Determinants of public debt in southern mediterranean countries and european countries: a tale of two regions

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Abstract

The objective of this paper is to identify the determinants of public debt in the southern Mediterranean countries and the European countries for the period 1990–2017 by using dynamic panel data model estimated by Generalized Method of Moments (GMM). In fact, empirical evidence indicates a significant positive impact of interest rates and unemployment rate on public debt and significant negative impact of inflation and real exchange rate on public debt. In European countries, inflation and interest rate has a negative and statistically significant effect on public debt, however, the domestic investment, real exchange rate and foreign direct investment has a negative and statistically significant effect on public debt.

Key words: Inflation, Domestic investment, exchange rate, southern Mediterranean countries, European countries.

JEL Classifications : E32, E31, E43, E62.

Introduction

Over the past two decades, in European countries the public debt issues have become again a major academic, policy-maker and journalist topic of discussion, which has suffered three major crashes since its conformation, in the last two decades: the subprime mortgage crisis, the sovereign debt crisis and recently the Covid-19 pandemic. Undoubtedly, this current health crisis has generated a brutal stumbling block in the large recovery from the last sovereign debt crisis (2009–2012). The European countries economies did not finish recovering from it, and they have to face again high public budget deficits in 2020 and unprecedented growth in public debts derived from the pandemic, the obligatory two–three months of quarantine, social immobilization, closing borders, reduction of international commerce and huge unemployment rates. Indeed, the main aim of this working research paper is to identify the determinant factors of the public debt,

in order to assess to what extent these factors can influence their sustainability amid the Covid-19 pandemic. In addition, this crisis has negative effects on the internal policies of the countries; the most significant of these effects are mismanagement of public debt, moving resource allocation, and lack of rigorous financial discipline. In the long run the economic and financial weakness has led in the long run to excess of debt over the debt service capacity of the highly indebted poor countries. In light of this event, European sovereign debt and financial crises are more than ever at the heart of the debate. Nevertheless, the exchange rate and interest rate volatility is linked to the deterioration of the public accounts linked to both increased government spending and declining tax revenues. The classical theories of the macroeconomics support the view that exchange rate, interest rate and public debt are closely linked.

The beginning of the 1980s was marked by falling public revenues and an excessive increase in external debt. Moreover, the international economic context played an important role in the worsening crisis (exchange rate fluctuations, lower prices of raw materials and deterioration of the terms of trade, rising interest rates and declining lending). Economic reforms calling into question the intervention of the State were implemented through the structural regulation and liberalization of the economy to guide the macroeconomic stabilization policy in order to achieve an efficient management of public finances. These reforms aim to create a new dynamic that can reduce economic and financial dependence on the outside world.

Regarding the linkage between the domestic investment, foreign direct investment, interest rate, inflation and public debt, where the hypothesis assumes that these determinants have a positive and statistically significant effect on public debt. However, the alternative hypothesis assumes these determinants have a negative and statistically significant effect on public debt. Due to the importance of these determinants understanding of these controversial nexuses seen as a priority in the different countries. For this reason, i selected two panels of countries to highlight a comparative study.

Our objective in this paper is to investigate the determinants of public debt in southern Mediterranean countries and European countries. For this purpose, we used a dynamic panel data model. To the best of our knowledge, none of the previous studies deal with this question in European countries and Southern Mediterranean countries context through the use of the GMM technique.

This paper well be organized in to three sections. Section one presents a literature review. The second section discusses the methodology and the econometric specification. The section third reports and discusses the results and finally presents the conclusion and the implications.

2. Litterature review

The subject of the effect of economic growth and public debt has been well-documented in the economic public literature. Different studies have focused on different countries, time periods, proxy variables and the different econometric methodologies used. The empirical outcomes of these studies have been varied and sometimes conflicting.

The link between public debt and inflation, which occupies an important place in the present research, generally is used to lead debates on the determinants of public debt. In a more recent study focus on Tunisia, Abdelhafidh S (2013) studied the relationship between external debt and economic growth for the period 1970-2010 using the Autoregressive distributed lag model (ARDL). Their results showed that external debt is negatively and insignificantly related to economic growth. In addition, this author showed there exist several factors influencing the economic growth such as corruption and capital flight. Lim Chia Yien and al (2017) examined the causal relationship between inflation**,** debt and exchange Rate in Malaysia over the period 1960-2014 though a cointegration and granger causality test. The long-run estimates show the existence of a unidirectional relationship from exchange rate to public debt. These results show that there is a bi-directional causal relationship between foreign investment and economic growth domestic debt and inflation. In the same vein, Quilent Adhiambo Odera(2015), used the Ordinary Least Squares (OLS) to examine the relationship between exchange rate volatility and external public debt in Kenya between 1993 to 2013.

The results of the regression revealed that the exchange rate volatility can generally lead to an excessive public debt growth. In study about some Middle East and North Africa countries (Morocco, Egypt, Jordon, Turkey and Tunisia) Neaime (2009), used causality granger test to investigate the links between foreign debt and exchange rate. The links between foreign debt and exchange rate. Based on the panel data, Neaime observed a positive effect between external public debt and exchange rate According to Nguyen van bon (2015), the relationship between inflation and public debt in some developing countries over the 1990/2014 period. This research revealed the negative relationship between inflation and economic growth. In this context, the rise of the inflation is an indicator of resilience of the developing economy and a huge macroeconomic imbalance and fragility. More recently, in the G7 countries, Bernardin Akitoby and al

(2014) have investigated the impact of inflation on public debt over the 1980-2013 period, using the generalized method of moments (GMM). The applications of this method suggest that when the inflation increases by 6 percent points, the average net debt-to-GDP ratio decreases by about 11percentage points.

Emmanuel Harmon (2011) analyzed the impact of interest rate, inflation and GDP growth on public debt in Kenya over the 1996 to 2011. Using the three simple linear regression models, we found that the positive relationship between the dependent variable (public debt) and the independent variables (GDP, inflation and Interest rate). In addition, the results obtained suggest that the debt accumulated by Kenya between 1996 and 2011 decreased its economic growth.

Recently, Jens Hilscher and al (2014) studied the evolutions of public debt and inflation. In this paper, the inflation has a positive effect on government debt in an environment conducive to growing income inequalities. The Income inequalities raise not only social and political concernes but also economic ones. Actually, they weigh heavily on the public debt growth.

Richard Ajayi (1991) studied the interactions of External Debt, exchange Rates, domestic price, Government expenditure, real interest rates and nominal interest rates between 1975- 1986 in Nigiria. The author showed that the exchange rate coefficient was negative and statistically significant. When the exchange rate increases by one percent points, external debt decreases by about 0.01 percentage point per year.

In recent years, the relationship between interest rate and public debt has drown much interest in recent years. For exemple, Paolo Paesani and al (2006) examined the impact of the accumulation of government debt on the long-term interest rates in the Germany, Italy and USA. Their results support the idea that the debt accumulation can generally lead to long-term interest rates. Indeed, Peter Claeys (2012) by using the spatial modeling techniques for the EU, OECD countries and emerging markets, over the period 1990–2005, asserted that the level of public debt influences the use of domestic long term interest rates. A 1% increase in the debt ratio pushes up domestic rates by 2 points.

Furthermore, Robert ford and Douglas Laxton (1999) studied the relationship between public debt and real interest rate in nine industrial countries. They found that the wide government debt was influenced by the increase in the real interest rate. In study about U.S. economy, Joshua A and Nancy M (2011) studied the relationship between inflation and debt/GDP ratio for the period 1946-2008 using time series data. Using a panel data to macroeconomic variables (debt/GDP, inflation, economic growth rate %, CPI inflation, foreign direct investment, exchange rate). Based on multiple regression technique, we found that inflation and foreign direct investment can limited the risks for public debt in this country. In fact, the US sought to

improve the performance and efficiency of their debt sectors to ameliorate their overall economic performance. Thomas Laubach (2003) analyzed the effect of interest rate on budget deficit and debt. The authors showed a statistically and economically significant: The increase of the real interest rate can generally lead to raise the budget deficit and debt.

More recently, Carmen R Belen S (2011) used macroeconomic variables (public debt/GDP ratios, real interest rates, nominal interest rates, inflation, and domestic public debt/GDP) to examine the impact of inflation on public debt. The results of the regression revealed that inflation and financial repression contributed significantly to the reduction in public debt of the advanced countries between 1945-1960(Austrlia, Belgium, Italy, Sweeden, US, and United Kingdom). Moreover, Laurence Ball (2013) reported that financial development; economic growth and population are driving forces in the increased energy demand in Malaysia. A feedback effect is also reported between financial development and energy consumption in long run but financial development has a Granger cause energy demand in the short run.

Furthermore, there are some institutional and governance variables that can also help explain the evolution of public debt in the Eurozone in our period of assessment, for instance, corruption and shadow economy. In this way, Cooray et al., (2017) tested how the increasing of corruption and larger shadow economy directly affected the public debt—both is reinforced complementarity to their negative influence. However, under dynamic panel data analysis, Lee (2018) has found robust evidence that increasing public debt in the Organization for Economic Co-operation and Development countries has not been attributable to social expenditure. Indeed, because public debt levels influence long-term economic growth, Liu and Lyu (2020) suggested that policy makers should control its scale.

3. Data and methodology

3.1Data

Some researchers on public debt, such as Peter Claeys (2012), Douglas Laxton (1999) , Thomas Laubach (2003), Ines A (2016), Céline Breton (2004),Quilent Adhiambo Odera(2015), Neaime (2009), Emmanuel Harmon (2011) , Bernardin Akitoby and al (2014) and Nguyen van bon (2015) among others, included inflation, exchange rate, economic growth, capital stock, total population, foreign direct investment, and exportations .

As mentioned earlier, most existing literature supposes that these variables are likely to lead to changes in the public debt.

PD: Public debt.

RER: Real exchange rate.

DI: .Domestic investment

FDI: Foreign direct Investment.

INF: inflation.

UR: unemployment rate.

IR: interest rate.

Our study covers 37 countries and is determined by data availability. They include. Data are collected from the World Bank Development Indicators.

Table 1: List of Country

List of country	Number of countries
Southern Mediterranean countries	9 countries
European countries	28 countries

3.2 Methodology

To assess the determinants of public debt, we use the Generalized Method of Moments (GMM) dynamic panel, which helps resolve the problems of simultaneity bias, measurement errors, and the risk of the omitted variables. This method enables us to control for both individual and time-specific effects and bearing through endogeneity of variables especially when there is one or more lags of the dependent variable included as an explanatory one. This empirical work use the dynamic panel GMM proposed by Arellano and Bond (1991) and developed by Arellano and Bover (1995) and Blundell and Bond(1998), which can be expressed as follows :

$DBT=f(INF, IR, EXH, UR, DI, FDI)$ **(1)** After logarithmic transformation of Eq. (1) is written as follows:

$$\log(PD_t)=\alpha_0+\alpha_1 \log(INF)+\alpha_2 \log(IR)+\alpha_3 \log(RER)+\alpha_4 \log(UR)+\alpha_5 Log(DI)+\alpha_6 \log(FDI)+\varepsilon_t \quad \textbf{(2)}$$

We then transform the function Eq. (2), into regression equations to derive the empirical models to simultaneously examine the impact of inflation, exchange rate and interest rate on public debt. These simultaneous equations are constructed on the basis of theoretical and empirical insights of the recent literature. Can be written in panel data form as follows Eq. (2) because since our study is a panel data study:

$$\log(PD_{it}) = \alpha_0 + \alpha_1 \log(INF_{it}) + \alpha_2 \log(IR_{it}) + \alpha_3 \log(EXH_{it}) + \alpha_4 \log(UR_{it}) + \alpha_5 \log(DI_{it}) + \alpha_6 \log(FDI_{it}) + \varepsilon_{it} \quad \textbf{(3)}$$

Where the subscript i=1……., N denotes the country and *t*=1.

T denotes the time period (the period of study is 1990-2017).

4-The main results and interpretations

Descriptive statistics

In Table (2), we present a descriptive analysis of different variables (dependent and independent). This table presents a mean, standard deviation (Std. Dev.) and the coefficient of variation (CV) of these variables for each country.

Table 2: Descriptive statistics

Variables	**Mean**	**Std.dev**	**CV**
Southern Mediterranean countries			
PD	13,43	84,036	21,93
RER	6,482	89,983	16,85
DI	11,453	12,712	16,92
FDI	17,403	14,914	11,993
INF	11,472	12,841	10,45
UR	10,564	14,891	21,631
IR	9,485	33,012	26,91
European countries			
PD			
RER	9,566	29,82	10,483
DI	13,2713	13,071	18,015
FDI	9,241	34,991	14,134
INF	8, 317	89,792	12,432
UR	7,492	88,612	17,916
IR	16,201	91,414	14,165
	17,261	88,224	11,743

Table 2 shows the mean, maximum and minimum values of the variables used in the model. It is noted that The highest means of public debt are (13, 43) in Southern Mediterranean countries, whereas the highest means of exchange rate (9,566) in European countries. However, the highest means of inflation, unemployment rate and foreign direct investment in Southern Mediterranean countries. The highest means of Domestic investment are (13, 2713) in European countries.

Table 3 shows the correlation matrix of all sample countries. In fact, all the correlation coefficients between the explanation variables and the dependent variable are statistically significant at 5% at least. In addition, all the correlation coefficients between the independent variables are relatively low, which helps to eliminate the possibility of co-linearity between these variables.

Table 3: correlation matrix

Variables	PD	RER	DI	FDI	INF	UR	IR
PD	1.000						
RER	-0,17213	1.000					
DI	-0,7781*	0,4213	1.000				
FDI	-0,145*	0,1034	0,3942	1.000			
INF	0,1766*	0,2793	0,2913	0,6951	1.000		
UR	0,3921*	0,422	0,75103	-0,942	0,434	1.000	
IR	0,3725*	0,973	0,184	-0,773*	0,274	0,7812	1.000

Stationarity

To test the stationary of the variables used in the estimates, we used the stationarity tests, which are the Panel data tests of A. Levin and CFLin (1992); K.S.Im, M.H .Pesaran and Y.Shin (1997); G.S.Maddala S.Wu (1999).

Table 4: Stationary tests variables

	Southern Mediterranean countries			**European countries**		
	A. Levin and CF	K.S.Im, M.H .Pesaran and	G.S.Maddala S.Wu	A. Levin and CF	K.S.Im, M.H .Pesaran and	G.S.Maddala S.Wu

	Lin (1992)	Ishim (1997)	(1999).	Lin (1992)	Ishim (1997)	(1999).
PD	-4,572 (0,0000)	-3,654(0,0000)	-7,326(0,0000)	-6,581 (0,0000)	-1,491 (0,0000)	-6,572 (0,0000)
RER	-1,459(0,0020)	-9,991 (0,0123)	-2,372(0,0000)	-9,590 (0,0000)	-9,429 (0,0000)	-6,312 (0,0000)
DI	-9,203(0,0031)	-8,294(0,0001)	-8,541(0,0309)	-1,541 (0,0000)	-7,511 (0,0000)	-6,901 (0,0000)
FDI	-8,291(0,0032)	-1,773(0,0021)	-8,877(0,000)	-9,551 (0,0000)	-7,548 (0,0000)	-4,551 (0,0000)
INF	-5,366(0,000)	-7,377(0,012)	-9,905(0,000)	-4,422 (0,0000)	-8,581 (0,0000)	-8,501 (0,0000)
UR	-8,472(0,001)	-6,213(0,031)	-9,395(0,091)	-8,551 (0,0000)	-7,517 (0,0000)	-6,995 (0,0000)
IR	-5,221(0,001)	-6,722(0,001)	-6,568(0,001)	-7,219(0,001)	-9,281(0,001)	-4,342(0,001)

The results of unit root tests show that all data series in this table are not stationary. The study of the series in the panel is integrated of order (1). Hence, we can consider the existence of a long term relationship between the variables. Recently, the applied of Levin & Lin (1992), Pesaran and Y.Shin (1997) and G.S.Maddala S.Wu (1999) on panel data indispensable in the analysis of long-term process involving the use of the static series.

2. Results of the GMM Estimates

To study the impact of inflation and other macroeconomic variables on public debt for 37 countries, we examined how inflation, exchange rate, interest rate and unemployment rate… have an importance on public debt increase. The absence of an economically meaningful relationship between the inflation, the interest rate, the unemployment rate found in our prior analyzed might be an indication of the absence of joint management of public debt. It is necessary to adopt reforms in debt services to minimize the risks of debt. Our results relating to relationship between public debt and other macroeconomic variables are estimated to be pretty large in magnitude. Therefore, we intend to investigate the consistency of the findings through an alternative estimator of Arellano & Bond's (1991) GMM. The choice of this technique is made because this method can deal with the potential endogeneity arising from the inclusion of the lagged dependent variables and other potentially endogenous variables and is accurate and effective method allowing take into account the unobserved specific effects. This model can be written in panel data form as follows Eq. (4):

$$PD_{it} = \beta\, PD_{i,,\,t-1} + \gamma\, INF_{i,t} + \delta\, IR_{i,t} + \zeta\, RER_{i,t} + \sum \theta_J\, Z_{i,t} + \mu_{i,\,t} + \varepsilon_{i,\,t}\,; \quad \textbf{(4)}$$

J=1

i=1… N; t=1… T

PD_{it} is the observation of the dependent variable for country i at time t; β0 is the parameter to be estimated, γ , δ , ζ captures respectively (Inflation, interest rate and exchange rate), Z is vector of explanatory variables (foreign direct investment, unemployment rate and domestic investment) Finally μ is country-specific effects; and ε is the error term.

The results of the analysis using GMM model are presented in following tables. The first test in this model is Sargan/Hansen to provide some evidence of the instruments' validity; we notice that the p-values in the tests are greater than 0.1, indicating that over identifying restrictions are valid. Thus, this model is correct. Then, the p-values for AR (2) are higher than 0.10. Therefore, the null hypothesis is not rejected. This implies that the empirical model is consistent and there is a good specification of instruments. In addition, using Hansen J- statistic tests to check the validity of the instruments, we notice that the p-values in the tests are greater than 0.1, indicating that over identifying restrictions are valid. Thus, this model is correct. Then, the autocorrelation of Arellano and Bond (1991), tracks the existence of the second order autocorrelation in first differences. In fact, the null hypothesis indicates the absence of first and second order autocorrelation in the equation. This implies that the empirical model is consistent and there is a good specification of instruments.

Table 5: Results for the southern Mediterranean countries

Variables	Coefficients	Prob.Value
PDt-1	-0,076	0,271
INF	-0,921*	0,07
IR	0,983*	0,049
RER	-0,864*	0,0136
DI	-0,291	0,098
UR	0,234*	0,089
FDI	0,392	0,812
Const	-11,652	0,832
Sargan test	37,81	0,591
AR(2)	-0,75	0,936

Note: Sargan test refers to the over identification test for the restrictions in GMM estimation. The AR2 test is the Arellano– Bond test for the existence of the second-order autocorrelation in first differences.

** Coefficient significantat1% level.*

*** Coefficient significantat5% level.*

**** Coefficient significantat10% level.*

Table 5 contains results for the southern Mediterranean countries. The negative and significant coefficient of inflation in the southern Mediterranean countries, suggests that the increase in inflation rate decreases the public debt. Akitoby and al (2014) found that an acceleration of inflation would help reduce the public debt. It would, therefore be more effective of central banks do not tighten their monetary policy. Our results confirm the result for the MENA countries in this estimation.

Regarding the interest rate, this has a positive and significant effect on the public debt. This suggests that the increase in interest rates will lead to a gradual increase in the debt ratio. This rise of the rate makes it possible to increase the debt-to-GDP ratio, which presents a risk for public finances. In addition, if a central bank finances the state at a lower rate than that of commercial banks, the impact on the fiscal deficit is null. These results confirm the finding of Thomas Laubach (2003).

For the panel estimation, the variable of unemployment rate has a significant and positive effect on public debt at the 1% level. This suggests that a 1% increase in unemployment rate raises public debt directly and indirectly by 0, 0,234 %. A few years ago, the decision of countries of the Southern Mediterranean region to liberalize their national policies to create a welcoming regulatory framework for investment and reduce unemployment rate. Given that these investors are satisfied with their presence in these countries, they will advertise them by encouraging new investors to establish themselves in these countries while showing them the financial or budgetary incentives that are put in place (Padma M, Karl P (1999).

The coefficient of exchange rate indicates that this determinant has a significant and negative effect on public debt at the 1% level. An increase of real exchange rate by 1% leads to a decrease of public debt by 0,864%. This finding supports the view of Richard Ajayi (1991). The exchange rate depreciation can be explained by the trade deficit, the decline in government revenues and the limited intervention of the central bank in the foreign exchange market, which raises the percentage of public debt.

In fact, the depreciation of the exchange rate for the Southern Mediterranean countries generates a budget deficit, a decline in tourism receipts and FDI, a rise in public spending and inflation. Moreover, according to IMF, this depreciation has a significant positive effect on exportation. This means that the decrease of exportation can improve the price competitiveness of products.

Table 6: Results for the European countries

Variables	Coefficients	Prob value
PDt-1	-0,00926**	0,047
INF	-0,123*	0,000
IR	-0,398*	0,041
RER	0,0724*	0,001*
DI	0,099	0,000*
UR	0,785	0,996
FDI	-0,674*	0,089
Const	-19,96	0,099
Sargan test	19,492	0,694
AR(2)	-0,162	0,381

Notes: Sargan test refers to the over identification test for the restrictions in GMM estimation. The AR2 test is the Arellano– Bond test for the existence of the second-order autocorrelation in first differences.

** Coefficient significantat1% level.*

*** Coefficient significantat5% level.*

**** Coefficient significantat10% level.*

The results for the European countries are reported in Table 6. This table shows that the impact of the inflation on public debt is negative and significant at the 1% level. Which indicates that an increase of inflation by one percent leads to a decrease of public debt by 0,123%. This confirms the results showed by van bon (2015), Joshua A and Nancy M (2011), Laurence Ball (2013). The inflation can reduce public debt through the tax revenues of countries. If prices rise, tax revenues also increase, which in turn increases budget revenues. A budget surplus of 1% of GDP causes a decrease in the debt when inflation increases.

The negative and significant coefficient of interest rate, suggests that increases in interest rate decreases the percentage of public debt. Carmen Reinhart and Belen Sbrancia (2011) found that interest rates fixed by central Bank and financial repression (which refers to all the measures by which governments require residents to buy and hold government securities) have contributed significantly to the public debt reductions of advanced countries between 1945 and 1970. Similar findings were obtained by the results for the southern Mediterranean countries. Regarding the impact of real exchange rate on public debt for the European countries, we find that there a positive and significant effect. This suggests that exchange rate is a determinant of public debt. This also suggests that rise of the deficits automatically results in a rise of foreign assets to the real exchange rate and in particular in a rise of the public debt (Céline Breton (2004)).

The results show for the domestic investment is statistically significant at the 1% level. The magnitude of 0, 099 imply that a 1% increase of the domestic investment decreases the public debt for the southern Mediterranean countries by 0.099%. In this region, the domestic investment is explained by the credit provided to the private sector. This effect can be explained by the adoption of an incentive policy for domestic investors who look for financing. Indeed, Tunisia has embarked on a process of creating financial institutions capable of financing new projects in the form of small and medium-sized enterprises (SME), without forgetting the role of banking establishments as financial intermediaries, which are important for the promotion of domestic investment

For the developing countries, FDI has become an important source of private external funding. Unlike the other major types of external private capital flows, FDI is driven mainly by the prospect of long-term profits which investors hope to achieve in their directly managed production activities. On the macroeconomic level, the inflation, domestic investment and employment rates have an insignificant impact on public debt for the European countries.

The results for two panels concerning the determinant of public debt. First, we have found that the effect of inflation on public debt is negative and statistically significant in the European countries and the southern Mediterranean countries. This indicates that an increase in inflation implies a decrease public debt. Second, interest rates have a positive and statistically significant effect on public debt in the southern Mediterranean countries and negative and statistically significant. Third, we found that real exchange rate has a negative and statistically significant effect on public debt for the southern Mediterranean countries, but a positive and statistically significant effect for European countries. Only for the European countries, the domestic investment has a positive and statistically significant effect. Moreover, unemployment rate has a positive and statistically significant effect on public debt southern Mediterranean countries. Finally, foreign direct investment has a positive and statistically significant effect on public debt only for European countries.

Conclusion and policy implications

The objective of this empirical work is to investigate the determinants of public debt in public debt in the European countries and the southern Mediterranean countries. To solve this issue, a series of macroeconomic variables are combined to explain the determinants of public debt. Our results show that first, the effect of inflation on public debt is positive and statistically significant in the two panels. Second, exchange rates have a positive and statistically significant in the European countries. Finally, effect of interest rate on public debt is positive and statistically significant in two panels southern Mediterranean countries). We also show that the inflation, exchange rate, and interest rate are the determinants of public debt.

These results have important theoretical and practical implications. First, the significant presence of the foreign direct investment calls into question the development of the economy in the developing countries consists in creating a more predictable environment for foreign direct investment and innovation, and providing opportunities for sustainable economic growth. Second, the body of literature on inflation, exchange rate as well as interest rate on public debt has strong implications for economic policies. Third, an indebtedness that may generate conflicts of interest between the human value of production and management (restructuring, job losses...). It also presents the risk that lies in the possibility to see one's returns go down. Lower returns may be also caused by a decline of the real estate market value in general.

Future research should focus on the impact of liquidity risks on public debt during the global financial crisis and the European sovereign debt debacle. The present paper provides empirical results which are useful for the understanding of this type of national economy in the region as well as in determining the most effective economic policies in order to increase economic development. However, we believe that this paper is intended to help economic decision makers to improve the economic outlook by controlling the debts risks.

It also helps economic decision makers to understand how the macroeconomic determinant affect public debt to improve the economic and financial situation of a country, this minimizing the risks of debts to achieve economic development.

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