stationarity property of the variables was examined using Augumeted-Dickey-Fuller and Philip-Perron unit root tests. Co-integration test revealed the evidence of long-run relationship among the variables after which vector error correction method of estimation was employed. The results showed that public spending on economic services significantly crowded out private investment, while public spending on administration boosted private investment, irrespective of being capital or recurrent. Contrarily, public spending on transfer services significantly influenced private investment while its recurrent counterpart crowded out private investment insignificantly. Therefore, growth in demand for accounting services could not be pinned down to relationship between public spending and private investment in Nigeria.

Keywords: accounting services, Nigeria, private investment, public spending

Introduction

Growth in private investment, either in number or size, is a vital channel for ensuring credible rise in accounting services' demand (Adeyemi, Obah & Udofia, 2015). On the other hand, studies have documented the empirical evidence that public spending is one of the key determinants of private investment's growth (Akinlo & Oyeleke, 2018; Laua, Tanb & Liew 2019; Penzin, Salisu & Akanegbu 2022). However, from theoretical view point, expansionary public spending crowds out private businesses through the increase in interest rates, while contractionary public spending crowds in private enterprise (Gunalp & Dincer, 2005; Oyeleke, 2021). Therefore, the negative or positive impact of public spending on private enterprise becomes crucial in the accounting services' demand's determination (Gunalp & Dincer, 2005).

Compared to a large empirical study on the nexus between public spending and economic growth, the relationship between public spending and private investment which has spillover effect on the demand for accounting services has received much less consideration in economic literature. Similarly, several studies in economic literature have investigated the connection between public spending and private investment in Nigeria without any recourse to its implication on accounting services' demand. However, in the accounting literature, an academic debate is being intensified on whether public spending spurs or retards accounting services' demand directly or through private investment mechanism (see Nguyen & Nguyen, 2018; Borkvoic & Tabak, 2018). For private businesses to thrive, which has capacities to influence the growth of accounting services' demand, a developed and functional financial market should not be impeded by incessant government borrowings (Ragot & Pinois 2019). Thus, public deficits that is not financed through borrowings from financial market plays a key role to promote private investment, while a protracted increase in public spending has varied dampening effects on the progress of the private investment (Olukayode, 2009). Furthermore, in the literature, growth in private investment has been a key driver in ensuring increase in demand in accounting services such as auditing, taxation, financial consultancy, financial reporting and so on (Onyekwelu & Ubesie, 2016).

In Nigeria, studies have empirically documented that perpetual increase in public spending in the economy has been crowding out private enterprise (Olaifa & Benjamin, 2019; Akinlo & Oyeleke, 2018). Similarly, Oyeleke (2021) and Oyeleke and Orisadare (2018) argued that the number of private investments (manufacturing companies) has been dwindling in Nigeria due to persistent increase in price level occasioned by public debts finances. In contrast, a plethora empirical evidence has revealed that public spending on the development of infrastructure generates growth of private businesses by creating better conditions to do businesses (Edame & Fonta 2014; Chijioke & Amadi 2020; Fasoranti, 2012). Thus, empirical literature on this issue is inconclusive. As argued by Afonso and Augyn, (2019), these contending results could be due to the empirical methods employed, computability power of data, modelling or specification issues. Thus, this study seeks to investigate the relationship between public spending and private investment as it affects the demand for accounting services in Nigeria.

Literature Review

Several studies have investigated the effects of public spending on private enterprise in Nigeria and some other countries of the world. However, the major shortcoming that mars all

of these existing studies is the fact that none of them has reported the effect of such relationship on the demand for accounting services, particularly in Nigeria. For instance, Nguyen and

Nguyen, (2018) examined the effect of public savings on private businesses and GDP of 22 industries in Vietnam from 1990-2016. Applying PVAR and GMM models, the findings revealed that public investment has positive effect, like GDP, on industries in the long run, while state sector spending motivated GDP in the short run. Nguyen and Trinh (2018) examined the impact of state outlay on private enterprise in Vietnam. Using data from 1990 to 2016, and ARDL as methodology, the study found that public savings did not produce the desired result of improving private businesses both in the short and long run in Vietnam.

Afonso and Aubyn (2019) examined the macroeconomic effects of public and private savings in 17 OECD economies, using VAR method from 1960-2014. The results showed that state outlay positively influences most OECD economies but counter evidences were found for UK, Finland, Sweden Canada and Japan. Borkovic and Tabak, (2018) examined the nexus between public spending and the productivity of Croatian firms. The findings revealed that public savings have a positive and significant impact on total factor productivity at firm level, though the results were positive for private sector companies alone. Nonetheless, the findings were contrary to state-owned firms in Croatia. Olaifa and Benjamin (2019) analysed the connection between state capital spending and private enterprise in Nigeria from 1981 to 2016. The study disaggregated state capital spending into different components. Johanson co-integration test result showed there was equilibrium association between the variables of interest. Also, the findings showed that state capital spending on physical assets and defence deprived growth in private ventures, but public capital expenditure on human capital and public debt servicing promoted private businesses in Nigeria.

Akinlo and Oyeleke (2018) examined the effect of public spending on private businesses in Nigeria from 1980-2016. Using error correction technique to analyse the nexus between the two variables, the findings showed that there was equilibrium nexus between the variables. Also, the study found that interest rate and inflation have adverse but significant influence on private businesses in the long term. However, public spending has positive and insignificant influence on private ventures in the long term. Okpara and Nwaoha (2010) explored nexus between state expenses, money supply, prices and GDP in Nigeria. Using the two stage least squares method, there was no evidence of equilibrium between the variables. However, the results revealed that, public spending did not cause the growth of GDP in the economy. In another development, Foye (2014) investigated the influence of public capital spending on private outlays in Nigeria. Using ordinary least squares method, the outcomes showed that current public capital spending was negatively related to private outlays.

Udoh (2011) explored the link between public spending, private venture and agricultural output growth in Nigeria from 1970-2008. Autoregressive distributed lag (ARDL) modelling approach was used to analyse both short-term and long-term effect of public spending, private venture on agricultural output in Nigeria. The findings showed that increase in public spending has a positive influence on the growth of the agricultural output. However, foreign investment has insignificant impact in the short run. Inuwa (2012) studied the association between public spending and GDP in Nigeria over the period (1961-2010). The study employed the ARDL Bounds Test approach to co-integration based on unrestricted

Error Correction Model and Pair wise Granger Causality tests. Although there existed no long-run association between public spending and GDP, however, the causality results revealed that capital spending of government granger caused GDP, while no causal nexus ran between state recurrent spending and GDP.

Methodology

Analytical Model: Adopting Akinlo and Oyeleke (2018)'s model, this study used Error Correction Method (ECM) to examine the effect of government expenditure on private investment in Nigeria from 1980 to 2022, and its implication for accounting services' demand. To start with, this study specified the relationship between government expenditure and private investment as;

PRI = (GEXP) (1)

Where PRI stands for private investment and GEXP represented government expenditure.

To fully capture the effect of government expenditure on private investment, the variable of government expenditure (GEXP) was disaggregated into current and capital spending. Therefore, equation (1) was presented as follow;

PRI = (ADMC, SOCC, ECOC, TRANSC, ADMR, ECOR, SOCR, TRANSR) (2)

ADMC……Capital Expenditure on Administration
ECOC…….Capital Expenditure on Economic Services
SOCC……Capital Expenditure on Social and Community Services
TRANSC…Capital Expenditure on Transfer
ADMR……Recurrent Expenditure on Administration
ECOR……Recurrent Expenditure on Economic Services
SOCR……Recurrent Expenditure on Social and Community Services
TRANSR…Recurrent Expenditure on Transfer

Presenting equation (2) in econometric model, the equation became;

$$PRI_t = a_0 + a_1 admc_t + a_2 ecoc_t + a_3 socc_t + a_4 transc_{t_2} + a_5\, gdp_t + \varepsilon_t \quad (3)$$

$$PRI_t = b_0 + b_1 admr_t + b_2 ecor_t + b_3 socr_t + b_4 transr_{t_2} + b_5\, gdp_t + \varepsilon_t \quad (4)$$

Where a_0 & b_0= intercept in the two models and
$a_1 .. a_5$&$b_1 .. b_5$ = independent variables
PRI_t = private investment was the dependent variable
$admc_t$= capital expenditure components on Administrative services
$ecoc_{t_t}$ = capital expenditure on economic services
$ecoc_{t_t}$= capital expenditure components on social services
$transc_{t_t}$= capital expenditure components on Transfer services

gdp_t= gross domestic product which was used to capture the effect of demand on private investment.

Similarly in equation (4).

PRI_t = private investment

$admr_t$= recurrent expenditure components on Administrative services

$ecor_t$ = recurrent expenditure on economic services

$socr_t$= recurrent expenditure components on social services

$transr_t$=recurrent expenditure components on Transfer services

gdp_t= gross domestic product which is used to capture the effect of demand on private investment.

Technique of Estimation

This study investigated the effect of government expenditure on private investment in Nigeria from 1980 to 2022 with the primary aim of determining its implication for accounting services' demand. Given this specific objective of the study, therefore, the study used Vector Error Correction Method (VECM) econometric technique to analyse the data. As the name suggests, VECM has more advantages over other methods as it combines short-run with error correction mechanism which reveals the speed of adjustment, especially when co-integration is established irrespective of the orders of integration between the variables. It can also be used when small amount of data is involved ().

Unit Root Test

It is imperative to test the variables for a unit root (stationarity). Therefore, Augumeted Dickey Fuller test and Philip Perron unit root tests were carried out on all the variables. The result of unit root tests showed that the variables were integrated of different orders. Under the capital expenditure components of government spending, expenditure on administration and social services were integrated of order zero that is I(0) while other variables in the category were integrated of order one I(1).The result from Philips Perron unit root test also corroborated the ADF's excerpt for expenditure on social services that was integrated of order zero I(0). Similarly, unit root tests performed on recurrent expenditure components of government spending showed that the variables were integrated of different orders. In this category, all the variables were integrated of order zero I(0) excerpt government spending on social services.

Table 1. Unit Root Tests Results

Variables	ADF			PP			Degree of integration	
	Level	1st diff.		Level	1st diff.		ADF	PP
ADMC	-5.239		-	-6.224		-	I(0)	I(0)
ECOC	1.847	-4.392	-	0.843	-7.890	-	I(1)	I(1)
SOCC	0.922	-4.069	-	0.787	-7.281	-	I(0)	I(1)
TRANSC	0.914	-5.408	-	-1.325	-6.436	-	I(1)	I(1)
ADMR	-8.846		-	-13.885		-	I(0)	I(0)
ECOR	-6.769		-	2.596	-6.018	-	I(0)	I(1)

SOCR	-0.597	-4.149	-	2.540	-6.098	-	I(1)	I(1)
TRANSR	-8.922		-	0.662	-5.454	-	I(0)	I(1)
PRIVATE	-7.187		-	-7.206		-	I(0)	I(0)

Co-integration Test

Having observed mixed orders of integration in all the variables, however, long run relationship can still exist in the model (Asteriou & Hall, 2007). Therefore, Johansen co-integration test was carried out to determine whether there was at least one linear combination of these variables. To avoid multicollinearity, capital/recurrent dichotomy was maintained for co-integration test and model estimations. Table 2a and Table 2b, showed the results of co-integration test. The results in Table 2a which presented capital expenditure components of government spending and private investment showed that the null hypothesis of no co-integration could be rejected as there were two co-integrating equations at 5% level of significance. Similarly, the results in Table 2b presented recurrent expenditure components of government spending and private investment also showed that the null hypothesis of no co-integration could be rejected at 5% significance level.

Table 2a Cointegration Test Results

Series: ADMC ECOC SOCC TRANSC PRIVATE
Lags interval (in first differences): 1 to 1

No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.975	271.118	69.819	0.000
At most 1 *	0.961	141.317	47.856	0.000
At most 2	0.448	27.479	29.797	0.090
At most 3	0.131	6.708	15.495	0.611
At most 4	0.050	1.798	3.841	0.180

* Denotes rejection of the hypothesis at the 0.01 level of significance
Trace test indicates 2cointegrating eqn(s) at the 0.05 level
**MacKinnon-Haug-Michelis (1999)
pvalues

Table 2b. **Cointegration Test Results**

Series: PRIVATE ADMR ECOR SOCR TRANSR
Lags interval (in first differences): 1 to 1

No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.
None *	0.945	258.424	69.819	0.000

At most 1 *	0.927	156.929	47.856	0.000
At most 2 *	0.721	65.490	29.797	0.000
At most 3 *	0.443	20.833	15.495	0.007
At most 4	0.009	0.327	3.841	0.567

* Denotes rejection of the hypothesis at the 0.01 level of significance
Trace test indicates 4 cointegrating eqn(s) at the 0.01 level
**MacKinnon-Haug-Michelis (1999) p-values

Results and Discussion

Having examined the econometric properties of the data employed in this model, the co-integration information provided therein were used to generate a set of Vector Error Correction Models (VECM). Table 3 presents the results of Vector Error Correction Model capturing the behaviour of government capital expenditure spending components on private investment. The coefficients of the relevant variables indicated the magnitude of elasticity obtainable in private investment as a result of percent change in the variable while coefficient of the ECM showed the speed of adjustment back to long run relationship among the variables. The results revealed that government capital expenditure on administration (0.674), social services (0.087) and transfer (0.115) have positive impact on private investment. However, the impact of administration and transfer were statistically significant at 5%, while that of social service failed to show any statistical significance at any level. To the contrary, the results revealed that that government capital expenditure on economic services (-4.583) has negative impact on private investment at 1% significant level.

The import from this was that increase in government capital expenditure on administration and transfer services brought about an increase in private investment which had spill over effect on accounting services during the period under study. Meanwhile, similar increase in government expenditure on economic services results to decrease in private investment. This is similar to the result of Ekpo (2015); Erdar (2014); Ibraheem (2008) which investigated the link between disaggregated measure of government expenditure and private investment with the conclusion that different measure of government expenditure has different implication on private investment.

Similarly, Table 4 presents the result of VEC model that captured the behaviour of government's recurrent expenditure components on private investment. The results showed that government recurrent expenditure on administration and social services have positive impact on private investment while that of economic services and transfer have negative impact on private investment but only that of administration and economic services were statistically significant.

Table 3 VECM Results (PRI as Dept var) [Capital]

Model 1 / Variable	Δ(lnADMC)	Δ(lnECOC)	Δ(lnSOCC)	Δ(lnTRANSC)
C	309.823	270.940*	0.934	229.293*
	[1.426]	[6.208]	[1.467]	[3.695]
Δ(ADMC(-1))	0.674*	-0.062*	0.087*	0.115**
	[6.875]	[-3.762]	[3.430]	[2.865]
Δ(lnECOC(-1))	-4.583*			-0.215
	[4.150]			[-0.856]
Δ(lnECOC(-2))		0.103		0.888*
		[0.624]		[2.519]
Δ(lnSOCC(-1))	28.565*		0.672*	-4.611
	[3.743]		[3.088]	[-0.217]
Δ(lnSOCC(-2))	-223.911*	-53.123*		
	[-2.691]	[-3.174]		
Δ(lnTRANSC(-1))	-5.824*	-1.501		-1.295*
	[-5.324]	[-6.837]		[-4.148]
Δ(lnTRANSC(-2))	-0.076	-1.616		-1.711*
	[-0.055]	[-5.693]		[-4.238]
ECM_{-1}	-0.018	-0.017*	-0.324*	-0.013*
	[-1.755]	[-8.339]	[-4.024]	[-4.591]
R-squared	0.975	0.853	0.853	0.645
Adj. R-squared	0.938	0.790	0.789	0.492
F-statistic	85.408	13.555	13.458	4.254

*Note. t statistics in parentheses. *, **and *** denotes significance at 10%, 5% and 1% level*
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Table 4. VECM Results (PRI as dept variable) [Recurrent]

Model 2 / Variable	Δ(lnADMC)	Δ(lnECOC)	Δ(lnSOCC)	Δ(lnTRANSC)
C	0.2227	0.26721*	0.789	10.987*
	[0.002]	[4.319]	[1.176]	[5.697]

Δ(ADMC(-1))	0.873*	0.097		0.115*
	[4.921]	[3.7351]		[2.917]
Δ(lnECOC(-1))			3.597*	-0.215
	[-3.179]		[5.230]	[-0.856]
Δ(lnECOC(-2))	-53.143*	1.103*		0.847*
		[4.661]		[2.519]
Δ(lnSOCC(-1))	278.236*		0.671*	-4.611
	[3.746]		[3.088]	[-0.217]
Δ(lnSOCC(-2))		-223.910*		
		[-2.691]		
Δ(lnTRANSC(-1))	-5.825*	-1.501		-1.295*
	[-5.327]	[-6.835]		[-4.148]
Δ(lnTRANSC(-2))	-0.076	-1.616		-1.711*
	[-0.054]	[-5.692]		[-4.238]
ECM_{-1}	-0.018	-0.327*	7.20E	-0.012*
	[-0.752]	[-8.309]	[0.024]	[-4.591]
R-squared	0.883	0.953	0.886	0.975
Adj. R-squared	0.961	0.697	0.789	0.492
F-statistic	71.728	12.975	25.476	4.826

*Note. t statistics in parentheses. *, **and *** denotes significance at 10%, 5% and 1% level respectively*

The import from the analysis was that not all components of government expenditure crowded out private investment. Basically, government expenditure on economic services, irrespective of its nature, crowded out private investment while government expenditure on administration and social services supported private investment regardless of whether it was capital or recurrent in nature. However, expenditure on administration showed greater relevance for policy consideration. Additionally, the results in the two models showed that coefficients of the ECM terms were statistically significant, a development that confirmed the existence of long run relationship among the variables. The long run relationship between private investment and the explanatory variables as captured by the Error Correction Mechanism in the model showed that the inherent error in the model was corrected by 12% and 32% for capital and recurrent expenditure components respectively.

Conclusion

This study examined the relationship between public spending and private investment in Nigeria from 1980 to 2022, holding the mind-set that accounting services' demand was consequently impacted. To achieve the objective of the study, econometric techniques involving Johansen co-integration test and Error Correction Mechanism were employed. Also, to ensure the category of spending that comparatively produced more effect on private investment in Nigeria, total public spending was decomposed to capital spending and recurrent spending. From the analysis, co-integration test produced the evidence of long run relationship among private investment, public capital spending on administrative services, economic services, social services, transfer services and gross domestic product in one hand, and private investment and public recurrent spending on administrative services, economic services, social services, transfer services and gross domestic product.

The results from Vector Error Correction Method (VECM) revealed that components of public spending did not influence private investment with the same magnitude and direction. It was clearly observed that public spending on economic services crowded out private investment, while public spending on administration complemented private investment irrespective of whether capital or recurrent. Also, public spending on social services has insignificant positive impact on private investment irrespective of its nature. To the contrary, public capital spending on transfer services significantly complemented private investment while its recurrent counterpart substitutes private investment insignificantly.

More importantly, the study empirically established that some components of public spending substituted (crowd out) private investment while other complemented (crowd in) it. Specifically, public spending on economic services regardless of it forms crowds out private investment while public spending on administrative services crowded in private investment. Therefore, whether public spending on social or transfer services, private investment was

crowded out by public spending in Nigeria within the period covered by this study. Therefore, the study concluded that growth in public spending produced mixed effects on private investment in Nigeria, hence growth of accounting services could not be pinned down to relationship between public spending and private investment in Nigeria.

References

Adeyemi, S., Obah, S. & Udofia, I. T. (2015). Determinants of demand and supply of accounting and audit services in SMEs: Evidence from Nigeria. *Journal of Accounting and Management Information Systems*, 14, 546-574

Afonso, A. & Augyn, M. (2019). Economic growth, public, and private investment returns in 17 OECD economies. *Portuguese Economic Journal*, 18, 47-65. doi.org/10.1007/s10258-018-0143-7

Akinlo, T & Oyeleke, O. J. (2018). Effects of government expenditure on private investment in Nigerian economy (1980-2016). *Emerging Economy Studies*, 4(2), 1-10

Asteriou, D. & Hall, S. (2007). Applied Econometrics: A Modern Approach. Palgrave Macmillan, New York.

Borkvoic, S. & Tabak, P. (2018). Public investment and corporate productivity in Croatia. *Public Sector Economics*, 42(2), 171-186

Chijioke, A. K. & Amadi, A. I. (2020). Government expenditure on infrastructure as a driver for economic growth in Nigeria. *Journal of International Business Research and Marketing*, 5(2), 20-26 http://dx.doi.org/10.18775/jibrm.1849-8558.2015.52.3004

Edame, G. E. & Fonta, W. M. (2014). The impact of government expenditure on infrastructure in Nigeria: A co-integration & error correction specification. *International Journal of African and Asian Studies*, 3, 50-63.

Ekpo, A. H. (2015). Issues in sub-national borrowing in Nigeria (English). Washington, D. C. WorldBankGrouphttp://documents.worldbank.org/curated/en/768911468098970642/issues-in-sub-national-borrowing-in-Nigeria

Erdal, K. (2004). A disaggregated analysis of government expenditures and private investment in Turkey. *Journal of Economic Cooperation* 25(2), 131-144.

Fasoranti, M. M. (2012). The effect of government expenditure on infrastructure on the growth of the Nigerian economy, 1977-2009. *International Journal of Economics and Financial*, 2(4),513-518.

Foye, V. O. (2014). The impact of public capital spending on private investment in Nigeria. *Journal of International Academic Research for Multidisciplinary*, 2(2), 86-96.

Gunalp, B. & Dincer, O. C. (2005). The optimal government size in transition countries. Working Paper Series 55.

Ibraheem, M. H. (2008). Components of public expenditures and private investment in Malaysia. *Journal of Economic Cooperation*, 29(4), 1-16.

Inuwa, N. (2012). Government expenditure and economic growth in Nigeria. *Academic Research International* 2(3), 56-63.

Laua, S. Y., Tanb, A. T. & Liew, C. Y. (2019). The asymmetric link between public debt and private investment in Malaysia. *Malaysian Journal of Economic Studies*, 56(2), 327–342.

Nguyen, C. T. & Nguyen, A. P. (2018). Effect of public investment on private investment and economic growth: evidence from Vietnam by economic industries. *Applied Economics and Finance***,** 5(2), 95-110.

Nguyen, C. T. & Trinh, L.T. (2018). Effect of public investment on private investment and economic growth: evidence from Vietnam. *Journal of Asian Business and Economic Studies*, 25(1), 15-32. DOI 10.1108/JABES-04-2018-0003

Okpara, G. C. & Nwaoha, W. C. (2010). Government Expenditure, Money supply, Prices and output relationship in Nigeria: An econometric analysis. *International Research Journal of Finance and Economics*, 54, 125-133.

Olaifa, F. G. & Benjamin, O. O. (2020). Government capital expenditure and private sector investment in Nigeria: Co-integration regression and Toda-Yamamoto causality analysis. *Advanced Journal of Social Science*, 6(1), 71-82. https://doi.org/10.21467/ajss.6.1.71-82

Olukayode, M. E. (2009). Does Government Spending Spur Economic Growth in Nigeria? *MPRA paper* No. 17941

Onyekwelu, U. L. & Ubesie, M. C. (2016). Relevance of international financial reporting standards on accounting quality in Nigeria. *Research Journal of Finance and Accounting,* 7(15), 39-48.

Oyeleke, O. J. (2021). Frequency domain approach to causality among fiscal deficit, interest rates and inflation in Nigeria. *Ilorin Journal of economic policy*, 8(1), 46-59.

Oyeleke, O. J. (2021). On the non-linear relationship between fiscal deficit and inflation: The Nigerian experience. Nigeria. *International Advances in Economic Research*, 27, 105-117. https://doi.org/10.1007/s11294-021-09822-7

Oyeleke, O. J., & Orisadare, M. A. (2018). Relative importance of public debts and money growth on inflation in Nigeria. *International Journal of Economics and Finance*, 10(7), 99–107

Penzin, D. J., Salisu,A. & Akanegbu, B. N. (2022). A note on public debt–private investment nexus in emerging economies. *Bulletin of Monetary Economics and Banking, 25(1), 25 – 36.*

Ragot, X. & Pinois, R. (2019). Public debt and the world financial market. *Revue de l'OFCE*, 164, 165-190