



Effect of public spending on the level of imports in Ecuador, 2000-2020

Efecto del gasto público en el nivel de importaciones en Ecuador, período 2000-2020

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Carlos Joaquín Crespo Cordero 

Universidad del Azuay
Cuenca, Azuay (Ecuador)
carlosj Crespo@es.uazuay.edu.ec

Luis Bernardo Tonon Ordoñez 

Universidad del Azuay
Cuenca, Azuay (Ecuador)
ltonon@uazuay.edu.ec 

Luis Gabriel Pinos Luzuriaga 

Universidad del Azuay
Cuenca, Azuay (Ecuador)
lpinos@uazuay.edu.ec

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Abstract

In the last decade, increasing in public spending in the Ecuadorian economy was notorious, causing different effects on all components of the aggregate supply. This research work aims to measure the effect of public spending in the non-financial sector on the behavior of total imports, taking data from the Central Bank of Ecuador in the period between the third quarter of 2000 and the second quarter of 2020. This analysis was performed using a classical linear regression model based on Ordinary Least Squares-OLS. It was determined that public spending explains the level of imports at 42.92% and in turn, imports show inelastic reactions to public spending.

Keywords: Aggregate demand, dollarization; offer added; public spending; non-financial public sector; imports; elasticity

Resumen

En la última década fue notorio el incremento del gasto público en la economía ecuatoriana causando distintos efectos en todos los componentes de la oferta agregada. Este trabajo de investigación tiene como objetivo medir el efecto del gasto público del sector no financiero en el comportamiento de las importaciones totales tomando datos del Banco Central del Ecuador en el período comprendido entre el tercer trimestre del año 2000 hasta el segundo trimestre del año 2020. Este análisis se realizó mediante un modelo de regresión lineal clásico en función de Mínimos Cuadrados Ordinarios-MCO. Se determinó que el gasto público explicó al nivel de importaciones en 41.44% y a su vez, las importaciones presentan reacciones inelásticas al gasto público.

Palabras clave: Demanda agregada; dolarización; gasto público; oferta agregada; sector no financiero; importaciones; elasticidad

JEL: E65.

INTRODUCTION

Fiscal policy is defined as the government's decisions on its income and expenses, the latter being known as government spending or public spending (Parkin, 2018). Although public spending is regularly divided into current spending and capital spending, for Larraín (2004) it comprises four categories:

1. Government consumption, which includes the salaries that the government (state) pays to public employees, as well as purchases of goods and services for current consumption;
2. Government investment, which encompasses a variety of forms of capital expenditure, such as the construction of roads and ports;
3. Transfers to the private sector, including retirement pensions, unemployment insurance, war veterans' benefits, and other benefits;
- and 4. Interest on public debt (p. 139).

The financial crisis of the late 1990s led Ecuador to dollarize its economy in 2000, abandoning the use of economic tools such as monetary and exchange policies to balance possible market failures. Thus, fiscal policy became the only government mechanism to manage the economy, so its sustainability requires strict management of State finances, which allows it to face internal and external imbalances (Crespo, 2019).

In the Ecuadorian case, during the presidency of Rafael Correa, public spending became more than one tool of fiscal policy and became the propellant for the development of the economy, reaching, according to data from the Central Bank of Ecuador CBE (2020b) in some quarters to have a percentage close to 50% of nominal GDP. This increase in public spending has direct effects on the components of aggregate demand, which represents the relationship between the demanded level of production and the aggregate level of prices, that is, the amount of goods and services that people are willing to buy at different price levels (Mankiw, 2014).

This caused internal consumption to be the factor that stimulates the economic functioning of the country without major signs of growth in terms of production (Crespo, 2019). In addition to this, despite the economic boom that Ecuador experienced as a result of the constant increases in the price of oil, the governments chose to incur deficits in the general budget of the State. This tendency to incur budget deficits is related to what was proposed by Keynes (1943), who defended the intervention of the State in order to balance economic activity, as long as this expense is allocated to direct public investment.

However, there is the possibility that incurring budget deficits will generate an imbalance in the external sector of the economy, or what is known as twin deficits, this theory holds that the fiscal deficit and the current account imbalance are related (Abel, Bernanke & Croushore, 2017).

In the Ecuadorian case, since the trade balance is the most relevant account within the current account of the balance of payments, if there is a variable such as public spending that affects the balance between the country's trade flows, this

could cause there is an imbalance in the external sector of the economy due to the outflow of foreign currency. This is because, in low-income countries, “public spending is often highly import-intensive, suggesting that public investment may not significantly increase demand for domestically produced goods” (Shen, Yang & Zanna, 2018, p. 201).

For this reason, the present work focused on measuring whether the substantial increase in public spending in the period under study contributed in some way to an increase in imports and therefore, an imbalance in Ecuador’s trade balance. For this, a classic linear regression model based on Ordinary Least Squares-OLS was used.

Intertemporal relationship between the variables is demonstrated through the use of a distributed lag model, the results of which reveal that a 1% increase in the expenditure of the Non-Financial Public Sector in period t generates an increase in imports of 0.5831%. With respect to the 1% increase in spending in the previous period, this results in an increase in imports of 0.3454%.

This document consists of four sections. The first instance, it contains the account of the state of the art, in a second section the methodology used is addressed to then show the results obtained to finally present the conclusions.

STATE OF THE ART

The analysis of a country’s trade relations is reflected in a set of accounts called balance of payments, which are often identified as the external sector of the economy (International Monetary Fund-IMF, 2009).

Within the analytical presentation of the balance of payments is the current account where the transactions of goods and services are recorded. The difference between exports and imports is known as the trade balance. However, figures for trade in services are generally considered less reliable than those for trade in goods. Furthermore, political attention and debate regarding trade is often based on figures for trade in goods (Beetsma, Giuliadori & Klaassen, 2008).

Due to this, when carrying out the analysis of an open economy focused on the exchange of goods, it is essential to distinguish between the national demand for goods with respect to the demand for internal goods. This, because the national demand encompasses the total demand of a country and a part of it corresponds to foreign goods, while the demand for internal goods refers to that consumed by the internal market and by foreigners through exports (Mochón, 2009).

For Thomas (2021) in an open economy, the demand for domestic goods is represented by equation 1:

$$Y = C + I + G - M + X \quad (1)$$

Where:

Y = Demand for domestic goods.

C = *Consumption*.

I = *Investment*.

G = *Public spending*.

M = *Imports*.

X = *Exports*.

In which, the first terms: Consumption, Investment and Public Expenditure refer to the national demand for goods. Thus, if this is studied through the criterion of a closed economy, it would be equal to the demand for domestic goods, however, when raising this assumption, imports represented by the letter M / E must be subtracted, in which the term E makes reference to the real exchange rate, that is, the price of foreign goods expressed in domestic goods (Blanchard, Amighini & Giavazzi, 2017).

In such a way that, by moving imports to the left side of the equation, it is possible to have aggregated demand on the right side and aggregate supply on the left. As shown through equation 2.

$$Y + M/E = C + I + G + X \quad (2)$$

Aggregated Supply Aggregated Demand

Therefore, an increase in imports corresponds to an aggregated supply response, that is, the total increase in a country's demand can be satisfied through national production or with goods imported from abroad. And it is that, in fact, the imports of a country maintain a direct relationship with the national income, as detailed in equation 3, since an increase in this causes an increase in the national demand for all goods, both national and international imported.

$$M = M(Y, E) (+, -) \quad (3)$$

Therefore, it can be said that an increase in national income causes an increase in the level of imports. In addition, this is related to the real exchange rate (Krugman, Obstfeld & Melitz, 2018). In such a way that, the cheaper foreign goods are compared to national goods, there is a greater national demand for imported goods.

This means that a decrease in the real exchange rate causes an increase in imports, which means that imports and the real exchange rate maintain an inverse relationship. Thus, once the components that determine a country's imports have been defined, these can be expressed as a function of national income and the real exchange rate, with a direct and inverse relationship, respectively, which is shown in [equation 3](#) ([Blanchard et al., 2017](#)).

Thus, when studying demand in developing countries, they allocate a high proportion of production (supply) to consumption to meet subsistence needs and a large part of this domestic demand is met by imports ([Shen et al., 2018](#)).

Due to this, authors such as [Ganelli & Tervala \(2009\)](#) based their work on the assumption that public and private consumption are complements and that an increase in public consumption raises the marginal utility of private consumption (both in domestic and foreign goods). This is related to the research of [Abbott & Seddighi \(1996\)](#), who, studying aggregate imports in the United Kingdom between the years 1972-1990, showed that there is a long-term relationship between aggregate imports and the main components of spending.

Therefore, the incidence of public spending, and especially current spending, on imports, is due to the fact that an increase in imports generates a multiplier effect and, being a component of aggregated demand, causes them to be increased. In relation to this [Spilimbergo, Symansky and hindler \(2009\)](#) define the fiscal multiplier as the relationship between a change in production and an exogenous change in the fiscal deficit, the latter caused by a change in public spending or tax revenue. One of the factors that influences the size of this multiplier is the flight of money abroad, which depends on the marginal propensity to import, so large countries and/or countries only partially open to trade have larger multipliers.

Thus, in works such as that of [Murphy \(2015\)](#), they confirm a positive response of consumption due to increases in public spending given by a positive wealth effect through which agents perceive an increase in their permanent income when spending increases; aggregate public, resulting in their model explaining a multiplier effect similar to the traditional Keynesian multiplier.

Therefore, a high import content of public spending means that part of the increase in public spending becomes a stimulus for foreign exporters ([Clancy, Jacquinet & Lozej, 2016](#)).

This translates into an increase in the national demand for foreign goods (imports) given the direct relationship that exists between imports and the level of income ([equation 3](#)). While, on the other hand, exports do not suffer variations as they do not maintain a relationship with the level of national income.

In such a way that, as [Giovannetti \(1989\)](#), if the composition of demand changes, the aggregate propensity to imports will change even if the disaggregated marginal propensities remain constant, on the other hand, he also maintains that the relationship between imports and total spending it is not stable over cycles since the composition of spending tends to change over the business cycle and because different compositions of spending correspond to different aggregate propensities to import.

Therefore, this increase in the level of imports can cause an imbalance in the trade balance of a country.

Public spending and imports

The relationship between public spending and the level of imports has been analyzed in some investigations, even with contradictory results, depending on the countries analyzed.

Ahmed (1987) analyzed data for Great Britain in the period between the years 1732 and 1913 by applying the Two-Country-Two-Goods Model, linear functions of supply and demand. The study concluded that there was evidence of an important link between temporary government spending and the trade balance deficit.

The study carried out by **Müller (2008)** with data from the United States of America between the years 1973 and 2005, applying Autoregressive Vectors -VAR in time series with quarterly data, concluded that the exchange rate depreciates, the terms of trade appreciate and the trade balance moves towards a surplus after an exogenous increase in public spending.

Beetsma et al. (2008) analyze the economies of Germany, Austria, Belgium, Denmark, Spain, Finland, France, Ireland, Italy, Greece, the Netherlands, Portugal, Sweden and the United Kingdom between 1970 and 2004 using a Vector Autoregressive Structural Model (SVAR). One of the conclusions they reach suggests a substantial multiplier of public spending with greater effects in relatively more closed economies.

Alexiou (2010) studied Greece between 1970 and 2007 using Cointegration of Autoregressive Distributed Lags- ARDL models, and concluded that a direct effect of changes in public spending on import demand is observed.

Ravn, Schmitt-Grohé & Uribe (2012) analyzed the economies of Australia, Canada, the United Kingdom, and the United States in the period between 1975 and 2005 using a structural VAR model. The study concluded that an increase in public spending produces an expansion of production, an expansion of consumption, a depreciation of the real exchange rate and a deterioration of the trade balance.

To complete this review of the state of the art, **Table 1** shows the data of some of these recent works:

TABLE 1.
Research on the relationship between public spending and imports.

Year	Authors	Countries analyzed	Period	Methodology	Conclusions
2017	Benarroch & Pandey	Sample of 68 countries: 30 low-income and 38 high-income.	1970-1975, 1976-1980, 1981-1985, 1986-1990, 1991-1995, 1996-2000.	Panel data. Unbalanced panel.	The causal relationship between trade and public spending occurs through the relationship between imports and spending. For high-income countries, there is a positive causal relationship between imports and productive expenditures.

Year	Authors	Countries analyzed	Period	Methodology	Conclusions
2017	Konstantakopoulou	Germany, Austria, Belgium, Cyprus, Slovakia, Slovenia, Spain, Estonia, Finland, France, Greece, Ireland, Italy, Latvia, Lithuania, the Netherlands and Portugal.	1995–2015	Panel data.	An increase in government spending leads to an increase in imports, which implies that, <i>ceteris paribus</i> , can lead to a deterioration in the balance of trade.
2019	Majeed	Pakistan.	1972-2016	Ordinary Least Squares (OLS) multiple regression model.	Public spending has a positive and significant impact on import demand.
2019	Vacu & Odhiambo	Ghana.	1985-2015	Autoregressive Model of Distributed Delays (ADLR).	An expansion of public spending has a positive effect on the import demand for intermediate goods.
2019	Yoon & Kim	United States of America	2000-2018	Multivariate Cointegration Analysis and Error Correction Model (MCVE).	There is a cointegration relationship between aggregate imports and spending components. Positive elasticity of demand for imports of government spending in the long run.
2020	Asaana & Sakyi	32 sub-Saharan African countries.	1990-2016	Imperfect proxy model of import demand using the generalized method of moments of the dynamic system.	The drivers of import demand in the short and long run are the components of aggregate spending including government consumption.
2020	Vacu & Odhiambo	South Africa.	1985-2015	Distributed lag autoregressive model (ADLR) in aggregated and disaggregated import demand functions.	Public spending negatively affects the aggregate demand for imports, but positively affects the demand for imports of intermediate goods.
2020	Al Fagha & El Hadj	Mauritania.	1974-2017	Multivariate Cointegration Analysis and Distributed Lag Autoregressive model (ADLR).	Public spending has a long-term relationship with imports and in turn shows an inelastic positive elasticity.

Source: Authors.

METHODOLOGY

In this quantitative research work, an analytical-deductive methodology was applied based on the information published by the **CBE (2020b)** in its online system of economic information and statistics. The data from the period between the third quarter of the year 2000 and the second quarter of the year 2020 were used. The starting point of the study was the third quarter of the year 2000 because, prior to it, the Ecuadorian economy was in a adaptation period to dollarization. The development of the econometric model was carried out using the software **Eviews software (version 10)**

With these economic data expressed on a quarterly basis, a classic linear regression model was proposed. It should be noted that the model was estimated based on OLS, since they are the Best Linear Estimators, Unbiased-MELI, optimal and consistent. That is, they meet the best conditions that statistically can be requested from an estimated value (**Gujarati & Porter, 2010**).

Thus, for the econometric model, the following variables were used:

Explained Variable

The dependent variable within the model was represented by the value of imports expressed in millions of dollars in FOB values, Incoterm or trade term, which represents the value of merchandise produced abroad that enters the country legally, through the purchase of goods from national residents and includes both costs and freight to the border of the exporting country (International Chamber of Commerce-**ICC, 2020**). FOB values were used to eliminate the influence of trading costs.

Figures were obtained from the **CBE Foreign Trade Online Database (2020a)**. The system generated data directly in quarterly intervals and in millions of dollars.

Explanatory variable

On the other hand, the independent variable that seeks to explain the behavior of imports was the Expenditure of the Non-Financial Public Sector-GSPNF, which is used as a proxy variable of public expenditure, it covers the expenses of non-financial public companies and decentralized autonomous governments as well as central government spending.

The data was obtained from the monthly statistical information report of the **CBE (2020c)** and for the construction of the database used in the period 2000-2019 from the December bulletin of each year. In the case of the year 2020, the last bulletin available was used, which at the time of data extraction was August.

Similarly, it should be mentioned that this variable was expressed in millions of dollars reflected on an accrual basis, that is, the expenses recorded at the time they occur, in which all arrears, commitments or obligations that entities have to meet are considered with third parties (**CBE, 2017**).

Process

Each of the analyzed variables contains a total of 80 observations. In addition, it should be noted that for the realization of the model it was decided to work with the natural logarithm of each series, this is because within the econometric analysis using logarithms offers certain advantages, mainly in the estimation of demand functions, such as the case of import demand, since it allows interpreting coefficients through elasticities or semi -elasticities, in addition to reducing the range of the variables, which makes the estimates less sensitive to their extreme values (Uriel, 2013).

The purpose of elasticity is to quantify how imports respond to changes of 1% in different explanatory variables (Albornoz, 2018).

When estimating the impact of the GSPNF on the level of imports, the assumption that the effect of public spending on the level of imports is contemporary, that is, it occurs at the same time, was left aside; this means that the effect of the variation of the explanatory variable is distributed, or distributed over several periods; in such a way that the increase in public spending does not have an immediate effect on the demand for imports, rather it happens gradually. As stated by Blanchard & Perotti (2002) that the effects of public spending are identified assuming that they respond with at least one quarter of delay.

For this reason, more than the logarithm variable of the GSPNF in the current period was included in the model, the same variable lagged one period in order to include in the model the progressive change suffered by imports over time, this is referred to as a distributed delay model. To better understand why the effect of the explanatory variable on the explained variable does not occur immediately. Gujarati & Porter (2010) highlight that this is due to three main reasons: institutional, technological and psychological; the latter refers to the behavior of people and their refusal to change their consumption patterns, due to force of habit. Once this was explained, the model was specified through equation 4:

$$\ln M_t = \beta_0 + \beta_1 \ln GPS_t + \beta_2 \ln GPS_{t-1} + u_i \quad (4)$$

Where:

$\ln M_t =$	Natural logarithm of imports in period t .
$\beta_0 =$	Regression constant.
$\ln GPS_t =$	Natural logarithm of Expenditure of the Non-Financial Public Sector in period t .
$\ln GPS_{t-1} =$	Natural logarithm of Non-Financial Public Sector Expenditure in period $t - 1$.
$\beta_n =$	Coefficient of each variable.
$u_i =$	Random error term.

Because the time window has a quarterly frequency, the time series was seasonally adjusted using the STL decomposition method. Since the time series analyzed are non-stationary, evaluated through the Augmented Dickey-Fuller test, the first difference was applied to make them stationary and thus avoid the problem of spurious regressions (Gujarati & Porter, 2010).

The final specification of the model is shown in equation 5:

$$D(LMt) = \beta_0 + \beta_1 D(LGPS_t) + \beta_2 D(LGPS_{t-1}) + u_i \quad (5)$$

Where:

$D(LMt)$ = Difference of the logarithm of the seasonally adjusted Imports variable.

$D(LGPS)$ = Difference of the logarithm of the variable Expenditure of the Non-Financial Public Sector seasonally adjusted.

$D(LGPS_{t-1})$ = Difference of the logarithm of the non-financial Public Sector Expenditure seasonally adjusted variable lagged one period.

RESULTS

In the case of imports, during the analyzed period, they presented an average quarterly growth rate of 2.5%, reaching its maximum point in the fourth quarter of 2014 with a value of 7 020.58 million dollars. It should also be noted that from 2000 to 2007 these were minimally higher than the GSPNF, but from 2008 onwards this trend is reversed.

When analyzing the GSPNF it was determined that between the period 2000-2020 the total expense incurred was 490 271.80 million dollars of which 326 300.88 million dollars correspond to expenses incurred between 2007 and 2017, that is, 66.56% occurred during the government of economist Rafael Correa (CBE, 2020c).

In the study period, the GSPNF grew quarterly on average by 4.8%, growth higher than the average growth rate of the quarterly nominal GDP, which was 2.3%. It should be noted that in the fourth quarter of 2009 the maximum quarterly growth rate of the GSPNF occurred with 45.9% compared to the previous period.

This increase in the GSPNF caused a significant amount of resources to enter the country's economy through spending by the State, as a consequence a higher income was generated from the flow of higher salaries from the public sector, in addition to the increase in transfers and subsidies, which caused the different components of aggregate demand to increase.

The above shows that the GSPNF had an impact on the variation of Ecuador’s imports and this relationship, part of a macroeconomic identity; the same that affirms that in a dollarized economy, as is the Ecuadorian case.

A nominal increase in aggregate demand has an identical response in both nominal and real terms of aggregate supply. Thus, if the local supply is not very elastic, the entire response of the aggregate supply would come from imports (Albornoz, 2009, p 22).

The evolution of imports in FOB and GSPNF terms in the analysis period is shown in Figure 1:

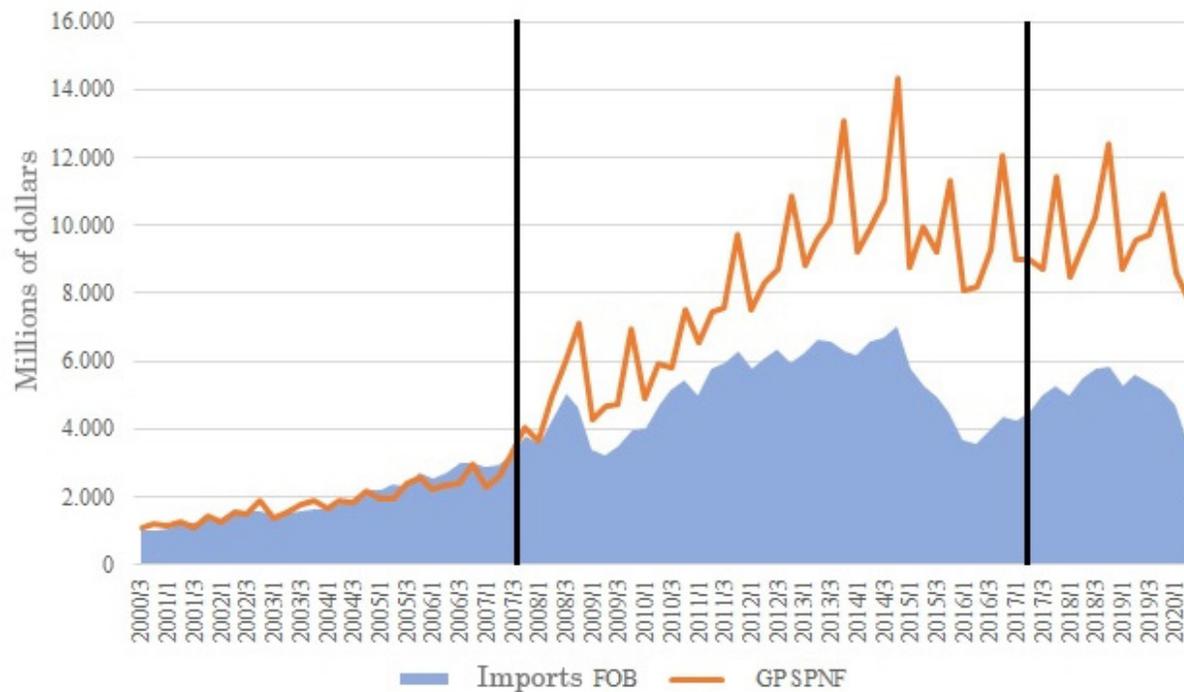


Figure 1. Imports and Expenditure of the Non-Financial Public Sector in the period 2000-2020.

Source: Own elaboration based on CBE data (2020a; 2020c).

The two vertical lines present in Figure 1 show the period of Rafael Correa’s presidency. It can be seen how from the third quarter of 2000 to the fourth quarter of 2014, both variables show a growing trend; a situation that is reversed from the year 2015. In terms of fluctuations, the variables studied remained relatively similar in growth until 2007, this year being a turning point in which the GSPNF begins to show considerably higher values in relation to imports. Likewise, it should be noted that in both variables there is a seasonal component in the fourth quarter of each year, where their maximum values are presented.

If the average quarterly growth rates of both the GSPNF and imports are analyzed in detail for periods of time related to the political aspect of Ecuador, it is observed that, in a first stage, before the Correa government (from the third quarter of year 2000 to the fourth quarter of 2006), the variables showed a similar rate of growth.

During the 10 years of Correism (from the first quarter of 2007 to the second quarter of 2017), there was a considerable percentage increase in the GSPNF with respect to imports. Finally, in the post-Correism stage, the average percentage increase of the variables tends to attenuate, as can be seen in **Table 2**.

TABLE 2.
Quarterly average growth of the analysis variables by period.

Variables	Period		
	2000 III - 2006 IV	2007 I - 2017 II	2017 II - 2020 II
FOB imports	6.08%	1.4%	-0.9%
GSPNF	6.06%	5.2%	0.6%

Source: Own elaboration based on **CBE (2020a; 2020c)**.

Development of the econometric model

With the results obtained, the regression was performed giving the results shown in **Table 3**:

TABLE 3.
Equation $D(\ln MFOB_t)$ vs $D(\ln GPS)$.

Dependent Variable: D(LM_SA)				
Method: Least Squares				
Date: 01/07/21 Time: 21:18				
Sample (adjusted): 2000Q3 2020Q2				
Included observations: 80 after adjustments				
HAC standard errors & covariance (Bartlett kernel, Newey-West fixed bandwidth = 4.0000)				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LGPS SA)	0.583163	0.130757	4.459917	0.0000
D(LGPS SA(-1))	0.345397	0.080735	4.278172	0.0001
C	-0.007059	0.011396	-0.619442	0.5375
R-squared	0.429186		Mean dependent var	0.019797
Adjusted R-squared	0.414359		S.D. dependent var	0.092406
S.E. of regression	0.070716		Akaike info criterion	-2.423521
Sum squared resid	0.385054		Schwarz criterion	-2.334195
Log likelihood	99.94085		Hannan-Quinn criter	-2.387708
F-statistic	28.94749		Durbin-Watson stat	1.650175
Prob(F-statistic) Prob(Wald F-statistic)	0.000000		Wald F-statistic	17.29206

Source: Self made.

The formula obtained was (equation 6):

$$D(LMt) = \beta_0 + 0.583163 D(LGPS_t) + 0.345397 D(LGPS_{t-1}) + u_i \quad (6)$$

As can be seen, GSPNF spending has a dynamic and positive influence in relation to imports. The independent variables, GSPNF and its one-quarter lag, were statistically significant at the 1% level. The model as a whole was significant because when observing the p value of the F test, which is less than 1%.

Thus, it can be verified that when the expenditure incurred by the non-financial Public Sector in period t increases by 1%, imports, keeping all other variables that may affect them constant, that is, with the condition *ceteris paribus* (Marshall, 1920), will increase by 0.5831%. Likewise, when the expenditure incurred by the non-financial Public Sector in period $t - 1$ increases by 1%, imports, maintaining all other variables *ceteris paribus* will increase by 0.3454%.

The two coefficients show that the degree of response of the level of imports is inelastic to the change in the GSPNF, both in the current period and with its lag. The adjusted coefficient of determination that was obtained indicates that the independent variables explain the dependent variable by 41.44%. The existence of a positive and significant relationship of the variables studied coincides with the works of Majeed (2019) and Asaana & Sakyi (2020).

In this way, the hypothesis of how in the Ecuadorian economy, the increases in public spending collaborated to generate increases in imports that Ecuador made during the study period is confirmed, which caused that in many quarters the trade balance is deficit.

In similar studies, such as that of Lane & Perotti (2003), a model of the countries that make up the Organization for Economic Cooperation and Development-OECD was analyzed, identifying that fiscal expansions result in a trade deficit rather than a surplus, because they induce a loss of competitiveness due to the influence on the exchange rate. Similarly, research such as that of Tagkalakis (2014), analyzes fiscal policy and economic activity in Greece between the years 2000-2011 and affirms that the increase in public spending drives the components of demand and production growth. In this way, the trade balance would be expected to deteriorate after an expansionary fiscal policy action that boosts domestic demand, which would subsequently cause an increase in the demand for imports.

Other works, such as Kim & Roubini (2008), study the US economy and state that fiscal expansion tends to increase the current account of the balance of payments.

Within the region, the work of Calva & Silva (2019) takes the period 1980-2014 as a reference to analyze Ecuador, Colombia, Brazil and Venezuela and concludes that public spending affects imports from the countries mentioned, without reaching to quantify the elasticity. In the specific case of the Ecuadorian economy, Ca-

rrillo (2015) when analyzing the period 1993-2009, concludes that government consumption has a close relationship with the level of imports.

However, there are contributions such as that of Puig (2015) which suggest when analyzing the Bolivian economy in the period 1990-2013 through a model of Structural Autoregressive Vectors (SVARs), that there is no evidence that public spending current and capital, have a multiplier effect on imports.

The difference between these studies is due to the factors that influence the size of the public spending multiplier and the marginal propensity to import in each economy, since countries with developed economies and those with restrictive trade policies tend to have a greater public spending multiplier.

The results obtained coincide with the signs of the elasticities obtained in the studies by Yoon & Kim (2019) and Al Fagha & El Hadj (2020). In such a way that, the fact of demonstrating the existence of a positive but inelastic effect of public spending on imports, must be analyzed and taken into account by government authorities in their decisions on trade policy, because the outflow of foreign currency of the country in the form of payments for imports could jeopardize dollarization.

As evidence of this, it was the measure imposed by the government of economist Correa who, through COMEX Resolution No. 011-2015, applied a temporary tariff surcharge of 5%, 15%, 25% and 45% depending on the type of product import. These restrictive trade measures, known as safeguards, entered into force on March 15, 2015 and were eliminated on June 1, 2017 and their objective was to regulate the level of imports, balance the balance of payments and ultimately protect dollarization.

CONCLUSIONS

It can be concluded that as of 2007 there has been a notorious change in the management of fiscal policy and since then, public spending has increased year after year without any type of support, that is, it has grown at a higher rate. proportion to GDP and income growth.

Similarly, it is alarming that a large part of these expenditures have been allocated to current spending, which has caused no real change to be experienced in terms of the country's productive matrix. For this reason, the constant deficits in the budgets and the null possibility of resorting to monetary policies have caused the dark economic panorama that Ecuador is currently experiencing, which is a consequence of the irresponsible management of state finances throughout history, considered a decade won.

Regarding the external situation of the country, it is observed that in fact the government of the citizen revolution caused the deficits in the external sector to increase, for which Ecuador presented both fiscal and commercial deficits in the last decade causing imbalances in the two sectors of the economy. For this reason, it should be taken into account that, by maintaining such a high level of public spending, this will cause the country to require more financing from the interna-

tional community, in order to deal with both internal and external imbalances external.

Likewise, it is verified that the nominal increase in aggregate demand, generated by the increase in public spending, has had a response in aggregate supply, but since local supply has been inelastic, much of the response of supply aggregate has come from imports. In this way, the indebtedness generated by the fiscal deficit, as a result of excessive spending, has not contributed to the productive development of Ecuador.

For this reason, it can be stated that, in period t , for each 1% increase in spending by the non-financial public sector, imports will increase by 0.5621%. In period $t - 1$ for every 1% increase in non-financial public sector spending, imports will increase by 0.3454%.

This will cause the circulating flow of the economy to be reduced, due to the strong outflow of foreign currency destined for imports; In addition, this will cause the characteristic multiplier effect of public spending to be less and less and that, instead of contributing to the development and productive growth of the country, it encourages the growth of the countries that supply goods and services by importing, therefore, becomes one of the causes of the imbalance in the external sector. For this reason, it is essential that the government of Ecuador make changes with respect to its position in the management of fiscal policy since there is a great possibility that the Ecuadorian economy has presented the phenomenon of twin deficits during the study period, which should be studied. in future works.

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BIODATA

Carlos Joaquín Crespo Cordero is an Economist graduated from the University of Azuay (Ecuador). Currently dedicated to private professional practice. ORCID: <https://orcid.org/0000-0002-5345-5733>

Luis Bernardo Tonon Ordóñez is an Economist graduated from the University of Azuay- UAzuay (Ecuador). Higher Diploma in Finance, Stock Market and Fiduciary Businesses from UAzuay. Higher Diploma in International Negotiation from the UAzuay. Master of Business Administration from UAzuay. Since 2003 he has been a professor at the University of Azuay in the areas of Economics and Finance. He is currently Coordinator of the School of Economics. He has participated in various research groups and is part of the Business Observatory of the University of Azuay. ORCID: <https://orcid.org/0000-0003-2360-9911>

Luis Gabriel Pinos Luzuriaga is an Economist graduated from the University of Azuay (Ecuador). Master in Insurance and Financial Risks from the Escuela Superior Politécnica de Litoral-ESPOL (Ecuador). He works as a teacher in the area of Statistics, Actuarial Calculation and Econometrics. He has participated in different research projects, and is currently linked to the research group of the Business Observatory of the University of Azuay. ORCID: <https://orcid.org/0000-0002-3894-8652>