Vol.9 Issue.2 2024

RSEP Review of Socio - Economic Perspectives
ISSN: 2149 - 9276
E-ISSN: 2547-9385

Towards a Demand Model to Reduce Accumulation: Evidence from Ecuador

Marcelo Varela-Enriquez
1 Doctor in Social Sciences with specialization in Applied Economics. Full time professor Institute of Higher National Studies-IAEN, The State Postgraduate University. Professor half time Central University of Ecuador.
ORCID: 0000-0003-4721-8229
Email: marcelo.varela@iaen.edu.ec / Marcelo_Varela_Enriquez@hotmail.com

DOI: https://doi.org/10.19275/RSEP189

Article Type: Original/Research Paper

Article History
Received: 7 July 2024 Revised: 10 November 2024 Accepted: 1 December 2024 Available Online: 31 December 2024

Keywords: Demand Model, Neoliberalism, Accumulation, Ecuador.
JEL classification: A1, B5, D3, E

Citation: Enriquez, M.V. (2024). Towards a Demand Model to Reduce Accumulation: Evidence from Ecuador, *Review of Socio-Economic Perspectives*, 9(2), 38-64.

Copyright © The Author(s) 2024 This is an Open Access article distributed under the terms of the Creative Commons Attribution License (https://creativecommons. org/licenses/by/4.0/), which permits unrestricted reuse, distribution, and reproduction in any medium, provided the original work is properly cited.

Abstract

The present work analyzes the theoretical differences in the understanding of macroeconomics, starting from confronting the supply approach (neoclassical-neoliberal) with the demand approach (Keynesian-Post-Keynesian-Kaleckian) that allows generating a demand model to confront accumulation. and neoliberalism for the Ecuadorian case. In this sense, the objective of the research will be to determine the theoretical conditions of a demand model with a comparison of economic and social results compared to the application of free market or free competition economic policies, carried out in Ecuador in the period 2000 - 2023. The methodology used is a descriptive analysis based on variables and relationships between variables that allows determining the accumulation process, and the application of two economic models in Ecuador in the dollarization period (2000-2023): The first model economic, neoclassical-neoliberal applied in the periods 2000-2006 and 2018-2023, and the second model applied in the period 2007-2017. The results show the existing relationships between variables that determine a greater or lesser distribution under different accumulation conditions, added to theoretical conditions analyzed. Given these results, a Kaleckian demand model is proposed to address these disparities that have occurred in Ecuador.

1. Introduction

Economic understanding has been based on formal theories from the economic development carried out by the classics (Smith, 1776; Ricardo, 2004), Marxists (Marx and Engels, 1848), neoclassicals (Marshall, 1890), Keynesians (Keynes, 1936), monetarists (Friedman, 1976), neo-Keynesians (Hansen, 1980), post-Keynesians (Kalecki, 1960, 1963, 1976; Robinson, 1975, 1984), neoclassical and/or neoliberals (Hayek, 2011), in which the difference between the applied approaches has focused, among others, on the following areas: a) the understanding of supply and demand, where demand must adjust to supply (supply approach, orthodoxy) while aggregate supply must adjust to aggregate demand (demand approach, heterodoxy); b) between the political strategy of free market and state intervention, c) between analyzing scarcity and exchange versus the analysis of production, growth and distribution; d) between understanding consumer behavior tied to elective actions based on utility functions with a maximization adjustment with rational anticipations, versus understanding the subordination of needs that are frequently hierarchical and subordinate to each other.

The orthodox vision (neoclassical, monetarist, neoliberal) of the economy is based on a supply approach where the management of aggregate demand is used, accepting the "quid pro quo" between levels of activity and prices, in a state context assumption of Welfare (actually to determine the economics of well-being), using economic planning and programming as instruments to rationalize state action and guide certain actions of the private sector of the economy, under the assumptions of the rational individual agent, the hypothesis of rational expectations (HRE), the continuous emptying of markets, the price system as a guide for the behavior and decisions of agents, and the capacity for optimization, in an environment of utility functions of the producer and the consumer. As Correa (2023: 10) points out:

"In terms of social preferences...For utilitarianism, the well-being of individuals are perfect substitutes, so the social situation will improve regardless of who improves...Utilitarianism is the case in which every individual has a weighting coefficient of 1, so for the final result is absolutely indifferent who loses or who wins."

While the heterodox vision (structuralist, Keynesian and post-Keynesian to a greater extent than the Marxist) has postulated the demand approach from the essential element, the principle of effective demand, in which the effects of demand predominate over those of supply, both in the short and long term, where the investment determines the savings and not the other way around; added to the historical understanding of time and economic dynamics, in which the harmful effects of price flexibility condition the effects on income, therefore, price flexibility can worsen the situation that it is supposed to correct; as well as defining the monetary economy of production taking into account the fact that contracts are agreed in monetary units, where the companies have debts and the families own assets, all of which imposes certain financial restrictions, in an environment of uncertainty where the future is necessarily different from the past; the future is unpredictable, since current decisions are modifying its configuration, even more so when there are imperfect markets where the exploitation of labor is conditioned to the realization of accumulation based on the degree of monopoly or oligopoly, as well as the productive capacity. existing, in an environment where the consumption power of capitalist society limits that productive consumption.

Due to the aforementioned, it is necessary to construct a new paradigm in economics that faces the processes of accumulation in a context of state intervention in which the principle of effective demand is configured, where supply, prices and distribution are limited based on a demand model; wherein the state, companies and families demand to a greater extent so that supply grows, and with-it collections, investment and employment, with price stability and distribution processes. To this end, the intervention of the state from the definition of fiscal, monetary, commercial and income economic policies generates economic and social improvements in the short and medium term, to generate economic and social stability in the long term in a context of well-being (Varela, 2021), where justice predominates as a virtue, otherwise for libertarianism "Intervening with support prices or decent wages would even be immoral from libertarian ethics, because it would be interfering in apparently voluntary and informed individual decisions" (Correa, 2023: 12).

This demand model will follow the Kaleckian contribution of the principle of effective demand to analyze the realization of surplus value from two dimensions: The analysis of the short-term activity level (first dimension), and the theory of long-term growth (second). The first dimension related to cyclical fluctuations in output, employment and the degree of capacity utilization through the Kaleckian multiplier, as well as the relationships between the degree of monopoly and the level of effective demand. The second dimension related to the problem of long-term accumulation, since "capitalists get what they spend", that is, the determination of their profit rate by the growth rate and the propensity of capitalists to save. To this end, Kalecki's analysis focuses on the theory of realization and capital formation complementary to Marxist theory, in which he distinguishes the conditions of determination of potential surplus value and effective surplus value, defining a greater accumulation process, in conditions of a higher degree of monopoly or oligopoly, or in circumstances where state intervention is less,

or in turn, the accelerating and multiplying effect of public investment is not carried out, as a result of the fiscal adjustment carried out.

As Joan Robinson (1975) points out, this principle of effective demand is not related in Kalecki to any psychological law (the Keynesian propensity to consume) but to the separation of capitalist society between the capitalist class and the working class. Thus, the adjustment of savings with investment has to do with the fact that members of the working class "spend everything they earn", while those of the capitalist class "earn everything they spend", being able to finance their investment by withholding of the benefits generated. In this way, "Kaleckian models are designed to project in the long term the central idea of Keynes's General Theory, that firms are free, within broad limits, to accumulate as they please, and that the savings rate of the economy, as a whole, adapts to the investment rate that they decree" (Robinson, 1975: pp. 82 - 83). Considering that the post-Keynesian interpretation of savings - investment focuses on the determination of the distribution of income, while in the Kaleckian interpretation the emphasis is on the determination of the level of income.

2. Literature Review

Neoclassical economics (orthodoxy) has directed economic understanding from the supply approach, assuming the study of economic agents who make decisions about what, when and how to produce and consume, given preferences and certain circumstantial restrictions. Considering that, if the agents are producers and consumers, their fundamental relationships occur in the ideal space of the competitive market. From this follows that what is fundamental is the microeconomic study that defines the action of individual agents against prices. That is, in this supply model a price system predominates wherein the objective of economic agents is maximization, the consumer will maximize his utility through a utility function, while the producer will maximize his profit through a production function. As Rafael Correa (2023: 8) points out, "The fundamental problems of this utilitarian vision are its intrinsic ethics, the total omission of distributive aspects and some of its practical consequences."

In this neoclassical vision, three orientations are distinguished: a) Lausanne Group (Walrasian), which highlights the issue of general equilibrium (intense use of mathematical instruments), b) Cambridge Group (Marshallian), which focuses on partial equilibrium. (speculative marginalism plus empirical proof), c) Austrian school (marginalist), adverse to mathematical formulations (except Schumpeter). In all these schools the stability of political structures and income distribution is accepted as given. It is generally accepted that in the long term is possible to achieve full employment and general equilibrium. Subsequently, in response to the Keynesian approach, the neoclassical synthesis model is determined (neo-Keynesianism, Keynesian postulates based on neoclassical foundations, some call it bastard Keynesianism, others call it hydraulic Keynesianism) which defines 5 equations:

$$Y = C\,[(1- t)\,Y] + I\,(i) + G \qquad (1)$$

Equation (1) represents the IS curve, it depends on family consumption, investment and spending, there are also taxes.

$$L\,(Y, i) = M / P \qquad (2)$$

Equation (2) represents the demand for money, which depends positively on income (Y) and negatively on the interest rate (i). Responds to speculation and transaction motives.

$$Y = F\,(N, K) \qquad (3)$$

Equation (3) is the production function, which depends on labor (N) and the capital stock (K).

$$W = P\,F\,(N, K) \qquad (4)$$

Equation (4) is the demand equation in the labor market, derived from the firm's profit maximization in the short term.

$$W\,(1- t) = P.\,S\,(N) \qquad (5)$$

Finally, equation (5) is the labor supply equation, derived from the maximization of the individual's utility.

From equations (1) and (2) the aggregate demand is obtained; from the rest, the aggregate supply is obtained. Determining the endogenous and exogenous variables of the model:

- Endogenous variables: $Y, N, P, W/P$

  Where Y is income, N is employment, P is labor supply, and W/P is salary.

- Exogenous variables: t, I, G, K, M

Where *t* is the tax, *L* the demand for money, *G* is public spending, *K* is the capital stock, and *M* is the money supply.

This determination of the endogenous and exogenous variables in the model generates the "classical dichotomy", in which the real variables (*Y, N, W/P*) are determined by (real) supply factors; while the nominal variables cannot influence these variables, but the real variables will influence the nominal ones. As can be seen, variations in exogenous variables, such as government spending and real balances, will only influence the interest rate and the price level, that is, these variables will generate inflation or higher interest rates. This is confirmed by the recursiveness of the model: the first three equations can be solved independently of the other two.

While Keynesian economics (heterodoxy) is based on two key ideas: The first points out that the main cause of a short-term economic event such as a recession can be due to movements in aggregate demand (*AD*) rather than movements in aggregate supply (*AS*). The second points out that there is rigidity in prices and wages, and, therefore, unemployment can be generated when a recession or economic crisis occurs. Therefore, aggregate demand will never be high enough to generate an incentive for companies to achieve full employment, since the macroeconomy will slowly adjust to changes in aggregate demand due to the rigidity of prices and wages, which do not respond to increases or decreases in demand. In this sense, what is analyzed and determined is that recessions or economic crises occur when the level of *AD* is lower than the *AS* or production carried out under conditions of full employment of the workforce, under conditions of declining wages. and rising prices, with a reduction in consumer spending, which reduces investment expectations or investment spending, due to a drop in sales. That is, the intersection of aggregate supply and demand will always have a level of production lower than the GDP level with full employment under conditions of price and wage rigidity, which makes difficult for the economy to return to full employment and obtain the potential GDP.

Hence the importance of spending, which generates a multiplier effect on aggregate demand. Higher salaries and collections would generate greater spending by households and the state, since greater spending not only affects the equilibrium point of GDP (real and potential) but a change in spending generates a more than proportional change in GDP. On the one hand, if all companies increased salaries, the increase in labor costs would only be apparent, due to a higher level of production with greater productivity, creating a cost paradox. On the other hand, the expenditure multiplier causes the expenditure of one person or the state to become the income of another, via consumption or demand, which creates additional expenditure and income, which determines a greater cumulative effect on GDP than the increase in initial spending, generating higher aggregate income and expenses.

This condition can be noted in Ecuador, when in 2007 a model of greater public spending was applied based on a more effective fiscal policy, a 2008 tax reform that generated greater income that allowed to generate greater expenses and public investment, allowing that aggregate expenses increase between 2007 and 2016, and decrease again from 2018 to 2024, as a result of a fiscal adjustment in response to the agreement with the International Monetary Fund (IMF) in 2018, which affected the economy due to a contraction in investment and public spending, as can be seen in the following Table and Figure; that is, any policy that causes aggregate spending to decline is a cause of economic contraction or recession, including lower consumption, lower savings, lower investment or lower government spending and investment, decrease in exports or increase in imports.

Furthermore, Table 1 shows that an increase in collections does not affect aggregate spending, as neoclassical economics points out, precisely due to the multiplier effect of spending in the economy. While Figure 1 shows how collections have a direct effect on the economy, greater collection implies greater growth of the economy, and vice versa, driven by the demand of the state, via public spending and investment, because taxes increase or are reduced. according to economic activity.

Table 1. Aggregate spending, millions of dollars, percentage and difference in variation, 2000-2024.

Year	Gross National Income	Income after taxes	Aggregated spending	Ratio of aggregate expenses to income after taxes	Difference in aggregate spending
2000	17.531	15.856	17.153	108,2	-
2007	49.849	44.505	48.926	109,9	1,6%
2016	97.671	84.284	98.129	116,4	5,9%
2024 (e)	121.710	105.510	121.124	114,8	-1,4%

Source: Central Bank of Ecuador, Internal Revenue Service, Ministry of Economy and Finance. Own elaboration. Note: Aggregate spending is equal to household consumption plus FBKF plus exports and minus imports.

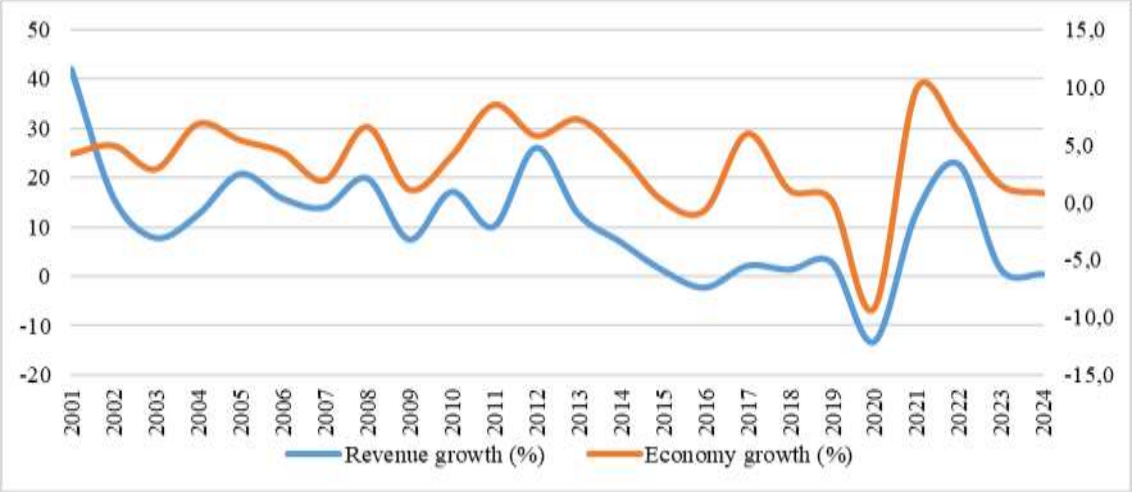

Figure 1. Growth in revenues and the economy, 2001-2024, percentage.

Source: Central Bank of Ecuador, Internal Revenue Service. Own elaboration.

In this sense, Keynesian economics proposes stabilizing the economy through strong state intervention at the macroeconomic level, increasing aggregate demand through public spending and investment at times in which private demand (households and companies) decreases, but also the economy Keynesianism does not require any price control at the microeconomic level, nor fixing prices nor fixing quantities, but rather generates the conditions for price stability and full employment, that is, through economic policies, as noted in Varela (2023: 210):

"All of this implies correcting the imperfect market through State regulation of the economy. To achieve this objective, economic policy measures that differ in time and application must be applied: 1. Those developed in the short term or cyclical, aimed at stabilizing the economy. These measures are: fiscal policy, monetary policy, foreign or commercial policy and income policy. 2. Those developed in the long term or structural, aimed at creating favorable conditions to achieve the greatest possible growth of the economy, under the idea of full employment and stability. These measures can be: reorganization of an economic sector or region, planning of objectives and priorities for the future, nationalization policy".

To support the proposed demand model in Ecuador, it is important to consider the Keynesian expenditure-product approach - prior to the appearance of the aggregate supply-aggregate demand (AS-AD) model - which explains the total expenditure in the economy without abstract the price level or aggregate demand. As can be seen in Figure 2, this approach determines the equilibrium point between aggregate expenditure and real GDP, where real GDP is the measure of output, and aggregate expenditure is the measure of spending in the economy. The 45-degree line is the trend line of the points where aggregate expenditures and real GDP are equal. Equilibrium occurs at E_0 where aggregate expenditure G_0 is equal to real GDP Y_0. In the case of Ecuador

between 2000-2024, the equilibrium point is 77 billion dollars, a point where there is no incentive to move away from that result, a point that corresponds to the real GDP and aggregate spending of the 2011 year. However, for the economy to produce at full employment in that year, a potential GDP of 107 billion dollars had to be reached, corresponding to what was produced in 2019, that is, there is an 8-year gap in total production to reach full employment. production with full employment as long as the state applies demand policies via greater investment and public spending with increased wages and price stability, and this is due to multiple factors, including the primary export productive structure, the strong dependence on the external market, the high interest rates, the low level of income, the fiscal adjustment applied between 2000-2006 and 2018-2023, among others.

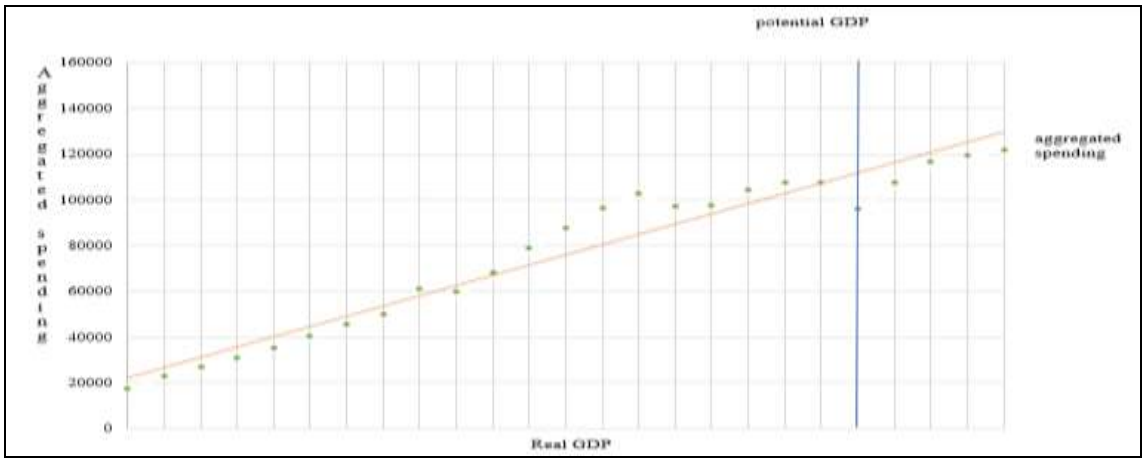

Figure 2. Expenditure-product approach, 2000-2024, millions of dollars.

Source: Central Bank of Ecuador. Own elaboration.

Furthermore, in this spending-product approach, consumption as a function of national income allows us to observe how these higher collections, higher salaries and higher sales drive aggregate demand and the national product via household, business and government spending, given that the marginal propensity to consume (MPC) determines that for each additional dollar of income, consumption spending will increase in the same proportion, but also, each additional dollar of income can go to savings given the marginal propensity to save (*MPS*), considering the following equation: $MPC + MPS = 1$. In Tables 2 and 3 you can see how consumption has been determined based on national income, and based on the marginal propensities of consumption, how savings have been determined in Ecuador, which shows that in the period 2007- 2017 greater gross savings are obtained.

Table 2. Consumption and savings based on national income, 2000-2024, millions of dollars.

VARIABLES / YEARS	2000	2007	2017	2024 (e)
Gross Domestic Product GDP	**17.531**	**49.849**	**104.296**	**121.710**
+ Primary income of the Rest of the World	98	259	133	238
- Primary income to the rest of the world	1.022	2.305	2.570	2727
= Gross national income	**16.607**	**47.802**	**101.858**	**119.222**
+ Current Transfers from the Rest of the World	1.317	3.246	3.678	5.808
- Current Transfers to the Rest of the World	35	149	801	1.170
= Gross Disposable Income	**17.888**	**50.898**	**104.735**	**123.861**
- Total Final Consumption	**12.821**	**37.670**	**77.675**	**96.358**
of homes	11.151	32.096	61.629	78.936
of General Government	1.670	5.574	15.197	17.421
of ISFLs that serve households			849	1.156
= Gross Savings	**5.067**	**13.229**	**27.060**	**27.503**
- Gross Capital Formation	3.009	9.131	27.409	27.071
Gross Fixed Capital Formation (FBKF)	2632	8208	26.496	26.485
Variation of existences	378	923	913	587
+ Capital Transfers from the Rest of the World		66	99	92
- Capital Transfers to the Rest of the World			4	11
- Acquisition of non-financial assets		3	-11	11
= Net Loan	**2.058**	**4.161**	**-265**	**501**

Source: Central Bank of Ecuador. Own elaboration.

To give greater support to the previous table, let us assume that an amount of savings *(S)* affects investmentdecisions *(D)* in equal proportion; if other factors do not vary, we would have a decreasing function $\frac{\Delta K}{\Delta t}$ of the capital stock deflated by prices *(K)* at a given time. And if we consider that investment decisions *(D)* are an increasing function of gross savings *(S)* and the rate of variation of total profits $\frac{\Delta P}{\Delta t}$, then we would have a linear relationship represented in the following way:

$$D_t = aS_t + b\frac{\Delta P}{\Delta t} - c\frac{\Delta K}{\Delta t} + d \quad (6)$$

Where *d* is a constant subject to changes in the long term, and if we consider the investment in fixed capital *(F)* equal to the decisions to invest *(D)*, then for each lag or previous linear period (τ), would have:

$$F_{t+\tau} = D_t \quad (7)$$

If we replace equation 6 with equation 7, we would have the equation of investment in fixed capital as a function of the stock of capital deflated by prices at a given time, of gross savings and of the rate of change of total profits:

$$F_{t+\tau} = aS + b\frac{\Delta P}{\Delta t} - c\frac{\Delta K}{\Delta t} + d \quad (8)$$

If we assume that the coefficients *a* and *c* are equal to zero, and *d* is the depreciation of capital, then the net investment will be determined by the variation in gross profits, defining the principle of acceleration of investment, with which we would have:

$$F_{t+\tau} = b\frac{\Delta P}{\Delta t} + d \quad (9)$$

As Kalecki (1956: 101) points out:

"It is true that the acceleration principle establishes a relationship between net investment and the rate of variation of production and not profits, and that the theoretical foundations are different, but the results are almost the same due to the interrelation that exists between profits and total production"

That is, as can be seen in Table 3, based on the acceleration principle, greater public investment will generate greater private investment, thereby greater production, greater savings, and therefore greater profits. In the period 2007-2017, greater savings are generated as a result of greater investment due to the acceleration effect, in this course of the economic cycle that we have experienced in Ecuador.

Table 3. Difference and variation by period, disposable income, total consumption and national savings, 2000-2024.

Period / Millions of dollars	**2000-2007**		**2007-2017**		**2017-2024**	
	Difference	**Variation (%)**	**Difference**	**Variation (%)**	**Difference**	**Variation (%)**
Gross Disposable Income	33.010	185	53.837	106	19.125	18
Total Final Consumption	24.849	194	40.005	106	18.682	24
Gross Savings	**8.161**	**161**	**13.832**	**105**	**443**	**2**

Source: Central Bank of Ecuador. Own elaboration.

In Figure 3 can be noted that disposable income is increasingly higher based on greater collections and national product (see Figure 1), just as consumption is proportional to disposable income, and as a result there is savings, to difference from 2018 as result of lower public spending and investment (see Table 1).

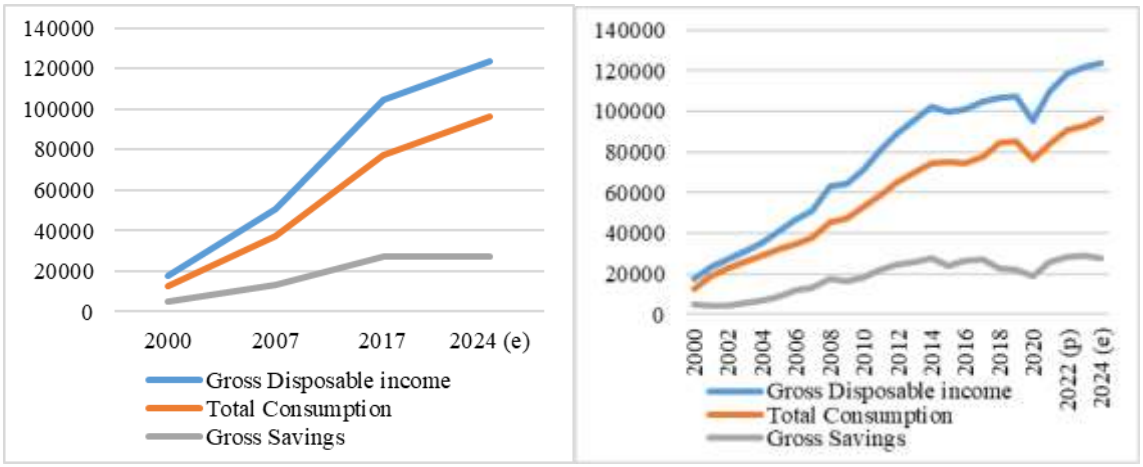

Figure 3. Gross disposable income, total consumption and gross savings, Ecuador, 2000-2024, millions of dollars

Source: Central Bank of Ecuador. Own elaboration.

Likewise, when analyzing the Keynesian investment function, it does not change because is not tied to the level of national income or profit expectations but rather to interest rates (see Figure 5), but growth expectations to do changing the investment function because aggregate spending varies with the current level of product (GDP). As can be seen in Figure 4, the investment function acts with aggregate spending, that is, as families, companies and the government demand more, investment increases, which directly affects the product, considering that government spending is due more to political factors than to the level of real GDP, that is to say, not because GDP is greater will public spending also be higher, or vice versa, but rather public spending is due to economic decisions and government applications, for example, a neoliberal program of fiscal adjustment and reduction in the size of the state does not reduce aggregate spending because the GDP does so, it is reduced because obeys to an ideology or an expanded service program (SAF) with the IMF.

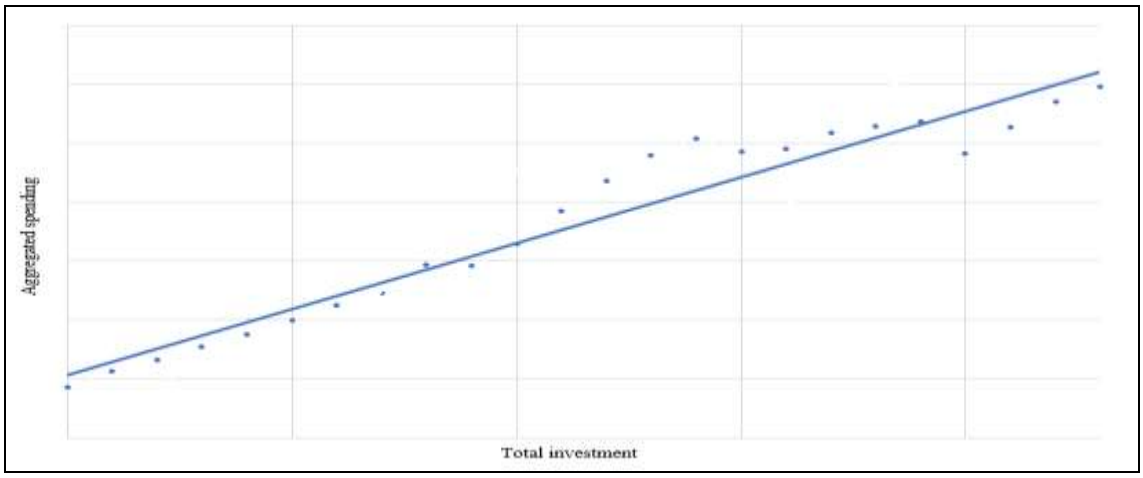

Figure 4. Investment and aggregate spending, 2000-2024, millions of dollars.

Source: Central Bank of Ecuador. Own elaboration.

In the same way, investment has an inverse relationship depending on interest rates, as seen in Figure 5, where the red line shows the investment amount and the blue line shows the interest rate, although the investment is due, in addition to interest rates, to technological changes or new technological opportunities, expectations about growth, price of key inputs (materials and raw materials) and tax incentives, among others.

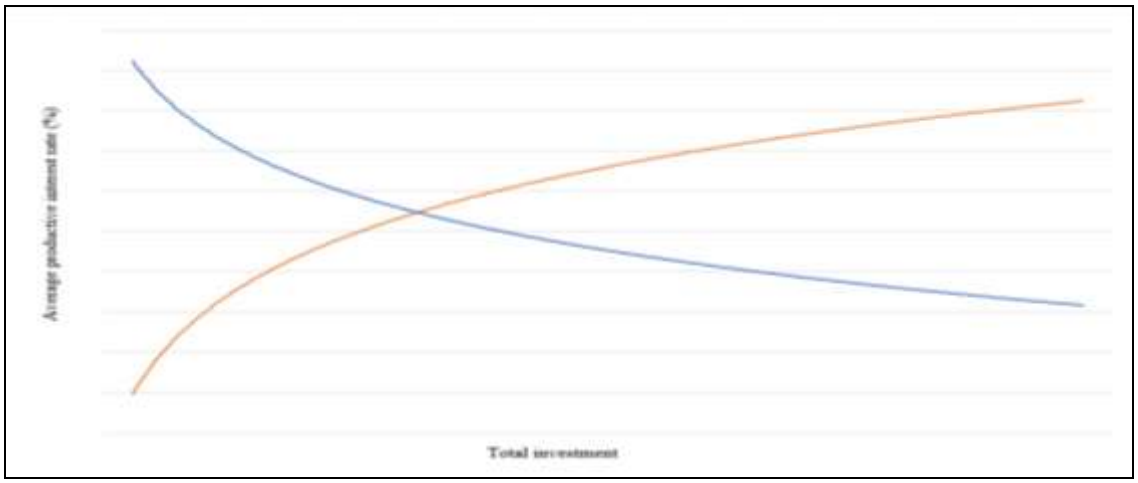

Figure 5. Investment function, 2007-2024.

Source: Central Bank of Ecuador. Own elaboration.

Finally, the function of exports and imports depends on the pattern of purchase or demand for new products, or the pattern of purchase or demand that the country has from abroad. In this sense, exports do not change because there is a change in the size of the internal economy, but rather due to the demand and purchasing power of other countries; while imports change according to our productive structure and level of production, that is to say, if we produce less or do not produce a certain product, then we will have to import, and these values will be negative because the expenditure on imported goods is subtracted from the expenditure on internal consumption.

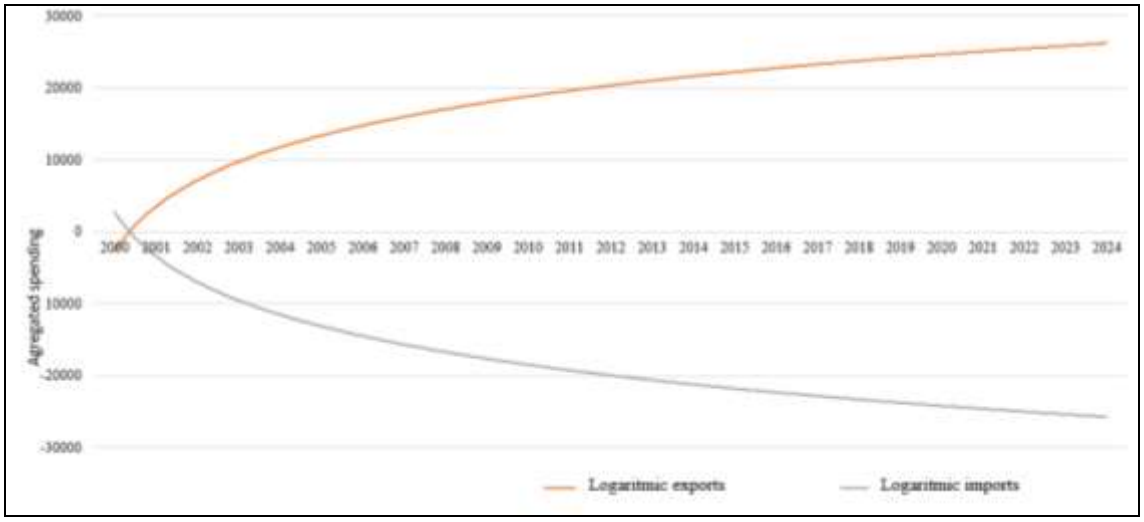

Figure 6. Function of exports and imports, 2000-2024, millions of dollars.

Source: Central Bank of Ecuador. Own elaboration.

In Figure 6 can be noted that imports have a negative slope because is determined by the marginal propensity to import (*MPI*) which is outside national income and represents a negative sign; while exports have a positive slope because is part of national income and is determined by the marginal propensity to export (*MPX*). Every time imports increase and there is a greater outflow of dollars, the income gap expands, showing effects on the balance of payments, and, therefore, indebtedness to cover that deficit as a result of greater outflow of foreign currency, affecting dollarization.

3. Data and Methodology

3.1. Data

The data used for the macroeconomic variables has been taken from the official information of the Central Bank of Ecuador, Economic Commission for Latin America, Superintendency of Banks and Insurance of Ecuador in the period 2000-2024 (August).

The data used for the social variables has been taken from the official information of the National Institute of Statistics and Censuses of Ecuador in the period 2000-2024 (August).

3.2. Methodology

The methodology used is a descriptive analysis of the information worked on based on indicators determined in the mathematical theoretical proposal of the Kaleckian demand model for Ecuador. The method used is a quantitative method of descriptive statistics

The technique used has been the combination of data to form variables, in which macroeconomic and/or social variables are combined to determine indicators of aggregate spending, disposable income, consumption, investment, savings, debt-to-investment ratio, concentration, accumulation, degree of monopoly or oligopoly, distribution of income considering remuneration and gross operating surplus, deposits and credits, average interest rates, overdue loans of companies, sales and payment of taxes of companies, profits of companies, formation of economic groups. The instruments used have been the Excell and Stata statistical programs, as well as the indicators to relate the variables that allow defining the tables and graphs incorporated in the study.

4. Theoretical-Mathematical Proposal for a Demand Model: Evidence for Ecuador, 2000-2024

Keynes (1936) observed that demand fluctuates depending on consumption and investment, and even prices and wages did not respond immediately to these changes, but rather remained rigid, which posed an impediment for the economy to return to full employment and obtain the potential GDP. These rigidities were due to coordination failures, and the free market is incapable of correcting these failures, but rather the coordination failures are caused by the free market, hence the problem of the great depression in 1929. So, to correct these problems of coordination, the state had to intervene, to act on demand, and thus stabilize the economy, prices, and generate full employment with full production.

The response to this problem of instability of capitalism, recession and crisis, was that the state, being absent, not only does it not control the proper functioning of the market, but this absence is accompanied by lower demand, therefore lower public spending and investment. The economy contracted and with it the crisis, which is why the state had to inject money into the economy, and that implied a process by obtaining income via debt (in crisis, higher taxes should not be charged) to be directed to investment public in infrastructure, since public investment generates employment, with this the consumption of families increases due to this higher level of employment, the sales and income of companies as well, greater consumption and sales are obtained, which generates greater for the state income from collections, which will be used to pay the debt incurred.

In the Ecuadorian case, the 2008 Political Constitution refers to this principle, stating “Art. 290 paragraph 3. Public debt will exclusively finance investment programs and projects for infrastructure, or those that have the financial capacity to pay.” Figure 7 shows us the relationship between total debt and public investment, in which a lower relationship implies that more debt was used for public investment and vice versa, and we can note that in the periods 2000-2006 and 2018-2024, the debt was used to a lesser extent for public investment, unlike the period 2007-2017, in which this debt was directed to public investment, in compliance with the constitutional mandate. The result is evident, in the period 2007-2017, greater product, greater collection, greater aggregate expenditure, greater income, greater salaries, greater savings were generated, as Figures 1 and 3, and Tables 1 and 2 show in conditions where employment, poverty and income distribution (Gini) improved strongly, as noted below (see Figure 13).

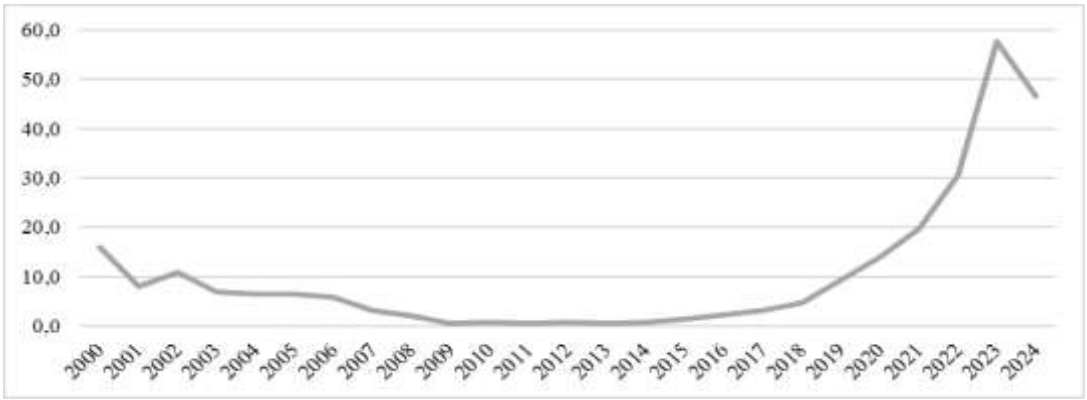

Figure 7. Total debt to public investment ratio, 2000-2024.

Source: Central Bank of Ecuador. Own elaboration.

The reason for this result in the period 2007-2017 is that public spending and investment generate two effects, on the one hand, an accelerator effect, that is, public spending and investment generate an accelerating effect in the economy, via greater private investment which increases total investment. Figure 8 shows the accelerating effect of public investment on private investment, since, when the state builds roads, ports, airports, hydroelectric plants, schools, hospitals, etc., the one who ends up building is the private sector, which has to inject private investment, to later be returned by the state through the public procurement process. As noted in Varela (2021):

"While in Rafael Correa's government, public assets / external public debt (90,000 / 16,600 in millions of dollars) generated 6.5 times assets over debt; in the Moreno´s government, public assets / external public debt (50,000 / 21,181 in millions of dollars) generated 2.4 times assets over debt. In addition, equity also shows the generation of savings that accumulate, with equity being the difference between assets and liabilities. While in the government of Rafael Correa, equity = assets – external liabilities (90,000 - 16,600 in millions of dollars) generated 73.4 billion dollars; In the Moreno government, equity = assets – external liabilities (90,000 – 36,181 in millions of dollars) generated 53,819 million dollars, that is, in the Moreno government, equity is reduced by almost 20,000 million dollars, in circumstances where the debt is greater." (p. 54).

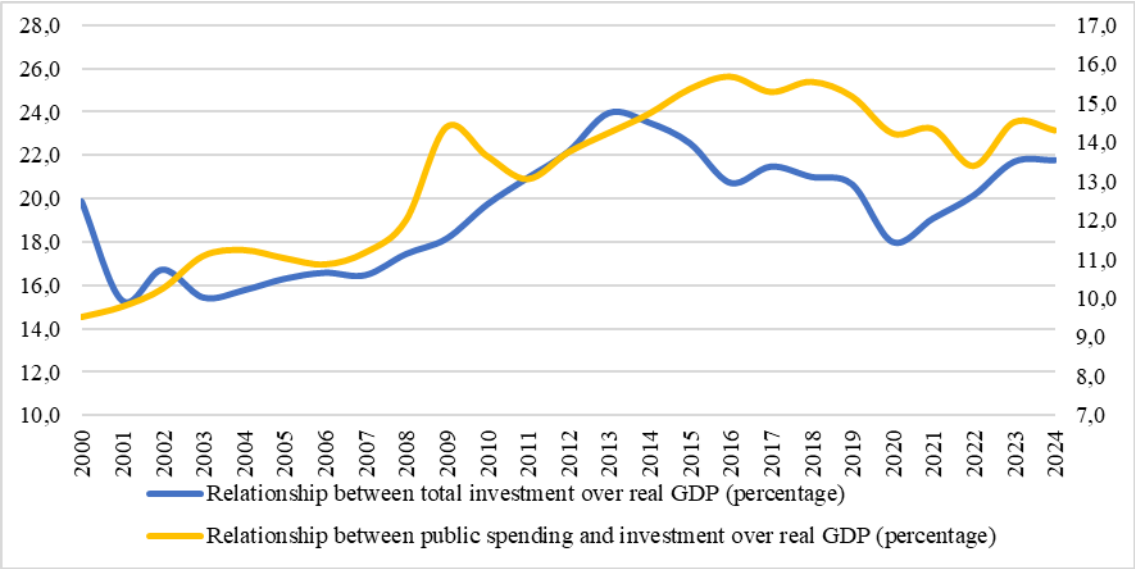

Figure 8. Relationship between public spending and investment over total investment (accelerator effect), 2000-2024.

Source: Central Bank of Ecuador. Own elaboration.

On the other hand, the multiplier effect of government spending and investment generates income to a company or person, which generates additional income and spending, and so on. In the same way, the multiplier effect of public spending and investment allows us to better understand the effectiveness of fiscal policy. Figure 9 clearly shows the multiplier effect in the economy given by public spending and investment, and we can see that the multiplier effect is greater from 2007 to 2017, in which the economy goes from 45,691 million dollars to 104,467 million dollars in 2017, an increase of close to 60,000 million (6,000 million on annual average), unlike the period 2000-2006 in which the increase is close to 28,000 million dollars (4,000 million on average annually), and in the period 2018-2024, the increase is close to 14,000 million dollars (2,000 million on annual average).

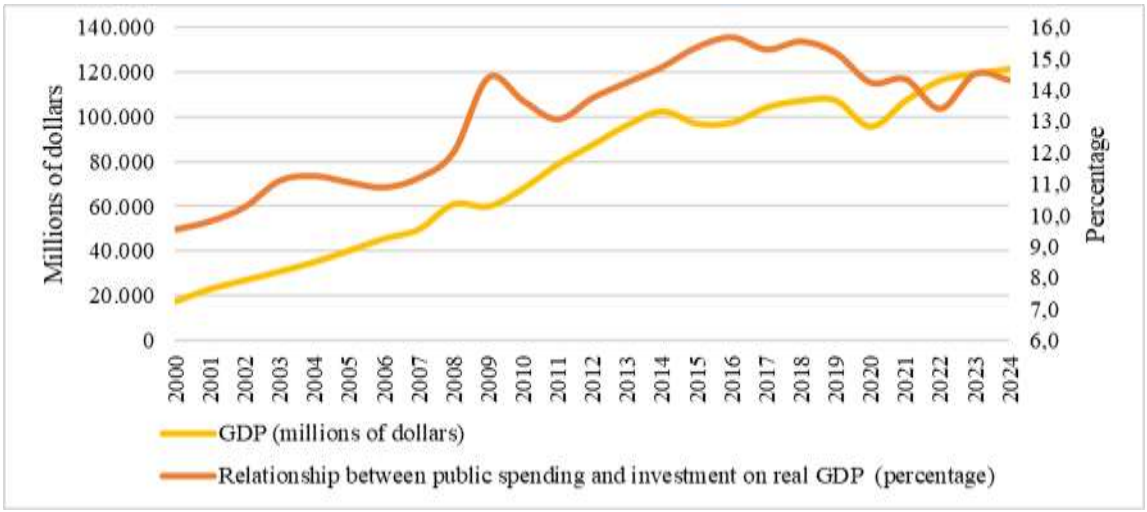

Figure 9. Relationship between public spending and investment on real GDP (multiplier effect), Ecuador, 2000-2024.

Source: Central Bank of Ecuador. Own elaboration.

The multiplier and accelerator effect of public spending and investment allows us to observe the changes generated in aggregate demand, and the results obtained by periods allow us to propose a demand model that reduces accumulation, and defines economic policies to stabilize the economy, prices, and generate full employment with income distribution. Before proposing the demand model that allows the reduction of accumulation in Ecuador, the degree of monopoly or oligopoly and the distribution of income must be analyzed, which Kalecki (1956: 12) defines as:

"When setting the price, the company takes into account its average prime costs and the prices set by other companies producing similar items. You need to make sure that your price is not too high in relation to those set by other companies, since then your sales will be greatly reduced, but also that your price is not too low in relation to your average prime cost, as this will greatly decrease *its profit margin*"

In this way, we can mathematically deduce the following:

$$p = mu + n\bar{p} \tag{10}$$

Where p is the price, u is the unit prime cost, $\bar{p}$ weighted average price of all companies, m and n are price and prime cost sensitivity coefficients. If equation 10 represents the semi-monopoly formation of prices, Kalecki (1956: 13) points out:

"The elasticity of supply and the stability of unit prime costs based on the volume of production considered are conditions incompatible with perfect competition. If this existed, the excess of the price p over the unit prime costs u would force the company to increase its production to the point where it will achieve its full productive capacity. Any company that remained active would produce at maximum capacity and the price would increase until reached the level at which demand and supply would balance".

If it is postulated that $n < 1$, we would assume that $p = \bar{p}$, then we would have the following equation:

$$p = mu + np \tag{11}$$

Deducing in this way that n must be less than unity, and the coefficients m and n characterize the pricing and cost policy of the companies, representing the degree of monopoly in which the company is, and if we divided equation 10 by the prime cost unitary, we would have:

$$\frac{p}{u} = m + n\frac{\bar{p}}{u} \tag{12}$$

Equation 12 would represent a line determined by m and n, which would reflect the degree of monopoly or oligopoly, and any change in the line, whether up or down, would determine a greater or lesser degree of monopoly or oligopoly, and given the price policy and company costs, the following equation would then be deduced:

$$\frac{p}{u} = \frac{\bar{p}}{u} \tag{13}$$

Where the point of intersection of the line would be given by the equation:

$$\frac{m}{1-n} \tag{14}$$

Equation 14 would reflect that an increase in *m* and *n* would determine an increase in the degree of monopoly or oligopoly, and vice versa. And if we consider that the coefficients *m* and *n* are different from company to company, then we would obtain the following equation:

$$\bar{p} = \frac{\bar{m}}{1-\bar{n}}\bar{u} \tag{15}$$

Where $\bar{m}$ y $\bar{n}$ are the weighted averages of the coefficients *m* and *n* of the entire sector. Likewise, the degree of monopoly or oligopoly would be determined by the straight line depending on the price and cost policy of the companies.

If the degree of monopoly increases, the curve shifts upward, since is greater the degree of monopoly, because of $\frac{\bar{m}}{1-\bar{n}}$ is greater, as Figure 10 shows, where in the period 2007 to 2017 there was a lower degree of monopoly, unlike the periods 2000-2006 and 2018-2024. This lower degree of monopoly or oligopoly between 2007 to 2017 was given by a greater participation of the state both in the generation of demand and in price control, since support prices were established between small producers and large exporters or large industrialists; the Superintendency of Power and Market Control and the Organic Monetary and Financial Code was reformed, which allowed a reduction in productive interest rates (see Table 7).

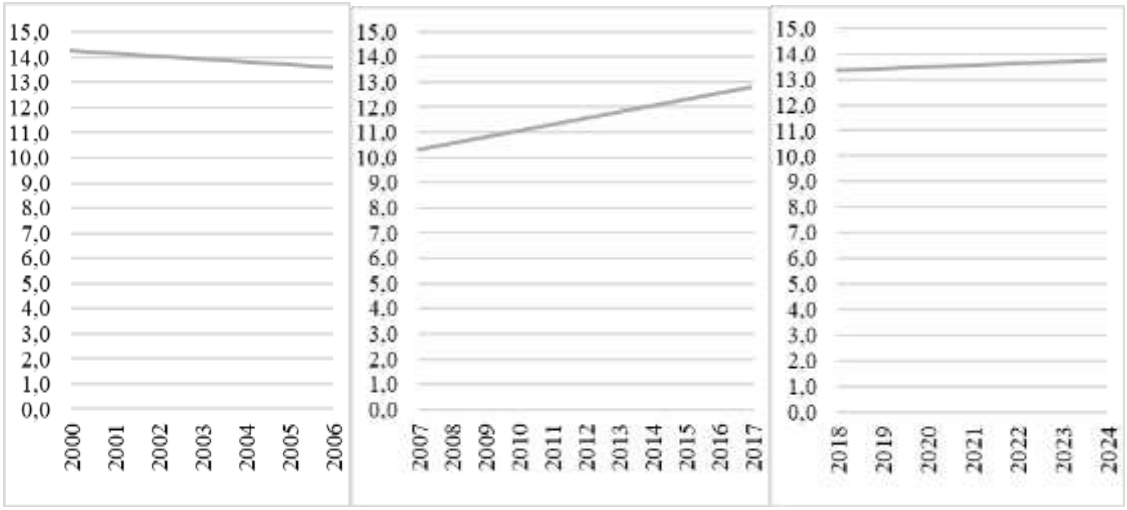

Figure 10. Relationship between materials-raw materials (MP) cost and average nominal salary, 2000-2024.

Source: Central Bank of Ecuador, National Institute of Statistics and Censuses. Own elaboration.

Furthermore, if is lower ratio, greater the productivity of work. Also, one must consider the possible causes of a greater degree of monopoly or oligopoly given by the growth of economic and financial groups, by the development of sales promotion that replaces price competition with advertising competition, even more so when companies can deduct advertising costs from their expenses or on the other hand, company expenses do not have any ceiling; added to the introduction of new accounting techniques or the use of tax havens to increase prime costs through price triangulation (which is why the certificate of origin of imports is necessary, to avoid this tax fraud, or to put ceilings on deduction of expenses to imports based on prices in the international market).

This determination of a greater or lesser degree of monopoly has defined not only gross income with respect to costs, but also the distribution of income between the share of capital and the share of wages. The equation for the participation of remunerations in gross income would be:

$$\frac{V}{Y} = \alpha + \frac{B}{Y} \quad (16)$$

Where *V* is the value of the remunerations and *Y* is the gross national income, α is a positive coefficient and less than 1 that marks the sensitivity of the remunerations on the gross income, *B* is a positive constant and subject to changes over time, and the gross profits before taxes (gross operating surplus-EBE) is the difference between the participation of *Y* and *V* and is expressed by the parameter π. If π is replaced in equation 7 we would have the equation for the participation of remunerations and EBE:

$$\frac{Y-\pi}{Y} = \alpha + \frac{B}{Y} \text{ then } Y = \frac{\pi+B}{1-\alpha} \quad (17)$$

As we can see in Figure 11, the gross income over *MP* cost is lower from 2007 to 2017, precisely because stated was above, the degree of monopoly or oligopoly when reduced affects the price, since prices are no longer set upwards, but tlhese tend depending on the level of economic activity and production. However, this reduction in gross income over the *MP* cost does not imply a reduction in sales, quite the opposite, and the impact on collections (see Figure 1) is greater during that period 2007-2017. Quite the opposite happens in the periods 2000-2006 and 2018-2024.

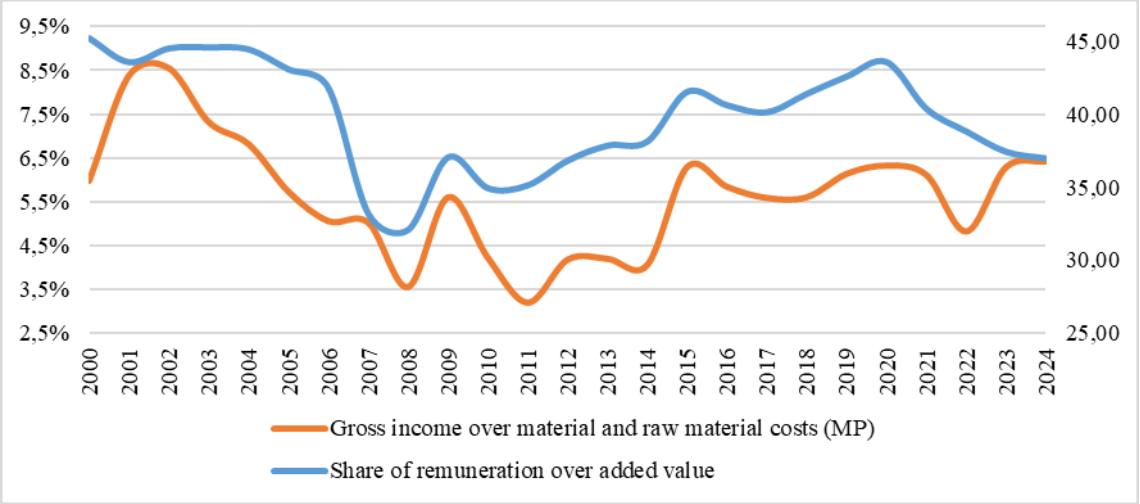

Figure 11. Gross income over material and raw material costs (MP), and share of remuneration over added value, 2000-2024.

Source: Central Bank of Ecuador, National Institute of Statistics and Censuses. Own elaboration.

Furthermore, the reduction in the degree of monopoly changes the participation of remunerations and EBE in gross income, as shown in Figure 12. The distribution of national income as a determinant of the participation of wages in income allows, as Kalecki (1956: 29) pointed out, that "the added value, that is, the value of the products minus the cost of materials (*MP*) is equal to the sum of salaries, overheads, and profits," therefore, the relationship between gross revenues and prime costs is determined by the degree of monopoly. If we consider that:

$$\text{overhead + profit} = (k-1)(W+M) \quad (18)$$

Where *W* is the total wages or remunerations, *M* is the cost of materials (*MP*), and the relationship between gross income and prime costs is *k*, we can determine the participation of wages in the added value, as follows:

$$w = \frac{W}{W+(k-1)(W+M)} \quad (19)$$

And if *j* is the relationship between the cost of materials and the total salaries or remunerations, we would have:

$$w = \frac{1}{1+(k-1)(j+1)} \quad (20)$$

Equation 20 indicates that "the participation of wages in the value added is determined by the degree of monopoly and by the relationship between the total expenditure on materials and the total amount of wages...they also depend on the importance of some industries in the industrial complex" (Kalecki, 1956: 29). To

separate this importance, if we substitute *k* in equation 20, we would obtain the equation that determines the participation of wages in the value added determined by the degree of monopoly and by the relationship between the total expenditure on materials and the total amount of wages:

$$w' = \frac{1}{1+(k'-1)(j'+1)} \quad (21)$$

As can be seen in Figure 12, the participation of wages in the value-added shows changes in the periods 2000-2006, 2007-2017 and 2018-2024. This reduction in the degree of monopoly in the period 2007-2017, which reduces the income-to-cost ratio, was accompanied by a greater share of remuneration over the added value, in which the improvement in the share of remuneration extends even until 2019, as a rebound effect of what was done until 2017, where the intervention of the state, the strong demand from the state, price control and the stimulation of investment and production, results in an improvement in salaries, that is to say, the redistributive effect occurs as a consequence of a lower degree of monopoly or oligopoly.

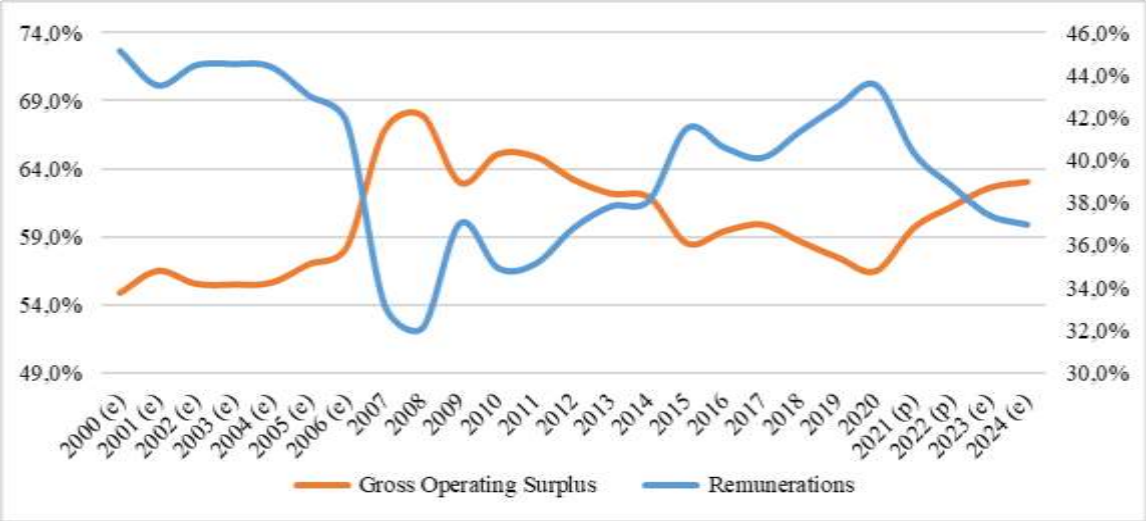

Figure 12. Share of Gross Operating Surplus (EBE) and Remunerations in Gross Value Added, percentage, Ecuador, 2000-2024.

Source: Central Bank of Ecuador, Internal Revenue Service. Own elaboration.

Furthermore, poverty and inequality are strongly reduced in the period 2007-2017 as a result of greater investment, growth, and demand, which generated less poverty and inequality, as can be seen in Figure 13. In this sense, the income distribution is a fundamental element in a demand model, because it comprises a macroeconomic distribution model, since the intervention of the state when generating demand will apply macroeconomic policies that seek: economic growth, price stability, employment, and distribution of income and wealth.

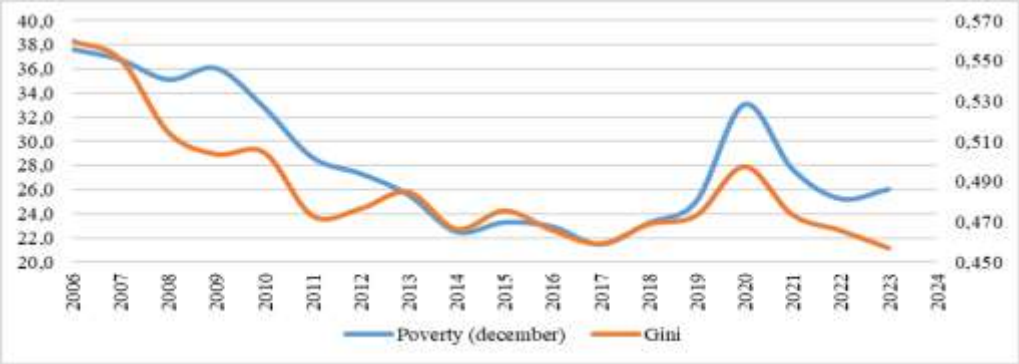

Figure 13. Poverty and inequality, 2006-2023

Source: National Institute of Statistics and Censuses. Own elaboration.

As could be seen in Figure 11, gross income over *MP* cost is lower from 2007 to 2017, since prices are no longer set upwards, but instead tend to decrease as the level of economic activity and production increases. The ratio of

gross income to *MP* cost is higher as of 2018, which implies that prices are set as a result of a greater degree of monopoly or oligopoly, which will be reflected in higher sales without GDP increasing, for example. which the gap between sales and GDP is greater, that is to say, a greater degree of monopoly determines a greater gap between sales and GDP, as shown in Figure 14, in which, there are no more sales because there is a greater product or production but there are more sales as a consequence of the increase in prices, due to greater price fixing in conditions of a higher degree of monopoly or oligopoly, as a result of the reduction of the state and control over the market, a policy carried out starting in 2018, as product of an expanded service agreement (SAF) with the IMF, which results in higher profits with lower tax payments (see Figure 15). And if another expanded agreement is signed with the IMF, the accumulation process would be greater and the gap between remuneration and EBE will widen even further.

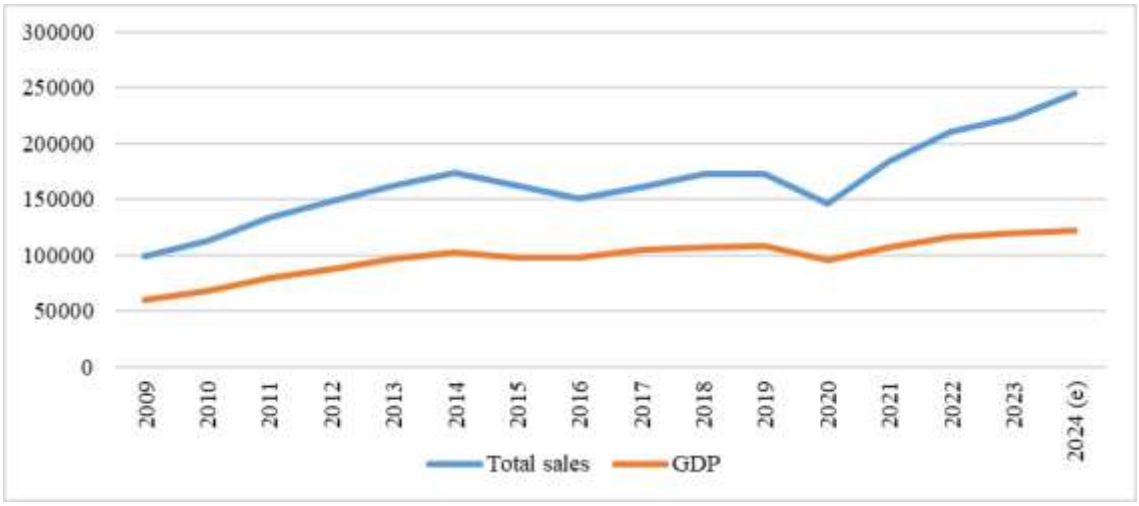

Figure 14. Total sales and gross domestic product, 2009-2024, millions of dollars.

Source: Central Bank of Ecuador, Superintendence of Companies. Own elaboration.

Figure 15 shows how companies' tax payments are reduced in relation to sales, as a result of pricing and higher prime costs, added to the increase in companies in tax havens (see Table 4), especially belonging to economic groups, which between 2017 and 2021 got triple time their appearance in tax havens. That is to say, not because sales have been higher, the payment of taxes has increased, but quite the opposite, the result of a higher degree of monopoly or oligopoly starting in 2018, the year from which there are more companies domiciled in tax havens, and the payment of taxes is lower.

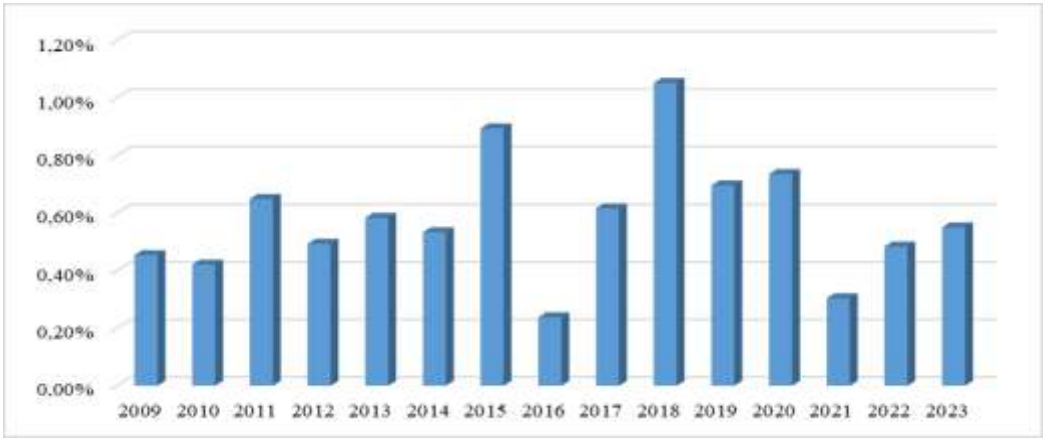

Figure 15. Relationship between company sales and income tax payments (IR), 2009-2023.

Source: Superintendence of Companies, Internal Revenue Service. Own elaboration. Note: The year of collection represents the previous year of economic activity or functioning of the market and the economy.

Table 4. Conformation of economic groups and domiciled in tax havens.

Year	Economic groups (EG)	Companies domiciled in tax havens (EDPF)	GE/EDPF relationship
2017	215	433	2
2019	240	455	2
2021	302	1.793	6

Source: Internal Revenue Service. Own elaboration.

The relationship between sales and tax payments defines the importance of analyzing profits and investment under simplifying assumptions. Given business consumption C_t, which is divided into a stable part A (autonomous expenditure) and a part proportional to actual profits after taxes $P_{t-\lambda}$, where λ is defined as the delay of the change in consumption compared to the change in the entrepreneur's income, then the consumption equation would be as follows:

$$C_t = qP_{t-\lambda} + A \quad (22)$$

In equation 22, q is positive and less than 1 (one) because the entrepreneur consumes only a part of his income, unlike the worker who can consume all of his income, so the entrepreneur's propensity to save will be close to 1 (one), while that of the worker is close to 0 (zero). A is constant in the short term while in the long-term changes depending on savings and profits, underprice setting and degree of monopoly or oligopoly. If we assume that workers do not save and there is a balance between foreign trade and the government budget (because there would be no external deficit), P would be equal to the sum of consumption (C) and the entrepreneur's investment (I), that is to say:

$$P = I + C \quad (23)$$

If we substitute equation 22 into 23, we would have:

$$P_t = I + qP_{t-\lambda} + A \quad (24)$$

Equation 24 shows that the profits would be determined by the current and past investment, and since q is less than 1 (one), then the coefficients 1, q, q^2, etc. would decrease rapidly, causing the profits to be multiplied arithmetically based on the investment made (current and past) in a given period ω, being able to define the equation as follows:

$$P_t = f(I_{t-\omega}) \quad (25)$$

Replacing equation 25 into 24, we would have:

$$f(I_{t-\omega}) = I + qf(I_{t-\omega-\lambda}) + A \quad (26)$$

Equation 26 shows the investment trend over time, i.e. $I_t = I_{t-\omega} = I_{t-\omega-\lambda}$, therefore:

$$f(I_t) = I_t + qf(I_t) + A \quad (27)$$

Equation 27 shows the function of investment at any level, therefore, if investment arithmetically determines profits, the equation would be:

$$P_t = \frac{I_t + A}{1-q} \quad (28)$$

What was previously analyzed, that the degree of monopoly, the increase in prime costs due to pricing, and the lower payment of taxes by companies in relation to the sales generated, shows the effect on the relationship between profits and investment, which had been reducing between 2009 and 2017 and from 2018 onwards began its increase process, in circumstances where the economy began a process of contraction (lower growth), even in the middle of the pandemic, 2020 year, where the economic contraction reached its worst point (-9.2%), the gross profits on the gross investment is higher, as Figure 16 shows.

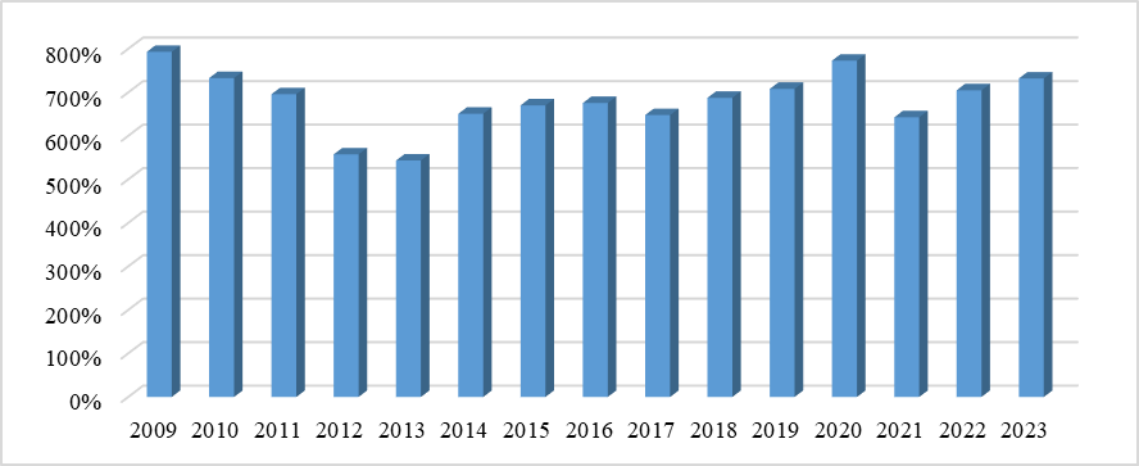

Figure 16. Ratio of gross profits over gross investment, 2009-2023.

Source: Superintendence of Companies, Internal Revenue Service. Own elaboration.

When referring to the interest rate, we must begin by clarifying that the period of analysis begins in August 2007, since from January 2000 to July 2007 the interest rates were not conditioned by segment but by days in the amount of deposits or credit, which varied even between private banks, private financial companies and mutual associations, under free contract operations, as the following table shows, which defined that interest rates were determined by the banks, that is to say, they were set the price of money until August 2007.

Table 5. Free contracting operations, 2000-July 2007.

Period \ No. of days		PRIVATE BANKS						BANKS PRIVATE FINANCIAL COMPANIES					
		Free contract operations						Free contract operations					
		1-30 días	30-83	84-91	92-175	176-360	361 more	1-30 días	30-83	84-91	92-175	176-360	361 more
2005	Dec	6,73	9,86	10,38	10,16	10,27	10,8	13,39	13,04	13,39	13,35	13,21	13,03
2006	Dec	7,41	10,21	10,24	9,97	9,89	10,63	13,75	13,78	13,78	13,73	13,8	13,3
2007	Jul	10,01	10,85	10,79	10,49	11,4	11,84	13,48	13,45	13	13,07	12,61	13,22

Period \ No. of days		MUTUALIST ASSOCIATIONS					
		Free contract operations					
		1-30 días	30-83	84-91	92-175	176-360	361 more
2005	Dec	-	12	13,43	12,05	12,07	12,2
2006	Dec	-	-	13,83	-	13,29	11,87
2007	Jul	-	12,05	12	-	12,52	12,18

Source: Central Bank of Ecuador. Own elaboration. Note: Reference values of rates that did not include administrative expenses and commissions.

From august 2007, interest rates are defined by credit segments, as a source of money demand, as the following Table shows, in conditions where the interest rate is reduced over time, this condition has to do with the financing motive -more than with the savings motive-, as Keynes himself stated "I should, I think now, have placed more emphasis on it when I analyzed the various sources of demand for money" (1937: 21). Therefore, starting in 2007, a decrease in the interest rate was required because investment decisions were increasing (companies require more financing because there were no savings that would finance it), and therefore, the required financing had to be constant for a given level of production in conditions of greater national product, which implied additional financing in situations of cyclical fluctuations, and the financial sector is the only sector that could finance an additional demand for money. Kalecki explained in a system without government and closed, that previous spending decisions of companies determine the profits they have, and, therefore, the source of initial financing cannot come from the companies but from the financial sector.

Table 6. Evolution of average interest rates, Ecuador, 2000-2024.

	Productive average	Trading Average	Average consumption	Educational average	Microcredit average	Housing average
2007 (aug)	18,63	-	26,64	-	32,88	15,07
2007	13,19	-	23,09	-	30,65	13,09
2008	10,36	-	17,96	-	24,13	11,10
2009	10,29	-	18,43	-	23,96	11,24
2010	10,15	-	16,12	-	22,00	10,86
2011	10,05	-	16,11	-	21,86	10,99
2012	10,05	-	16,11	-	21,86	10,99
2013	10,05	-	16,11	-	21,86	10,99
2014	10,06	-	16,13	-	21,83	11,03
2015	10,10	10,30	16,70	8,31	27,28	8,05
2016	10,14	10,20	17,02	9,50	26,23	8,04
2017	9,81	9,94	16,95	9,50	26,11	7,96
2018	10,21	10,07	16,96	9,49	24,85	7,79
2019	10,12	10,17	16,89	8,22	24,71	7,80
2020	10,18	10,35	16,98	8,31	24,75	6,90
2021	9,80	-	16,76	7,84	23,03	6,85
2022	9,70	-	16,43	7,85	22,47	6,62
2023	9,89	-	16,43	7,81	22,38	6,63
2024 (jan)	11,02	-	16,50	7,83	22,63	6,72

Source: Central Bank of Ecuador. Own elaboration.

Furthermore, as an understanding of interest rates, Kalecki (1956: 76-77) points out:

"The short-term interest rate is the remuneration paid for depriving yourself of the comfort of having cash in its purest form (it covers some costs and inconveniences that miss the investment operations themselves or investment costs). When holding money is compared to holding short-term bills, the only difference is that the bill cannot be used directly to settle an interest-bearing transaction. However, when comparing holding money to holding bonds, you have to take into account the risk that the price of the bond will decline. We conclude that the velocity of money, V, is an increasing function of the short-term interest rate. Consequently, given the function V, the short-term interest rate is determined by the value of transactions and the money supply, which in turn is determined by banking policy".

As there is endogenous creation of money, and every deposit becomes credit and every credit becomes a deposit, the total amount of deposits is above credits, this shows that deposits are used to make credits, in an endogenous creation of money, where the deposit margin is higher between the years 2008 to 2017, possibly due to the fact that the Central Bank acted as a state entity and definer of monetary and financial policies, subsequently decreasing in 2019 and 2020, an improvement in 2021 and returning to be reduced in the 2022 and 2023 years, in which deposits fall below credits, possibly due to having an Autonomous Central Bank or due to the refinancing and rescheduling carried out after the pandemic that causes more credits to appear when in reality that has not happened. The factors for the variation in the amounts of deposits and credits can be many, the segmentation of credit, economic activity, the level of employment, consumption, the interest rate, among others.

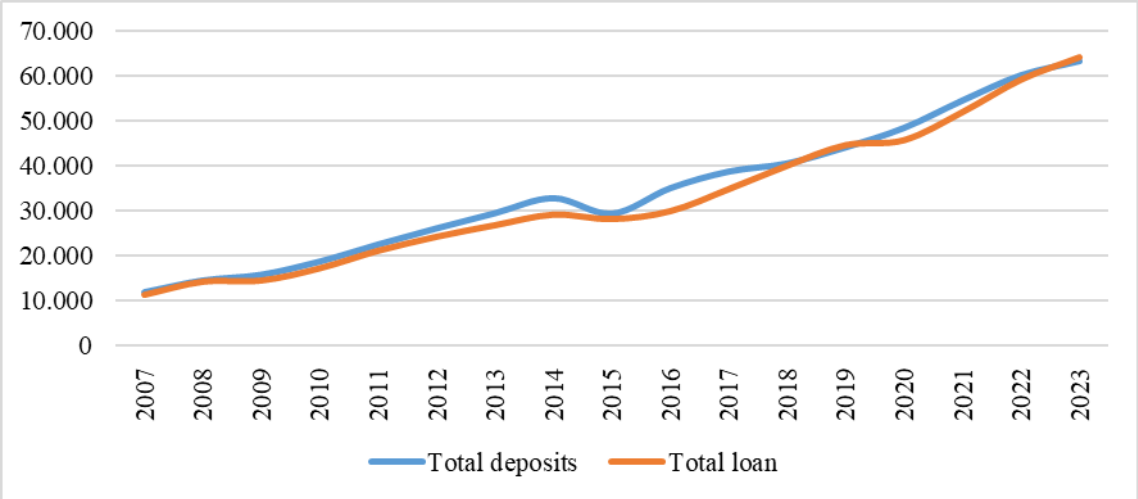

Figure 17. Total, deposits and loans, 2007-2023, millions of dollars.

Source: Central Bank of Ecuador. Own elaboration.

Furthermore, there is a direct relationship between the product and the deposits, that is, as the product has increased, the deposits have grown by the same magnitude, and with this the companies past due portfolio is reduced. That is to say, greater product (GDP) generates less past due portfolio in companies, and when the product stabilizes, even when it stagnates, the past due portfolio remains stable, since companies have greater sales, lower costs, and produce more paying less for the money obtained for financing.

The reduction in the productive interest rate between 2007 and 2008, and the subsequent stability in the interest rate, causes the companies past due portfolio to reduce and subsequently stabilize, since by lowering the interest rate there is more investment, with this, more production is reflected in more product and with it, greater sales and greater income for companies. And since 2009, where the productive interest rate remains low at around 9%, the past due portfolio also remains at around 1%. That is, the almost 10-point reduction in the productive interest rate generated, starting in 2012, a reduction of 5 points in the companies past due portfolio.

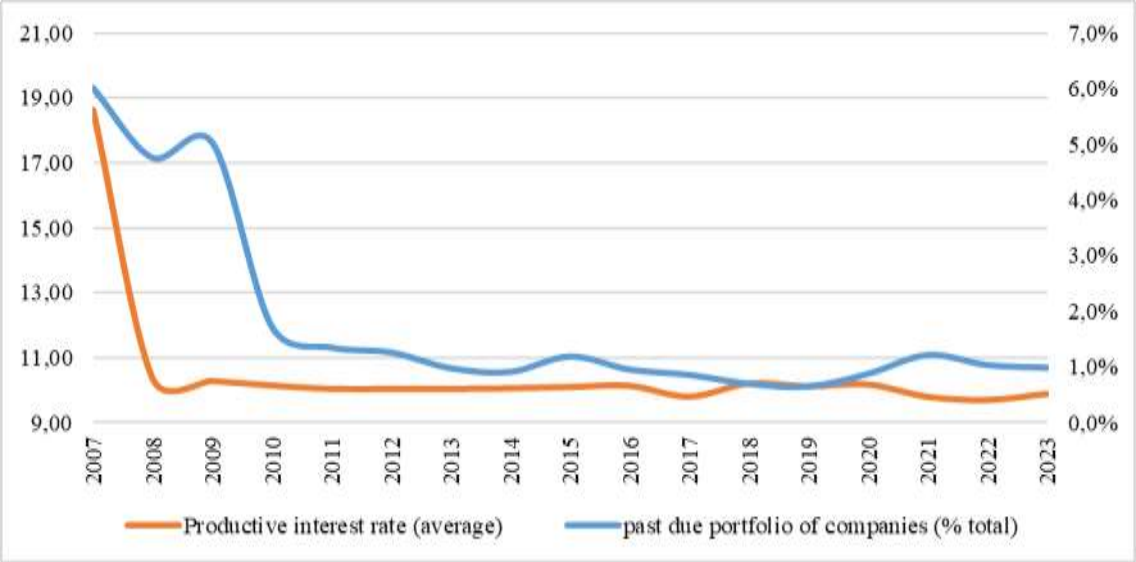

Figure 18. Productive interest rate versus past due portfolio of companies, 2007-2023, percentage.

Source: Central Bank of Ecuador. Own elaboration.

5. Kaleckian Demand Model to confront the disparities that have occurred in Ecuador, reduce accumulation and generate greater well-being

With the theoretical-mathematical definition and the evidence found, we can point out that this Kaleckian Demand model must focus on two large components:

5.1. Greater intervention and role of the state

This implies defining the economic-financial functions of the state that allow correcting market failures to meet the sustainable development goals (SDGs), therefore, for the correct functioning of the economy, the state must move from healthy finances (neoclassical, in which the budget balance must be maintained to avoid generating fiscal deficits, although this never works) to functional finance (Post-Keynesian, where the deficit must be a function of effective demand and the needs of the population, and when requires more goes into deficit, and in the long term the deficit is reduced after the needs of the population are covered). To achieve this, the role of the state in the economy is to guarantee the functioning of the economic system by applying measures to redistribute wealth, offering public goods and services, and controlling monopolistic or oligopolistic companies. To do this, the state must carry out the following activities linked to public economic policies:

a. Regulate economic activity:

"To avoid lack of competition or degrees of monopoly or oligopoly, as well as states of concentration in the economy, that is to say, situations in which one or several companies are strong enough to influence the price of a good or service and the quantity of that good or service to be produced" Varela et al (2020: 852)

b. Generate stability of the economy:

"To avoid economic cycles and the economic problems that can arise from these variations in the economic process" Varela et al (2020: 852).

c. Set taxes:

"That allow income for the state to cover the needs of the population, the delivery of public goods to the entire society and generate conditions of equity. To do this, you must use fiscal policy based on a progressive tax system. Furthermore, this function must seek to ensure Social Security, since Social Security functions as a fund or insurance that provides benefits to citizens, in exchange for the contributions contributed by each individual to the State through taxes" Varela et al (2020: 853).

d. Provide goods and services:

"To be delivered to the private sector and society, this function serves to regulate economic activity, as well as the provision of public goods and conditions of equity in the general population. Public goods are defined as the type of goods whose consumption is indivisible and from which no person can be excluded, so they must be offered by the public sector, since, if they are provided by the private sector, definitely the price increases and

access decreases. Therefore, public goods and services are shared goods and services, which contrasts with the individuality of private consumption" Varela et al (2020: 853-854).

e. Redistribute income:

"The State tries to reduce inequalities through various actions such as the establishment of equal opportunities, unemployment protection or the eradication of poverty" Varela et al (2020: 854).

To fulfill the functions of the state, a centrally planned economy is required, which requires that the market be subordinated to society and not society to the market. To do this, it establishes the regulatory parameters in which market failures are avoided. As noted in Varela et al (2020: 855), state intervention implies:

"…a Centralized State Planning (PCE) with a long-term objective that implies access to public, open and impartial information on geography, demographics, economic, social and environmental situation; with monitoring from citizens and accountability for citizens. To achieve these objectives, the universal agenda proposes growing to equalize and equalizing to grow, which must go hand in hand with state planning based on: 1) Macroeconomic policies: fiscal, monetary and financial that mitigate volatility and encourage investment, 2) Industrial policies that close internal and external gaps, 3) Environmental sustainability to change production and consumption patterns, with low carbon paths, 4) Protect terrestrial and marine ecological integrity. Conditions that will allow equalization by enhancing human capabilities and actively reversing disparities through: a) Eradicating extreme poverty in 2030, b) Universalizing rights and social benefits, c) Promoting inclusion from the labor system, d) Achieving greater territorial convergence and regional integration."

In this intervention system, the State clearly assumes a series of functions within the system. Specifically, the most relevant from the economic perspective are:

• First establish and then safeguard the legal framework that allows the market to function properly and correct some of its failures.

• Try to safeguard and restore the stability of the economy at a macroeconomic level. This actually includes the achievement of several of the main economic policy objectives: price stability; maximum level of employment; sustained growth, external balance, distribution of income and wealth, that is to say, developing actions that are oriented towards a better distribution of income among citizens, and promoting economic efficiency; in other words, contribute to an economically adequate allocation of resources taking into account all social needs.

- To fulfill these functions, it is necessary to specify the specific goal that is desired to be achieved, and from there the centralized planning of the state and spillover to the other levels of government is fundamental, in a condition of complementarities and competencies, since only in this way will be possible to assess later to what extent the economic policy was well oriented and to what extent the desired objectives were achieved.

When policies quantify the goal or goals to be achieved, they acquire a clear commitment to society, which allows it to assess the degree of success or failure of the government's action. The quantification of the objectives to be achieved can be carried out by one of the following alternatives:

• Setting the objective in terms of a desired level or absolute value.

• Establishment a percentage or rate of variation from a certain variable for a given period of time.

• Determine the maximum and minimum limits between which the magnitude in question must move.

Therefore, we must move from policy makers[1] to policy processes[2], where public policy integrates citizens, the private sector and the state in conjunction with nature, because through this the common interest or common good of society must be established, due to that governability and governance are important factors for meeting the objectives of maximizing the well-being of society.

5.2. Heterodox economic stabilization policies

To determine public policy, not only must centralized planning be established, but programs, projects and activities must also focus on meeting the sustainable development goals (SDGs). For all these reasons, a distinction must be made between the formulation and the formation of policies. Training constitutes a broader process than formulation since it begins before and ends after that in which the government designs them, since it begins in the street and ends throughout their application in the society that demands them. To reconstruct the

[1] Bureaucracy or government designs, implements and evaluates public policy.
[2] Government together with society defines the problem, provides alternatives, the state implements, society controls and evaluates.

process of public policies formation is necessary to take into account both the organizations that are officially called to participate in their design and the other actors that, formally or informally, usually intervene in the process, their interests, their alliances, their definition of the problem, their proposals and the scenarios from which it is possible for them to intervene.

On the one hand, compliance with good public policy requires: a) Broad foundations and clear objectives, since it is strategic; b) It has a normative orientation where ideological preferences are expressed that allow determining the marginal social benefit compared to other policies; c) It has an estimate of costs and financing alternatives, therefore it must have internal and aggregate consistency; d) It has an element of coercion, in which the public powers have their own elaboration that is often imposed on the community; e) It has an estimate of cost – social benefit, results – effects, decision – effect, these estimates focusing on impacts; f) It has data disaggregated by sex, to study and evaluate the potentially different impact on the lives of men and women; g) Takes into account the different population groups that are involved and may be affected, marked by ethnic-cultural differences, age, race or social class, disability, etc.; h) It has a territoriality since those are implemented in specific geographical spaces; i) Those have a multisectoral tendency because it is articulated; j) It has economic, technical (experts, machinery, etc.), laws, and cognitive resources (technicians, experience, scientists, etc.), and public powers mobilize these resources to generate public policies; k) It is flexible and innovative since it directly addresses the causes, and is not afraid of innovation; l) It must be sustainable and able to withstand the test of time and therefore function well from the beginning.

On the other hand, the objectives of economic policy must be:

1. *Economic growth:* Achieve satisfactory production growth rates, including continuous structural changes in the productive fabric.

2. *Full employment:* Ensure the net creation of jobs to provide a reasonable standard of living for all skilled members of the available workforce.

3. *Price stability*: Maintenance of the general price level, or a reduced inflation rate.

4. *Balance of payments:* Reduce the external deficit in the medium term, maintain a level of foreign exchange reserves and solvency abroad, by strengthening the internal market and leaving dependence on the external market.

5. *Distribution of income and wealth:* Progressive reduction of the differences between personal income levels, the concentration of wealth and the provision of public goods.

The general objective should be an income redistribution policy that reduces inequalities between high-income earners and low-income earners and, above all, helps satisfy the basic needs of those layers of the population that earn lower incomes. State intervention to reduce income inequalities can be developed through various instruments depending on the objectives pursued (desired degree of equality, impacts on the allocation of resources, political pressure from various interest groups, among others). In this regard, three basic lines of the income redistribution policy can be proposed:

• Reduce the level of income concentration.

• Achieve equal opportunities.

• Allow the social integration of the excluded.

Meanwhile, the economic policy instruments to achieve these goals are very varied and admit different classifications, and governments have spending, tax, income and asset distribution policies.

Fiscal policy, fiscal action and income distribution: It contemplates the redistributive action associated with progressive taxation and the expansion of Social Security, where the automatic flexibility of the tax system predominates as an inherent quality of progressive taxation, Personal Income Taxation and other complementary tax forms, Integrated Health Systems, Social Security Systems, Unemployment Benefits, among others. As noted in Varela (2021):

"Fiscal policy must focus on a progressive and distributive system, this implies creating distributive taxes such as assets or wealth, extraordinary profits, capital, profits of large corporations, inheritances, etc., as well as how to design the progressive tax on legal entities, just as it is applied to natural persons, where the beneficiaries are the companies that generate more employment and production, because they are labor intensive, in order to pay less tax but generate more employment" (p. 62).

Monetary politics:

"…must focus on reducing the spread, lower active interest rate and higher passive interest rate. A higher passive interest rate encourages savings and liquidity in the financial system, and in this way the demand for credit can be covered by the existence of a greater money supply in the financial system. This implies defining or discussing that there is no liquidity problem or preference for liquidity since there is asymmetric information, where the financial system knows the amount of money saved and the amount of money available to lend... the active interest rate must be reduced so that the financial costs of the company are lower and therefore greater competitiveness through lower costs…In addition, the State must generate technological incentive mechanisms to strengthen the financial system, especially the cooperative system." (p. 62).

Foreign trade policy:

"…it must focus on strengthening the domestic market, discouraging imports of what we produce, and stimulating exports, specially manufacturing. Furthermore, foreign policy must be aimed at strengthening regional markets and integration processes based on complementarity." (p. 62).

Income policy:

"…it must be based on these policy changes, and will require a regulatory framework to improve wages. If production is greater, the demand for employment will be greater and, therefore, the salary will increase, increasing consumption, thereby increasing sales associated with greater production and investment. Furthermore, a change in oil and mining contracts is necessary, which ensures greater income for the State, with lower costs in both production, transportation and marketing" (p. 63).

The implementation of these measures based on these heterodox stabilization policies would generate, in an environment of reduced accumulation and greater well-being for Ecuadorians, the following financial results, as Varela (2021) has already determined.

Table 7. Revenue projection, millions of dollars, base year 2024.

Tax to be applied	Base year	1st year	2nd year	3rd year	4r year
Progressive tax system for companies (2.7% GDP)	3.286	3.450	3.623	3.804	3.994
Creation of a wealth tax (1.2% GDP)	1.461	1.534	1.610	1.691	1.775
Creation of an asset tax (2.8% GDP)	3.408	3.578	3.757	3.945	4.142
Increase in the tax on foreign currency outflows to 10% (2.2% GDP)	2.678	2.812	2.952	3.100	3.255
Return to advance income tax (0.32% GDP)	389	409	429	451	473
Foreign trade tariffs (0.78% GDP)	949	997	1.047	1.099	1.154
10% tax on extraordinary profits of banks and economic groups (0.4% GDP)	487	511	537	564	592
Process oil into derivatives (3.8% GDP)	4.625	4.856	5.099	5.354	5.622
Total, (15,7% PIB)	17.283	18.147	19.054	20.007	21.007

Source: Adapted from Varela, M. (2021).

6. Conclusion

Public spending generates a multiplier effect on total spending in the economy, but this depends on political decisions. Thus, an additional dollar of public spending will become a dollar of income for a person or company, who can allocate it to investment, consumption or savings. This greater public spending will in turn depend on greater state income, which must be directed to the economy for spending and investment. In the case of Ecuador, when marking the relationship of aggregate expenses over income after taxes, we can note that the multiplier effect of public spending occurred to a greater extent in the period 2007-2016, which in turn generated greater product, savings and consumption of families and companies.

When analyzing the expenditure – product in Ecuador between 2000-2024, the balance between aggregate expenditure and real GDP was 77,000 million dollars, corresponding to the 2011 year, while the potential GDP is 107,000 million dollars corresponding to the 2018 year, that is to say, there is a gap of 7 years to reach potential GDP. This gap will widen in the future because, starting in 2018, as a result of the SAF agreement with the IMF; the fiscal adjustment contracted spending, consumption, savings and investment, which determines that the gap will widen even more in the future. Additionally, greater public investment generates an accelerating effect on total investment, which has an impact on the country's product, disposable income, final consumption and total savings, as occurred between 2007 and 2016.

In a demand model, a response must be given to the problem of instability of capitalism, which generates contraction or recession and even economic crisis. The indicator that allows us to observe whether we are facing a recession or not is the ratio of total debt to public investment. If this relationship is close to zero (0), it indicates that more debt is being used for public investment, and this generates accelerating and multiplier effects in the economy, which allows the economy to be stabilized, generate employment and distribute wealth. But if this ratio is greater than 1 (uno), it indicates that the debt is being directed to cover debt or currency outflow, which further aggravates the recession or economic contraction.

In the case of Ecuador, between 2007 and 2016, this relationship is close to zero (0), which resulted in greater product, employment and distribution of income and wealth (less poverty and inequality). Thus, the product increased in this period by 60,000 million dollars, employment rose to 54% and the distribution of wealth allowed the participation of salaries in national income to be greater, generating less poverty and inequality.

A greater or lesser degree of monopoly will reduce labor productivity, because exploitation processes will occur, the result of which will be observed in a lower participation of wages in the product and therefore a greater participation of the gross operating surplus (EBE) in the national income. The indicator that determines the existence of a greater or lesser degree of monopoly or oligopoly is the relationship between the cost of materials and raw materials over the average nominal salary. If the line or score is close to zero (0) or lower, it will mean that there is a lower degree of monopoly or oligopoly and therefore a greater share of wages in national income, while, if the line or score is higher, it will mean that there is greater degree of monopoly or oligopoly and therefore lower participation of wages in national income. In the case of Ecuador, the lowest line or score occurred in the period 2007-2016, a period in which the participation of salaries in national income was higher, creating a better distribution of income that was reflected in lower poverty rates and inequality.

In the same way, a greater degree of monopoly or oligopoly determines that total sales increase without real GDP doing so. The indicator to mark this relationship is total sales and gross domestic product. If the gap between the lines is greater, it determines that there is a greater degree of monopoly with greater pricing, which causes sales to increase without the product doing so to the same magnitude. In turn, higher sales due to higher pricing and prime costs in conditions of a higher degree of monopoly or oligopoly, causes companies to pay less taxes with respect to the sales obtained. The indicator that establishes whether higher sales due to a larger product represents a higher tax payment is determined by the relationship between total sales over income tax payments. If the relationship is greater, it indicates that there is less pricing with a greater product, while if the relationship is less, it indicates that there is greater pricing without a greater product.

The degree of monopoly, the increase in prime costs due to pricing, and the lower payment of taxes by companies in relation to the sales generated, shows the effect on the relationship between profits and investment. If the ratio is greater, it means that there is greater investment and therefore greater profits under conditions of competition or a lower degree of monopoly or oligopoly, while if the relationship is lower it means that there is less investment and therefore greater profits under conditions of a higher degree of monopoly or oligopoly with higher prices and prime costs.

The intervention of the state to reduce the spread and interest rates for the productive sector will cause money to be created endogenously, since the existence of greater deposits will be directed to productive credit, with which the product, investment and savings will increase. In turn, this reduction in the cost of money for companies will be reflected in lower rates of default or past due loans for companies, as happened since 2007 in Ecuador. As of

2009, where the productive interest rate remains low at around 9%, the past due portfolio also remains at around 1%. That is, the almost 10-point reduction in the productive interest rate generated a 5-point reduction in the companies' overdue loans, starting in 2012.

This theoretical-mathematical proposal of a Kaleckian demand model, collected from the Kaleckian principles and postulates added to the empirical evidence found, allows us to define two large components to reduce accumulation and generate distribution processes:

The first component is greater intervention by the state to guarantee the functioning of the economic system by applying measures to redistribute wealth, offering public goods and services, and controlling monopolistic or oligopolistic companies that allow regulating economic activity (avoiding degrees of monopoly or oligopoly); generate economic stability through demand mechanisms (spending accelerator and multiplier effect); establish taxes to direct public spending and investment to cover the needs of the population and define mechanisms to reduce poverty and inequality; provide goods and services so that no one is excluded from it; and redistribute income to reduce inequality and poverty gaps. To establish these functions, the state must: a) First establish and then safeguard the legal framework that allows the market to function properly and correct some of its failures; b) Try to safeguard and restore the stability of the economy at a macroeconomic level.

The second component is to carry out heterodox stabilization policies through economic policies (fiscal, monetary, foreign trade and income) that allow achieving the sustainability of economic growth through continuous structural changes in the productive fabric; ensure net creation of jobs to provide a reasonable standard of living for all; price stability with greater supply and lower prices; establish a payments balance by strengthening the internal market and less dependence on the external market; and, distribute income and wealth through progressive reduction of the differences between personal income levels, the concentration of wealth and the provision of public goods.

References

Correa, R. (2023). La Justicia como virtud. Revista Propuestas para el Desarrollo, año VII, número VII, diciembre 2023.

Friedman, M. (1976). Nobel Lecture: Inflation and Unemployment. Nobel Foundation, Estocolmo. Reproducido en Journal of Political Economy, 85, junio de 1977. Versión castellana en ¿Paro o inflación?, Instituto de Economía de Mercado, Madrid.

Hansen, Alvin (1980). Guía de Keynes, México: Fondo de Cultura Económico, pp. 8-205.

Hayek, F.A. (2011). *Camino de servidumbre*. Madrid: Alianza Editorial

Kalecky, M. (1956). *Teoría de la Dinámica Económica*. México: Fondo de Cultura Económica.

Kalecki, M. (1960). El Trimestre Económico. En El Problema de la Financiación del Desarrollo Económico. Fitzgerald editor. Chile: CEPAL.

Kalecki, M (1963). Political Aspects of Full Employment. Marshall Society in Cambridge: Gran Bretaña.

Kalecki, M. (1976). *Sobre el Capitalismo Contemporáneo*. Barcelona: Crítica.

Keynes, J (1936). Teoría General de la ocupación, el interés y el dinero. México: Fondo de Cultura Económica.

Keynes, J. M (1937). Alternative theories of the rate of interest, The Economic Journal, Vol. 47, Nº 186 (June).

Marshall, A. (1890): *Principles of Economic*. MacMillan, London. (Versión española de la octava edición inglesa de 1920, Marshall, A. (1948): Principios de Economía, Aguilar, Madrid).

Marx, K; Engels, F (1848). *El Manifiesto Comunista*. Edición electrónica de www.philosophia.cl / Escuela de Filosofía Universidad ARCI.

Ricardo, D. (2004). *Principios de Economía Política y Tributación*. México: Fondo de Cultura Económica.

Robinson, J (1975). *Teoría Económica y Economía Política*. Primera edición, Barcelona: Martínez Roca.

Robinson, J (1984). *Ensayos Críticos*. Primera edición, Barcelona: Orbis.

Smith, A (1776). *Investigación de la Naturaleza y Causas de la Riqueza de las Naciones*, en traducción de Josef Alonso Ortiz, publicado en Valladolid, Biblioteca La Fragua.

Varela, M. (2021). Ecuador con rostro humano: políticas de estabilización heterodoxa para enfrentar el neoliberalismo. Revista Propuestas para el Desarrollo, año V, número V, octubre.

Varela, M.; Cerda, N.; Benavidez P. (2020). "Objetivos de desarrollo sostenible, agenda 2030: Intervención del estado en la economía para su cumplimiento". En Raquel Guzman y Ana Belen Nieto (coord.). Políticas públicas en defensa de la inclusión, la diversidad y el género, España: Universidad de Salamanca, pp.849-865.

Varela, M. (2023). *Post Keynesian Economic Studies for a Developing Country: Evidence from Ecuador*. Eliva PRESS.