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Inequality and Universal Basic Income: The case of Ecuador

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Abstract

The COVID-19 pandemic renewed interest in universal basic income (UBI) as a tool to mitigate the impacts of multiple crises. Although the advantages of UBI are well known—i.e., universal, unconditional, and sufficient—country-specific studies must be conducted to analyze country-specific conditions. This paper examines the implications of adopting a UBI policy in Ecuador. In this context, the study analyzes the effects of UBI on income inequality and the economy using a computable general equilibrium model. The main findings show that targeted scenarios reduce inequality more than universal ones. Additionally, the analysis finds that universal scenarios boost economic activity more than targeted ones. However, despite the positive results of this analysis, the strict implementation of a UBI program in Ecuador does not appear feasible in the short term because of complex existing economic, social, and political conditions.

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Desigualdad e ingreso básico universal: El caso de Ecuador

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Resumen

La pandemia de la COVID-19 renovó el interés en el ingreso básico universal (IBU) como una herramienta para mitigar los impactos de las múltiples crisis. Aunque las ventajas del IBU son ampliamente conocidas —es universal, incondicional y suficiente—, es necesario realizar estudios específicos por país para analizar sus condiciones particulares. Este artículo examina las implicaciones de adoptar una política de IBU en Ecuador. En este contexto, se analizan los efectos del IBU sobre la desigualdad de ingresos y la economía utilizando un modelo de equilibrio general computable. Los principales hallazgos muestran que los escenarios focalizados reducen más la desigualdad que los universales. Además, se observa que los escenarios universales impulsan la actividad económica más que los focalizados. No obstante, a pesar de los resultados positivos de este análisis, la implementación estricta de un programa de IBU en Ecuador no parece factible en el corto plazo debido a las complejas condiciones económicas, sociales y políticas existentes.

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1. INTRODUCTION

Universal Basic Income (UBI) is cash income paid by a government at regular intervals to all inhabitants of a territory, on an individual basis, and without imposing conditions (Ackerman et al., 2004). For decades, but especially during SARS-CoV-2 pandemic times, UBI was promoted as an effective and simple tool to reduce poverty (Lacey, 2017), inequality (Riedl, 2020), unemployment (Hensher, 2020), and to improve public health (Johnson et al., 2020). However, UBI remains controversial and is often described as a utopian policy not only because its implementation requires far-reaching political and economic reforms (Van Parijs, 2013), but also because several disadvantages are attributed to it. For instance, some evidence suggests that UBI could increase poverty and inequality (Piachaud, 2018), especially in developing countries (Banerjee et al., 2019). Notwithstanding, Ravallion (2019) argues that UBI policies do not constitute the cure for poverty for all and recommends analyzing each country individually. The author's argument becomes clearer by analyzing the results reported by Gentilini et al. (2020), who calculate the impact on poverty and taxation of implementing UBI, and concluded that the policy could reduce poverty, but financing it implies deep changes in the tax structure. For example, funding UBI would demand substantial increases in direct taxes on the top income decile—from 7,2 to 24,5 percent in Brazil; from 5,4 to 38,4 percent in Chile; and from 9,0 to 13,2 percent in Russia, among others.

The catastrophe caused by COVID-19 affected all countries worldwide, but African and Latin American were the most affected regions (World Bank, 2022). Moreover, the impact of the pandemic is heterogeneous in different ways and levels. Thus, a country-specific analysis is essential for proposing mitigation policies. To this end, this paper analyzes the effect of implementing a Universal Basic Income (UBI) in Ecuador, a Latin American nation of approximately 17,5 million people with an export-dependent primary economy. More specifically, 60 % of Ecuadorian export earnings come from the petroleum, gas, and mining sectors, and from the agriculture, cattle raising, aquaculture, and fishing (Hausmann & Klinger, 2010).

Despite being considered a natural-resource-rich country, Ecuador has historically exhibited high poverty rates, persistent inequalities, and a precarious labor market. Indeed, according to the Ecuadorian National Statistics Institute (INEC, 2019), before the pandemic, poverty and extreme poverty rates stood at 23,9 % and 8,7 %, respectively. Regarding income inequality, in 2019, the Gini coefficient reached 0,486. The labor market, however, presented more serious challenges, with the adequate employment rate at only 38,8 %, an underemployment rate of 17,8 %, and 46,7 % of the population belonged to the informal sector (INEC, 2020). In aggregate, poverty, inequality, and employment conditions are reflected in public health. Specifically,

27,2 % of Ecuadorian children under two years old suffer from chronic child malnutrition (INEC, 2018).

During the first months of the COVID-19 crisis, the social and economic conditions of the Ecuadorian population worsened, mainly because approximately 801.000 Ecuadorian workers lost their jobs (INEC, 2020). In 2020, poverty and extreme poverty reached 32,4 % and 14,9 %, respectively; the Gini coefficient increased to 0,5; adequate employment decreased to 32,1 %; underemployment reached 23,4 %, and the unemployment rate increased to 6,6 % (INEC, 2020).

Aiming to improve Ecuador's living conditions, diverse income transfer programs have been implemented during the last two decades—see Bonilla-Bolaños and Salazar-Mendez (2021). The Ecuadorian social system is highly targeted: each program has its own beneficiaries, amounts, and conditions. The beneficiaries of these programs are people living in extreme poverty and poverty, disabled people, older adults, people suffering from catastrophic, rare, and orphan diseases, and children under 14 living with HIV/AIDS. The social system currently includes ten income transfer programs and reaches approximately 1 million beneficiaries at a cost of 1.396 million dollars[1].

According to Bonilla-Bolaños and Salazar-Mendez (2021), the various selection criteria, amounts, and conditions of the Ecuadorian social system have evolved into a kind of puzzle that requires robust institutions and strong technical and technological mechanisms to operate. Moreover, the management of each program is expensive and is not exempt from the typical errors associated with targeted income transfer programs—such as inclusion and exclusion errors.

Due to the COVID-19 pandemic, an emergency income-transfer program known as the Family Protection Bonus was implemented in Ecuador. The program was a one-time transfer of one hundred and twenty dollars (USD 120), paid in two equal installments of sixty dollars, each during April and May 2020. Its objective was to provide financial support to households affected by the declaration of the health emergency, mobility restrictions, and nationwide lockdown.[2]. According to the Ecuadorian Ministry of Inclusion—the institution responsible for social issues—, the emergent transfer reached around 400.000 beneficiaries in extreme poverty, who were contacted through a "personalized mass message". In the middle of a pandemic, such an improvised communication strategy may have been the best possible option, but the probability of including people who receive transfers despite not being poor and exclude the poorer people could increase. Additionally, considering the rising unemployment levels during the pandemic, the number of new beneficiaries seems insufficient.

[1] https://www.gastopublico.org/informes-del-observatorio/en-que-se-gasta-el-presupuesto-del-mies
[2] Executive Order 1022 from Former President Lenin Moreno.

In this context, the discussion about the benefits of universal social policies gained tradition in Latin America. In Ecuador, even though a UBI may seem utopian, some UBI policy proposals appeared as a response to the increased inequality and poverty. However, some of them lack the defining characteristics of a true UBI. For example, a bill for a non-universal transfer—referred to as Unified Basic Income—was submitted to the National Assembly and promoted as a UBI, despite not meeting the universality criteria.[3] Academically, studies such as Falconí et al. (2020), Echeverría (2021), and Bonilla-Bolaños and Salazar-Mendez (2021) analyze a UBI proposal for Ecuador.

Globally, the debate on UBI has been intense. In Ecuador, the discussion is just beginning and could stop if academics and policymakers do not fuel it. Therefore, this research aims to contribute to the national debate by analyzing an ex-ante assessment of the potential impacts of implementing a universal basic income in Ecuador—specifically its effects on income inequality and on macroeconomic dynamics—using a computable general equilibrium model (CGEM).

A UBI proposal forms part of the set of social policies needed to modify the economic and social paradigm in a post-pandemic era. It seeks to reduce economic inequalities and also to better prepare Ecuadorians for an adverse event. In line with this aim, a CGEM framework is used to evaluate the potential income inequality and macroeconomic impacts of implementing an UBI policy in Ecuador. To the best of our knowledge, no prior research exists.

Hence, this paper contributes to the Latin American debate on basic income by examining the distributive and macroeconomic effects of introducing a Universal Basic Income (UBI) in a dollarized economy, addressing how such a policy could influence inequality, aggregate demand, and overall economic stability. The model is calibrated using the 2019 Social Accounting Matrix (SAM) for Ecuador—an updated version of the official 2014 SAM—constructed from the Supply-Use Tables, Input-Output Matrix, and Integrated Economic Accounts prepared by the Central Bank of Ecuador. The SAM incorporates household income deciles to approximate the Gini index and to analyze how alternative UBI schemes affect income inequality. The main results suggest that, despite the positive effects, the strict implementation of UBI program in the country does not appear feasible in the short term.

[3] Regarding the Ecuadorian UBI proposal, consult: https://radiolacalle.com/la-asamblea-analizara-el-proyecto-de-renta-basica-universal/

2. LITERATURE REVIEW

2.1. Why Inequality Matters

Historically, the attention of politicians, academics, and citizens has focused on the elimination of poverty (Kerstenetzky, 2022). However, in recent decades—particularly since the 2008-2009 Great Recession—, economic inequality has frequently entered the public debate and captured the attention of society in general (Peterson, 2017).

Although the discussion on economic inequality is gaining strength, the term is often used in a generic and imprecise manner (Bourguignon, 2017), which can lead to conceptual ambiguity and obscure the coexistence of multiple forms of inequality. Even so, the growing interest in economic inequality has enabled academics to analyze its growth dynamics and roots as well as to study the social, political, and economic consequences associated with this rising issue (Dabla-Norris et al., 2015; Corak, 2013). It is also worth noting that reducing inequality gaps is not a topic that arouses interest; instead, concern tends to arise primarily from its effects rather than from the phenomenon itself (Kersteneztky, 2002).

So, why should inequality be reduced? According to Weisskopf (2017), four main arguments support efforts to reduce it: moral—independent of any individual notion about fairness, all members of society must have equity of opportunities and must be treated equally—; political—inequality exacerbates social conflicts, so diminishing differences could promote social cohesion and healthy democracies (Svensli, 2018)—; economic—inequality increases social and political tensions, thereby undermining economic growth and efficiency—; and social— in more egalitarian societies, resources are allocated more equitably, and broader access to health services improves overall quality of life.

2.2. Inequality and the COVID-19 Pandemic

In the COVID-19 pandemic's early stages, some arguments about its "equalizing effect" appeared, stating that the inhabitants of all countries could be affected equally (Carreras et al., 2021). This initial expectation emerged despite the existing historical evidence about pandemics affecting economic inequality (Wade, 2020). A few weeks after the beginning of the COVID-19 pandemic, the "equalizing effect" expectation was diluted, leading to both pessimistic and optimistic forecasts about the effect of the pandemic on inequality. On the one hand, organizations such as the Economic Commission for Latin America and the Caribbean [ECLAC] (2020) asserted that the pandemic could affect women the most, informal workers, people in poverty, children and adolescents, young people, and older adults. Moreover, some studies predicted that the pandemic could increase economic gaps based on similar events in the

past, such as the Spanish Flu (Galletta & Giommoni, 2022). On the other hand, Bull and Robles Rivera (2020), Milanovic (2016), and Piketty and Saez (2014) suggest that extreme events, such as pandemics and wars, can produce institutional ruptures, generated by the pressure of those who are at the base and the willingness of the elites to meet their demands, which could mean a redistributive process with a consequent reduction of inequality.

Yet, as Sayed and Peng (2021) assert, the effects of pandemics on inequality could depend on fatality rates and the age of the population, among other factors. Even though pandemics lead to inevitable consequences such as a decrease in consumption, income, and savings, and an increase in unemployment and public debt, their overall impact on inequality is not uniform across countries. Chen et al. (2021) maintain that the COVID-19 pandemic could bring mixed results in terms of income inequality, depending on the country's level of development. Since the COVID-19 pandemic has lethal consequences mainly for older adults, unlike the Spanish Flu, which primarily affected young men, its impact on labor supply and income is different. Because the working-age population is less affected, the effect on aggregate income tends to be more modest, which could lead to a decrease in inequality in developing countries. However, they argue that the loss of income and a probable increase in precautionary savings imply a reduction in consumption and a consequent decrease in inequality in developing countries. Finally, the authors argue that, in times of pandemics, governments can implement fiscal stimulus packages to mitigate its adverse effects. This kind of policy could increase public debt and tax rates Such increases, in turn, could exacerbate inequality, although this outcome is more frequently observed in developed economies.

In this way, the first months of the pandemic left an environment of uncertainty about its health and economic effects. One of the reasons why speculation arose was the existence of a statistical lag: it was not possible to timely quantify the magnitude of the increase in inequality due to the frequency—generally annual—with which the data are generated by the statistical offices (Aspachs et al., 2021). As a result, the implementation of containment programs was delayed.

Using available data, authors such as Narayan et al. (2022) and organizations such as the World Bank (2022) and ECLAC (2022) conclude that the pandemic's effects are directly correlated with pre-existing differences at an individual level, such as income, education, occupation, area of residence, gender, age, and race. Additionally, the adverse effects of the pandemic appear more strongly among workers who cannot carry out their activities remotely, as well as among women, young workers, and workers with a low level of education.

According to the World Bank (2022), the COVID-19 pandemic increased income inequality within and between countries and, therefore, global inequality. According to this organization, the increase in intra-country inequality was mainly due to the loss of jobs and income. Although the current expansion

may be modest, approximately 0,3 points, it is expected to increase in the long term, significantly affecting sub-Saharan Africa and Latin American countries.

In Latin America, according to ECLAC (2022), the effect of the pandemic on income inequality was heterogeneous: it increased in countries such as Peru, Chile, El Salvador, Bolivia, Colombia, Uruguay, Ecuador, and Argentina, and decreased in the Dominican Republic, Brazil, Paraguay, Mexico, and Costa Rica. However, in both groups of countries all income quintiles experienced a decline in median income. However, the losses in the two groups were distributed in different ways. In the first one, where inequality increased, the richest quintiles lost less than the poorer ones, and labor incomes suffered significant losses. In contrast, in countries where inequality declined, the average total income of the better-off fell more than in all other income quintiles, and labor incomes decreased in the same proportion in all quintiles. Although both groups experienced income losses, transfer programs helped reduce inequality, softening the effect of reduced income. For example, in the case of Brazil, total income in the two poorest quintiles increased compared to 2019 due to traditional and emergency transfers.

2.3. The Universal Basic Income

The idea of Universal Basic Income (UBI) is not new. According to Allegri and Foschi (2021), its origins date back to the Renaissance era, with Thomas More (1478-1535). He is believed to be the first to formulate a program in terms of UBI and to associate it with social inequality. In contemporary Europe, for instance, the United Kingdom have discussed UBI for the past century (Sloman, 2018). Yet, UBI policy remained generally unpopular in most countries, particularly in developing ones (Banerjee et al., 2019). However, with the arrival of the COVID-19 pandemic, the discussion around UBI became "more strident" (Reveley, 2021), not only at the political and media levels, but public support and interest also increased compared to pre-pandemic times (Nettle et al., 2021).

Since the COVID-19 pandemic, governments worldwide have been concerned about its multiple effects; particular attention has been given to the most vulnerable populations, leading to the implementation of emergency cash transfer programs or expanding the traditional ones (De Wispelaere & Morales, 2021). Despite these efforts, inequality and poverty increased in COVID-19 times (World Bank, 2022).

During the pandemic, most Latin American countries implemented emergency targeted transfer programs (Filgueira et al., 2020). In this context, recent research has explored the relationship between Emergency Basic Income (EBI) and Universal Basic Income (UBI) within pandemic response strategies. De Wispelaere et al. (2024) propose a "dial up/dial down" model that conceptually links both approaches, providing flexibility for crisis management

while strengthening the long-term case for a universal system. Comparative studies—such as those examining the *Renda Básica de Cidadania* in Maricá, Brazil—illustrate how adaptive basic income schemes can operate as a bridge between short-term emergency relief and structural welfare reform. Moreover, the widespread criticism of targeted welfare programs for their limited coverage and stigmatizing effects has renewed interest in UBI as a more inclusive alternative. Institutions such as ECLAC (2020) have strongly recommended the implementation of emergency income schemes, emphasizing that countries should gradually transition toward universal systems to prevent another "lost decade" in the region.

Evidence from existing Universal Basic Income (UBI) experiments and related cash transfer programs demonstrates significant improvements in recipients' well-being, particularly in terms of financial stability, mental health, nutrition, and education. In an extensive literature review, Csősz (2025) argues that trials in countries such as Finland, Kenya, India, and the United States reveal that unconditional transfers enhance social and psychological outcomes even when employment effects are limited. Similarly, De Paz (2020) finds no evidence that UBI implementation significantly reduces labor supply; on the contrary, most studies report increased participation across age and gender groups, with only minor and functional reductions among caregivers, students, and vulnerable populations. Long-running programs such as the Alaska Permanent Fund and Brazil's Bolsa Família further demonstrate that sustained cash transfers can reduce poverty and inequality without discouraging labor participation.

Recent quantitative evaluations of UBI have instead focused on its comparison with existing means-tested transfer systems. Studies examining different levels of UBI generosity and alternative financing mechanisms suggest that most households experience welfare losses under UBI reforms, with losses increasing alongside transfer size. Reforms funded through consumption taxes tend to generate smaller efficiency losses than those financed by income taxes, although they benefit fewer individuals overall. This line of research underscores the persistent trade-offs between equity and efficiency that policymakers must navigate when designing large-scale UBI programs (Conesa et al., 2023).

Lately, a new perspective has been incorporated into the debate on Universal Basic Income (UBI): the post-growth perspective. From this viewpoint, UBI represents more than a redistributive mechanism—it challenges the traditional growth-oriented economic model by promoting wellbeing within ecological limits and by revaluing non-market activities such as care, creativity, and community engagement. Theoretically, UBI can support a transition toward more equitable and sustainable societies by decoupling income from wage labour and fostering meaningful participation in social and ecological regeneration. However, its transformative potential ultimately depends on its

institutional design, fiscal sustainability, and the broader economic and political structures within which it is implemented (Langridge, 2024).

Nevertheless, the global evidence remains fragmented, as most UBI programs are localized, temporary, or partially targeted rather than fully universal. This limits the ability to evaluate their broader macroeconomic and fiscal impacts. Moreover, while UBI has the potential to serve as a safety net in the face of automation and labor displacement, its large-scale implementation poses substantial fiscal challenges. Sustainable design thus requires careful calibration of financing mechanisms and complementary policies to ensure equity, efficiency, and long-term viability.

More conservative authors, such as De Wispelaere and Morales (2021), are committed to the gradual implementation of UBI: starting with emergency basic income programs and then progressively move towards universalism. Nevertheless, some authors are skeptical: Weisstanner (2022) maintains that the pandemic did not create the space for fundamental social changes and, even though interest in UBI increased, the electoral incentives for politicians to pursue this policy are insufficient. Most importantly, the level of opponents and proponents has remained the same. Additionally, Kapeliushnikov (2020) argues that the political, philosophical, ethical, and economic characteristics of UBI reduce the possibility of implementing it in the real world; in the author's words, "UBI has no future." In other words, some authors remain skeptical about implementing UBI in the post-pandemic world. Despite this, in Latin America, UBI has appeared as an alternative to poverty (Bonilla & Salazar, 2021; Cuesta & Pico, 2020) and inequality (Echeverría, 2021), and there is ongoing discussion about UBI.

3. MATERIALS AND METHODS

The evaluation of the proposals for a Universal Basic Income (UBI) in Ecuador was carried out using a Computable General Equilibrium Model (CGEM). To the best of our knowledge, worldwide there are few applications of general equilibrium models to evaluate ex-ante UBI proposals, and existing results suggest mixed results. Daruich and Fernández (2020) show that UBI improves welfare for older individuals but leads to welfare losses for younger generations, as higher future tax burdens and reduced capital accumulation generate intergenerational disparities. Similarly, Yunker (2013) finds that a substantially larger basic income guarantee would maximize social welfare, yet it would also lead a significant decline in aggregate output and savings, thereby challenging its political feasibility. In contrast, Magnani and Piccoli (2020) report that implementing a revenue-neutral UBI with a flat tax in France reduces income inequality and poverty while slightly improving macroeconomic performance, suggesting that the anticipated equity-efficiency trade-off may not materialize.

The CGE model used in this paper assumes a small and open economy with technologies exhibiting constant returns to scale, homothetic preferences, full employment and perfect mobility of production factors. These assumptions, however, impose important limitations in the context of Ecuador. The high degree of labor informality, underemployment, and sectoral rigidities restrict the mobility of production factors—particularly labor—across industries. Consequently, the model may overstate the economy's capacity for adjustment and underestimate structural and distributional frictions that shape the actual effects of a Universal Basic Income.

This model has four representative agents: households, industries, government and external sector; all of them are price takers. Households are divided into 10 groups by income deciles; industries are divided into 12 productive activities; the government is represented by the public sector at the central and local levels; and the external sector is represented by the imports and exports of each activity. Dividing households into income deciles allows the model to approximate the Gini index and study how UBI proposals affect income inequality[4].

Figure 1 illustrates the circular flow of the economy considered in the structure of the model. Industries demand labor and capital from household factor endowments. These factors of production form the value added, which is incorporated into the commodities to obtain the final production (block 1). In a next stage, this production is allocated between exports and the local market, and then it is decided between local supply and imports to generate the final supply (block 2). At equilibrium, the final supply is equal to the final consumption of households, the intermediate consumption of industries, the consumption of the public sector, and investment. Households demand goods and services based on a budget restriction that considers factor income, current transfers between agents, and capital transfers (block 3). This block is essential for contrafactual simulation since it is where the UBI proposals are incorporated. The government collects indirect and direct taxes, grants transfers and subsidies, and makes public savings, obtaining the necessary resources to carry out public spending (block 4). Finally, investment is determined by the savings of all the agents in the model.

The behavior of each of the agents in this circular flow, as well as their technology and preferences, is explained below. This model was calibrated using the Social Accounting Matrix for Ecuador for the year 2019. The Appendix A presents the main macroeconomic aggregates of this SAM. This matrix represents an update of the official Social Accounting Matrix of

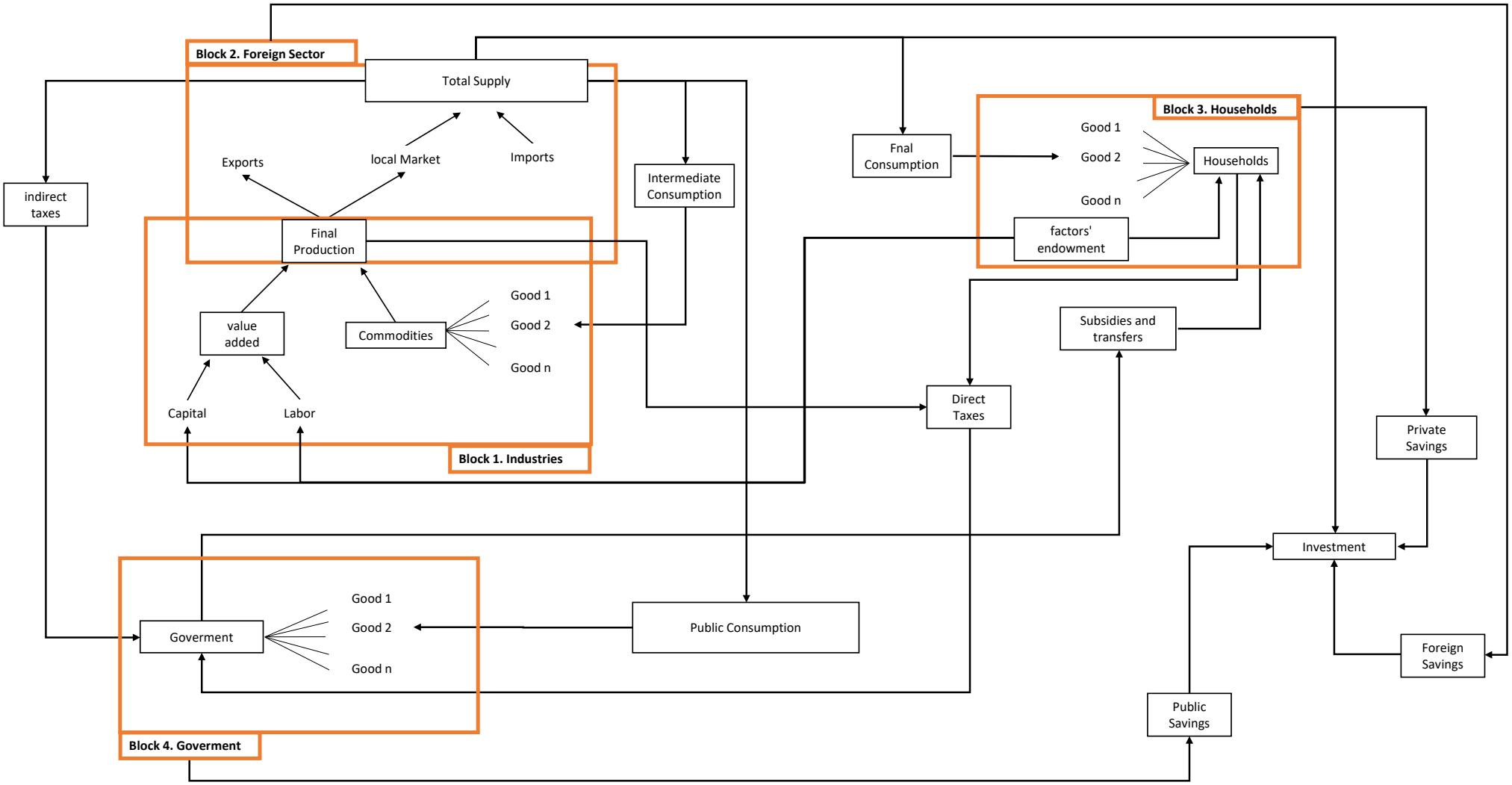
[4] Beyond perfect competition, one of the main limitations of CGE models in distributive incidence is the assumption of representative households. For this reason, to mitigate the effects of this issue, this model uses income deciles. However, this may not be sufficient. It might be necessary to incorporate a microsimulator into the CGE model's structure and use living conditions surveys for calibration.

2014, developed from the Supply-Use Tables, the Input-Out Matrix and the Integrated Economy Table elaborated by the Central Bank of Ecuador.

3.1. Industries

The production system (block 1 in Figure 1) is divided into 12 industries (Table 1). Each industry seeks to maximize its profits, subject to a nested technological structure in three levels: intermediate consumption, value added, and final production.

Figure 1. Circular Flow for the CGE Model



Note: The orange boxes show the economic agents. The arrows correspond to economic flows and interactions between agents.

Table 1. Industries for the CGE model

Identifier	CGE Activity
i1	Agriculture, raising cattle, aquaculture, and fishing
i2	Petroleum, gas, and mining
i3	Manufacture (except petroleum refining)
i4	Electric power and water supply
i5	Construction
i6	Wholesale and retail
i7	Accommodation and food service activities
i8	Transport, courier activities, and communication
i9	Financial service activities
i10	Real estate activities and professional activities
i11	Public administration, defense, and social security
i12	Teaching services, entertainment, and cultural and sport activities

This technology has the following specification:

$$Q_j = \min\left(\min\left(1 \leq \mathrm{i} \leq \mathrm{n}, \frac{X_{ij}}{\gamma_{ij}}\right), {A_j}^{\mathrm{va}} {K_j}^{\alpha_j} {L_j}^{1-\alpha_j}\right) \quad (1)$$
$$j = 1, 2, \ldots, n$$

where Q_j is the total production of the industry j; X_{ij} is the quantity demanded of the input i in the industry j, γ_{ij} is the coefficient share of this demand; VA_j is the added value of the industry j; A_j^{va} is the productivity coefficient, K_j y L_j are the factors of production capital and labor, respectively; and α_j is the coefficient share of capital.

3.2. Foreign Sector

The foreign sector represents the commercial operations with the rest of the world (block 2 in Figure 1). On the one hand, the decision between selling locally (D_j) or exporting (E_j) is represented by a constant transformation elasticity (CET) technology:

$$Q_j = {A_j}^q \left(\varphi_j {E_j}^{\frac{1-\rho_j}{\rho_j}} + \left(1-\varphi_j\right) {D_j}^{\frac{1-\rho_j}{\rho_j}}\right)^{\frac{\rho_j}{1-\rho_j}} \quad (2)$$
$$j = 1, 2, \ldots, n$$

where A_j^q is the efficiency parameter of the sector j; E_j and D_j are the exports and local sales of the good j, respectively; ϕ_j is the coefficient share of exports of the good j, and ρ_j is the elasticity of substitution in the CET technology between exports and domestic demand of the good j.

On the other hand, the decision between buying a local good or an imported one is represented by a Constant Elasticity of Substitution (CES) technology:

$$S_j = A_j^s \left(\beta_j M_j^{\frac{\sigma_j - 1}{\sigma_j}} + \left(1 - \beta_j\right) D_j^{\frac{\sigma_j - 1}{\sigma_j}} \right)^{\frac{\sigma_j}{\sigma_j - 1}} \quad \textbf{(3)}$$
$$j = 1, 2, \ldots, n$$

where A_j^s is an efficiency parameter of the sector j; M_j and D_j are the imports and local purchases of the good j, respectively; β_j is the coefficient share of imports of the good j; and σ_j is the elasticity of substitution CES between imports and domestic supply of the good j.

3.3. Households

Households (block 3 in Figure 1) are divided by income deciles. Each representative household chooses its optimal bundle to maximize a Cobb-Douglas utility, subject to a budget constraint. Here, we assume there is no preference for leisure.

Formally, the utility function has the following specification:

$$U_h = \sum_{1 \leq i \leq n} \theta_{hi} \log(C_{hi}) \quad \textbf{(4)}$$
$$h = 1, 2, \ldots, 10$$

where U_h is the utility of representative household of income decile h; C_{hi} is the consumption of good i for the household h; θ_{hi} is the coefficient share of this consumption.

For the budget restriction, it is assumed that disposable income for each representative household comes from revenue from labor and capital, current transfers between economic agents, and capital transfers. Additionally, we assume a constant marginal propensity to consume. Formally:

$$Y_h = \phi_h \left(\delta_h^L \sum_{i=1}^{n} w_L L_j + \delta_h^K \sum_{i=1}^{n} w_K K_j + \sum_{k \in \{G,F,H,K\}} \overleftarrow{\mathrm{Tr}_h^k} - \sum_{k \in \{G,F,H,K\}} \overrightarrow{\mathrm{Tr}_h^k} \right) \quad \textbf{(5)}$$
$$h = 1, 2, \ldots, 10$$

where Y_h is the disposable income of representative household of income decile h; ϕ_h is the constant marginal propensity to consume; δ_h^L and δ_K^L are the distribution parameters for factor of productions; w_L and w_K are the prices of labor and capital; $\overleftarrow{\mathrm{Tr}_h^k}$ are the current transfers from government ($k = G$); the foreign sector ($k = F$); the rest of the households ($k = H$); and capital transfers ($k = K$), respectively; meanwhile $\overrightarrow{\mathrm{Tr}_h^k}$ are the current transfers from household h to these agents. It should be note that all current transfers are assumed exogenous, except $\overrightarrow{\mathrm{Tr}_h^G}$ which represents the income tax payment. $\overleftarrow{\mathrm{Tr}_h^G}$ is the key variable to include the UBI proposals in the contrafactual simulations of CGE.

3.4. Government

The government (block 4 in Figure 1) is an agent that does not follow an optimal behavior in the model. Its purpose is to collect direct and indirect taxes, obtain funds from internal and external financing sources, and distribute these resources through the provision of public goods and services. Additionally, some closure rules are considered for this agent, which are specified later.

3.5. Equilibrium

The economic system illustrated in Figure 1 has two kinds of equilibriums. The first equilibrium corresponds to the market for goods and services:

$$S_i = \sum_{j=1}^{n} X_{ij} + \sum_{h=1}^{m} C_{hi} + G_i + I_i \quad \textbf{(6)}$$

where, for each good i, S_i is the final supply; X_{ij} is the intermediate consumption by the industry j; C_{hi} is the final consumption by the household h ; G_i is the final government spending; and I_i is investment.

The second equilibrium corresponds to the market for factors of production (capital and labor):

$$\sum_{j=1}^{n} L_j = L, \qquad \sum_{j=1}^{n} K_j = K \quad \textbf{(7)}$$

where L and K are the total labor and capital endowments in the economy, respectively. In the equilibrium of both markets, full employment and exogenous factor supplies are assumed.

3.6. Closure Rules

To have a reliable macroeconomic representation of the Ecuadorian economy, the CGE model incorporates the following neo-Keynesian closure rules (Robinson, 2006; Zalai & Révész, 2016).

- Foreign sector: The nominal exchange rate is fixed, as it is a dollarized economy. In this sense, the adjustment is made through foreign savings, which depend on the financing needs of the public and private sectors.
- Savings-investment: Investment is exogenous, as are the marginal propensities to consume of non-governmental institutions. So, the adjustment is made through forced saving.[5]
- Fiscal Sector: Real government spending and tax rates are exogenous. Thus, the adjustment is made through an endogenous fiscal deficit.

Furthermore, the wage is chosen as the numeraire, which is common in structuralist macro models, so that all prices of goods and services are measured relative to wages.

These closure rules set up the basic design of the CGE model for the ex-ante analysis of the UBI proposals. In the case of this study, given the dollarized regime, the nominal exchange rate is fixed. Accordingly, external balance does not rely on relative prices but on quantities: foreign savings are endogenously determined by aggregate financing needs in the public and private sectors. Hence, expansions of transfers (UBI) that are not matched by higher revenues or lower spending translate into greater external financing in the short run. Moreover, real investment is exogenous, which implies closing the saving-investment block with forced saving: a wedge in the marginal product of labor enables real-wage variations to generate the savings needed to finance fixed investment. The choice of the wage as numeraire, as in structuralist macro models, is so that all prices are measured relative to wages. This captures a short-run setting with anchored investment and financial rigidities typical of dollarized economies.

3.7. Calibration

The calibration process involves determining the coefficients of the equilibrium model that replicates the base scenario reported in the Social Accounting Matrix (SAM) through the nonlinear system of equations (Burfisher, 2011).

[5] This rule is implemented by introducing a distortion factor in the marginal productivity of labor. In this way, changes in real wages make it possible to generate the necessary savings to finance the fixed real investment.

In the present paper, the CGE model was calibrated using the SAM for Ecuador for the year 2019 (see Appendix A). This matrix represents an update of the official Social Accounting Matrix of 2014, developed from the Supply-Use Tables, the Input-Out Matrix, and the Integrated Economy Table elaborated by the Central Bank of Ecuador.

On the other hand, the CES elasticities for imports and CET elasticities for exports were obtained from the MAMS y MACEPES models proposed by Vos and León (2003), León et al. (2008), and Jácome and Cicowiez (2012). These elasticities are presented below:

Table 2. Elasticities of the CGE model

Identifier	CGE Activity	CES	CET
i1	Agriculture, raising cattle, aquaculture, and fishing	1,1	1,1
i2	Petroleum, gas, and mining	0,8	0,8
i3	Manufacture (except petroleum refining)	0,9	0,8
i4	Electric power and water supply	0,2	0,2
i5	Construction	0,8	1,0
i6	Wholesale and Retail	0,8	1,0
i7	Accommodation and food service activities	0,8	1,0
i8	Transport, courier activities and communication	0,8	1,0
i9	Financial service activities	1,5	1,5
i10	Real estate activities and professional activities	1,5	1,0
i11	Public administration, defense, and social security	1,5	1,0
i12	Teaching services, entertainment, and cultural and sport activities	0,8	1,0

It should be noted that the robustness of Computable General Equilibrium Models largely depends on the elasticities employed. This represents a limitation in this study, as the lack of country-specific estimates for Ecuador necessitated the use of elasticities estimated for other developing economies.

4. RESULTS AND LIMITATIONS

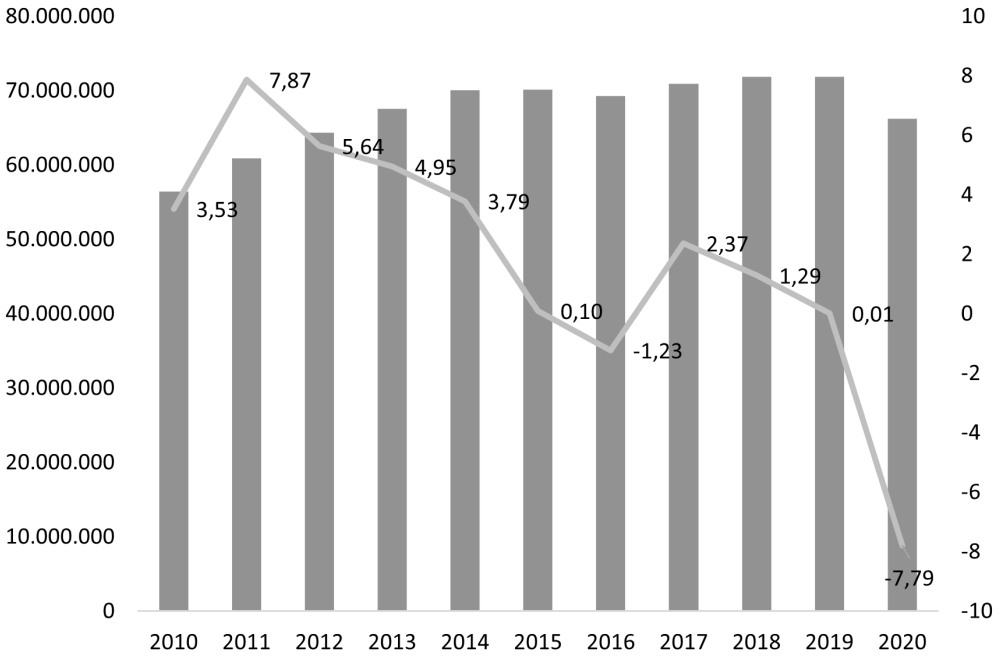
The simulation exercise consists of contrasting some counterfactual scenarios—proposed alternatives which impacts are ex-ante analyzed—with a base scenario—the current state of the Ecuadorian economic system. Two types of scenarios are proposed: positive and normative ones. This section describes the base scenario and, after detailing the construction of the counterfactual scenarios, presents and discusses the results.

4.1. Base Scenario Description

The SARS-COV-2 pandemic was announced while the Ecuadorian economy was in a recessive cycle. As illustrated by Figures 2 and 3, between 2015 and 2018, the economy slowed down due to a sharp contraction in public spending—particularly in capital investment—and a sustained decline in oil prices (Orellana et al., 2023). Moreover, the economic growth in 2019 was the lowest of the last decade. So, as in many Latin American countries (ECLAC, 2020), the pandemic aggravated an already recessive situation. The initial containment measures harshly impacted the economic activity during 2020, especially during the second quarter of 2020: -13,91 % GDP growth.

Figure 2. Real GDP

Annual evolution (thousands of U. S. dollars, 2007=100)

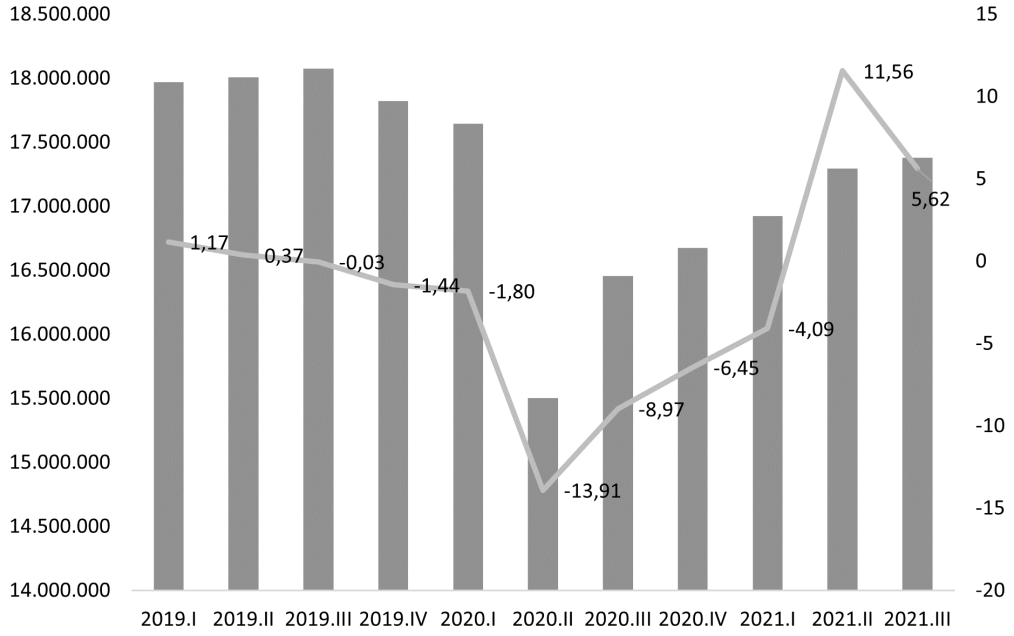


Source: Ecuadorian Central Bank Data–Quarterly National Accounts of January 2022.

The 7,79 % decline of GDP reported in Ecuador implied a general contraction: all GDP components evolved negatively (Figure 4). Even if the percentage change in exports and imports was severe, it is worth noting the significant household consumption shrinkage: relative to 2019, consumption decreased by 8,2 % in 2020.

Figure 3. Real GDP

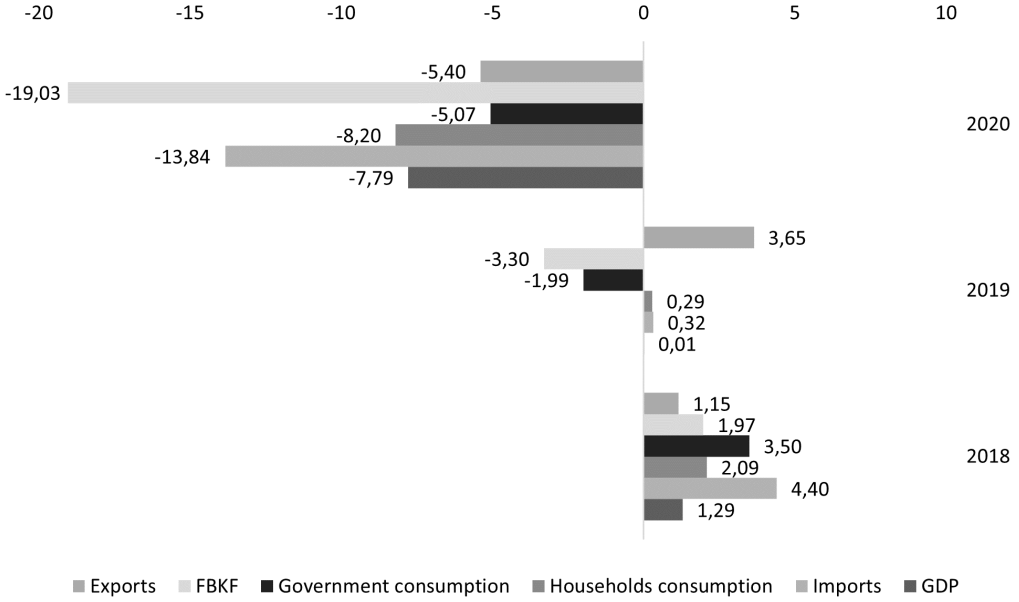
Quarterly evolution (percent variation rates t/t-4, 2007=100)



Source: Ecuadorian Central Bank Data–Quarterly National Accounts of January 2022.

Figure 4. GDP Components

Percent variation rates, 2007=100

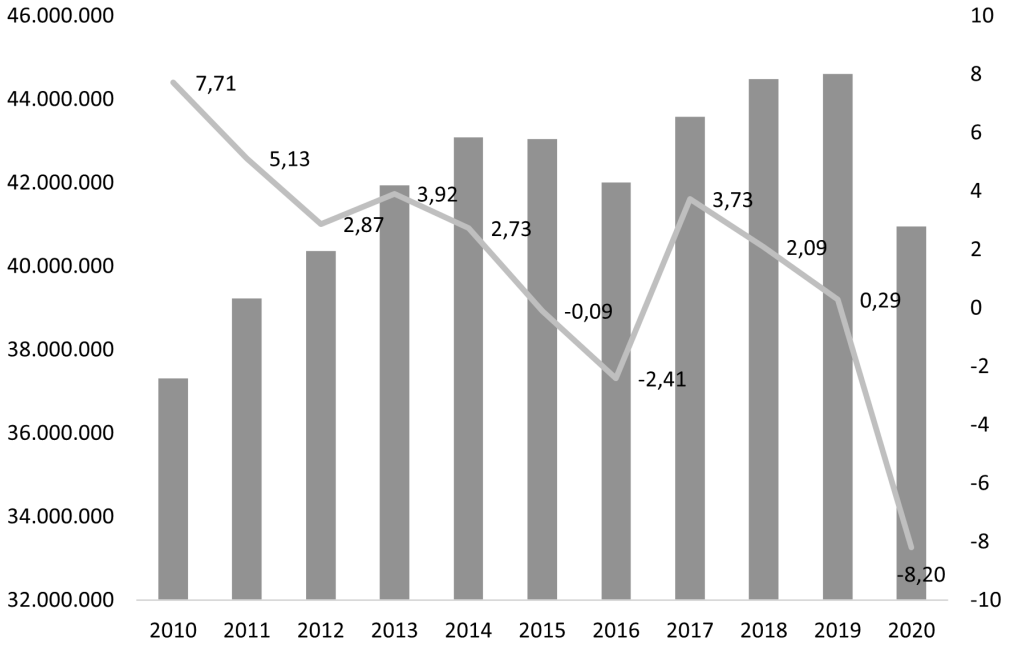


Note: FBKF stands for gross fixed capital formation.
Source: Ecuadorian Central Bank Data–Quarterly National Accounts of January 2022.

In absolute terms, households' consumption is the major GDP component. What's more, consumption is directly related to welfare. So, the negative consumption evolution (Figures 5 and 6) is not only a macroeconomic problem, but also a social issue.

Figure 5. Real Household Consumption

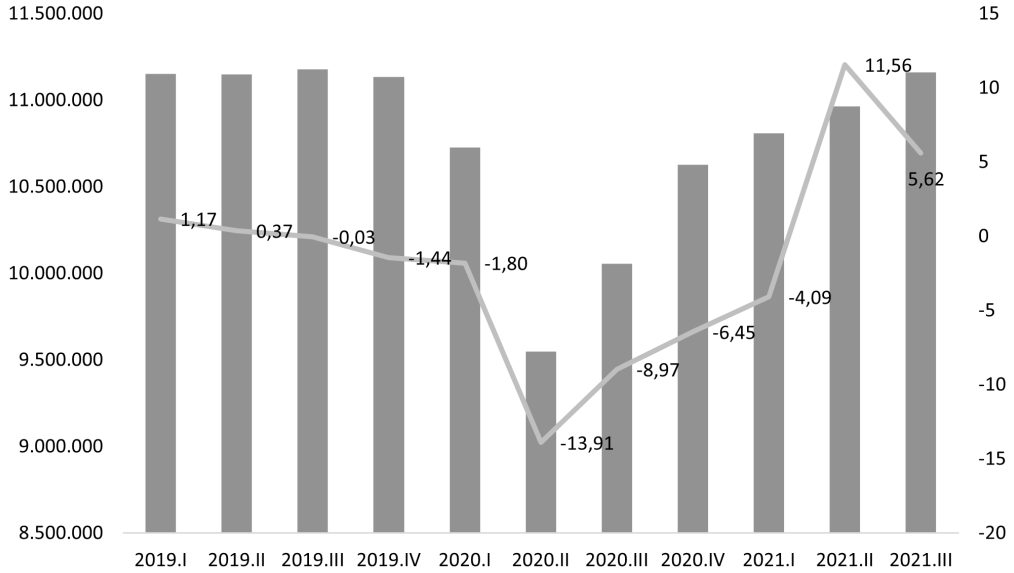
Annual evolution (thousands of U. S. dollars, 2007=100)



Source: Ecuadorian Central Bank Data–Quarterly National Accounts of January 2022.

Figure 6. Real Household Consumption

Quarterly evolution (variation rates t/t-4, 2007=100)

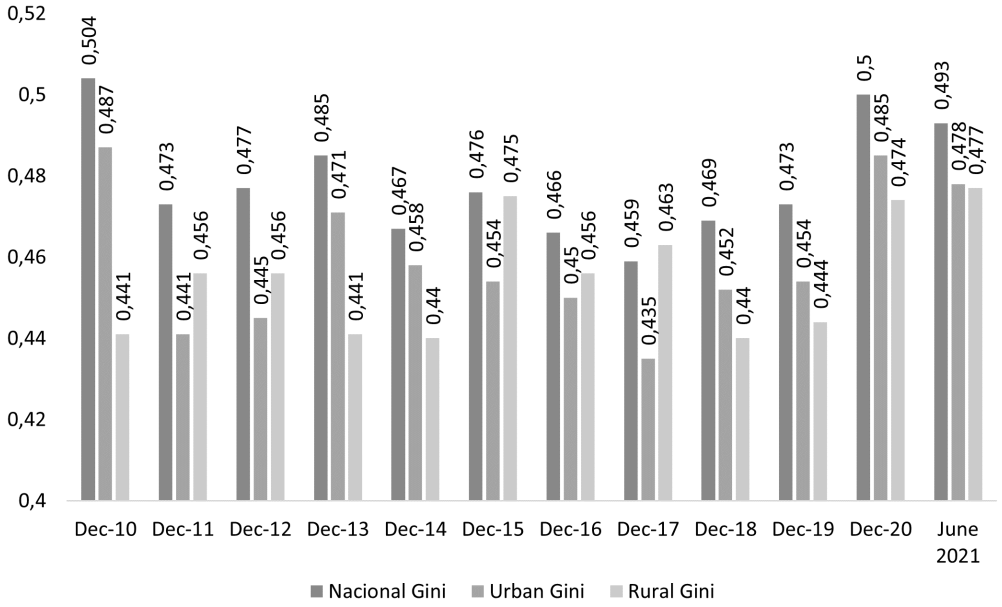


Source: Ecuadorian Central Bank Data–Quarterly National Accounts of January 2022.

According to the last OXFAM report (Ahmed et al., 2022), the wealth of the 10 richest persons has doubled, while the income of 99 % of humanity deteriorated due to the COVID-19 pandemic, and there are 169 million new poor. In Latin America, 10 % of the population concentrates 90 % of total wealth. Undoubtedly, income inequality and poverty have increased since 2020. Ecuador is not the exception: in 2020, income poverty and extreme income poverty reached 32,4 % and 14,9 %, respectively, while in 2019 they were 23,9 % and 8,7 %, respectively (INEC, 2020). Moreover, income inequality also deteriorated: the Gini coefficient increased during 2020 from 0,473 to 0,5 (Figure 7).

Figure 7. Gini Coefficient

Annual evolution



Source: Ecuadorian National Statistics Institute–December 2021 Poverty and Inequality report

A major cause of the worsening of poverty and income inequality during the COVID-19 pandemic was the loss of income caused by the increase of the unemployment rate. According to ECLAC (2022), labor income fell by 14 %, while total and per capita income declined by 10 and 12 %, respectively. At an income quintile level, wages declined by 35 % in the first quintile, 15 % in the third, and 14 % in the fifth quintile. Regarding both salaries and income from self-employment, the reductions were 22 %, 18 % and 16 % in quintiles 1, 3 and 5, respectively. In general, total income decreased by 12 % in quintiles 1 and 3, and in the highest quintile it stands at 8 %.

Despite the drop in income that directly contributed to the increase in inequality in Ecuador, cash transfer programs prevented a further increase. In general, cash transfers narrowed the income gap more than the previous year in the poorest quintiles and less in the richest quintiles (ECLAC, 2022a). The Ecuadorian social system does not include universal programs: the current cash transfer programs, summarized in Table 3, are targeted ones. Around the world, the pandemic's socio-economic challenges gave rise to a discussion about the necessity of improving social welfare.

Table 3. Ecuadorian Cash Transfer Programs

	Cash transfer amount in USD	Public investment USD
Bono de Desarrollo Humano	50	273 MM
Bono de Desarrollo Humano Variable	50-150	80 MM
Pensión Mis Mejores Años	100	333 MM
Pensión para Adultos Mayores	50	44 MM
Bono Joaquín Gallegos Lara	240	110 MM
Pensión Toda una Vida	100	84 MM
Pensión para Personas con Discapacidad	50	13 MM
Cobertura de contingencias	variable	
Pensión desnutrición	240	
Bono de los 1.000 Días	50	1,87 MM

Source: Ministry of Economic and Social Inclusion (MIES)

Emergency cash transfers were implemented worldwide, and in Ecuador the government introduced a one-time emergency transfer during the first months of the pandemic, reaching approximately one million vulnerable households (Bonilla-Bolaños & Salazar-Mendez, 2021). According to ECLAC (2022), while the Gini coefficient with transfers was 0,466, a Gini coefficient without transfers would have been 0,475. Regarding the effect of cash transfers on income loss, ECLAC (2022) asserts that the sum of the three items—salaries, income from self-employment, and transfers—mitigated the effect: the resulting income loss is 15 % in the first quintile, 12 % in the third, and 9 % in the fifth. That is, once transfers are considered, the decrease in the first quintile is smaller.

So, the COVID-19 pandemic highlighted the need for social systems to improve, especially in Latin America. In this context, this paper contributes to the debate by shedding light on the potential impact of a universal (or targeted) permanent cash transfer on Ecuadorian inequality.

4.2. Counterfactual scenarios

4.2.1. Counterfactual scenarios description

This section details the simulated changes in ten of the modelled macroeconomic indicators across two types of scenarios: positive and normative. The included macroeconomic indicators are nominal and real GDP, real aggregate supply, households aggregate real consumption, real exports and imports, government tax revenue, real aggregate value by economic sector (12 economic sectors, see Table 1), households' disposable income, and Gini coefficient. The positive scenarios are divided

in six sub-scenarios: three featuring a universal cash transfer and three considering a targeted cash transfer for individuals in the lowest three income deciles (see Table 4). The normative scenarios consider a 1 %, 5 %, and 10 % reduction of the Gini coefficient. More specifically, the scenarios are constructed to determine the transfer amount to achieve a 1 %, 5 %, and 10 % reduction of the Gini coefficient. The normative scenarios also consider the universality and targeting criterion.

Table 4. Simulated Scenarios

	Scenario	Description
Positive	*P_un_1*	$109,91 (USD 2020 dollars) universal cash transfer.
	P_un_2	$129,12 (USD 2020 dollars) universal cash transfer.
	P_un_3	$150,38 (USD 2020 dollars) universal cash transfer.
	P_tg_1	$109,91 (USD 2020 dollars) targeted cash transfer (lowest three income deciles).
	P_tg_2	$129,12 (USD 2020 dollars) targeted cash transfer (lowest three income deciles).
	P_tg_3	$150,38 (USD 2020 dollars) targeted cash transfer (lowest three income deciles).
Normative	*N_un_1*	Universal cash transfer: necessary amount to achieve a 1 % reduction of the Gini coefficient.
	N_un_2	Universal cash transfer: necessary amount to achieve a 5 % reduction of the Gini coefficient.
	N_un_3	Universal cash transfer: necessary amount to achieve a 10 % reduction of the Gini coefficient.
	N_tg_1	Targeted cash transfer (lowest three income deciles): amount required to achieve a 1 % reduction in the Gini coefficient.
	N_tg_2	Targeted cash transfer (lowest three income deciles): amount required to achieve a 5 % reduction in the Gini coefficient.
	N_tg_3	Targeted cash transfer (lowest three income deciles): amount required to achieve a 10 % reduction in the Gini coefficient.

The choice of the three cash transfer amounts ($109,91, $129,12, and $150,38) refers to a previous study on the discussion of a UBI for Ecuador that includes an estimation of the cost of a Basic COVID-19 Emergency Basket (Bonilla-Bolaños & Salazar-Mendez, 2021). The estimated emergency basket reflects the minimum monthly amount required for an average individual to sustain their life in three dimensions: (i) food for nutrition, (ii) education, and (iii) health and biosafety. The resulting monthly individual cost of food

for nutrition (education; health and biosafety) in August 2020 current is USD dollars is $109,91 ($ 19,21; $ 37,28). Table 5 details the dimensions covered by the selected amounts in the simulated scenarios.

Table 5. Consumption Baskets Description

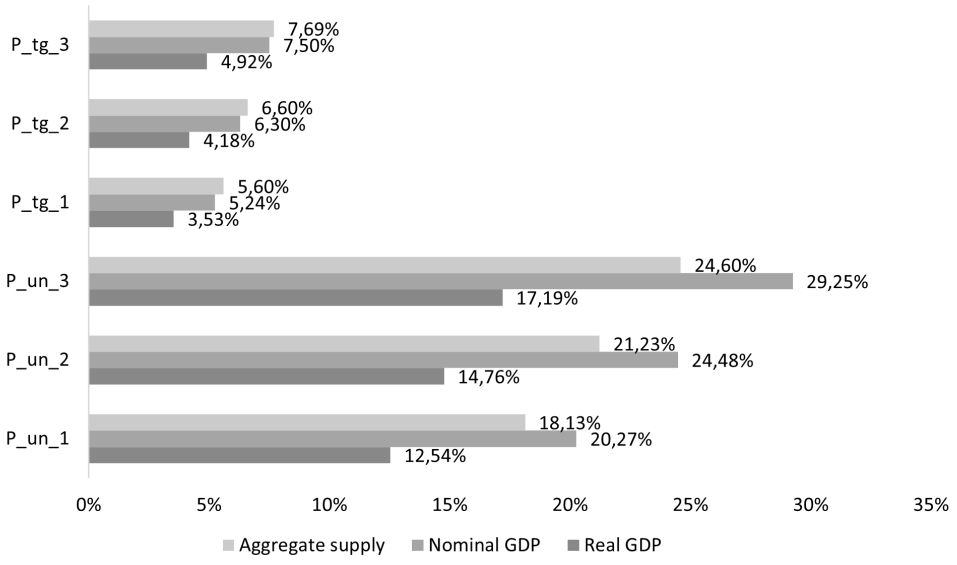
Cash transfer amount	Consumption basket details
$109,91 US 2020 dollars	Includes only the estimated monthly individual cost of food for nutrition.
$129,12 US 2020 dollars	Includes the estimated monthly individual cost of food for nutrition and education.
$150,38 US 2020 dollars	Includes the estimated monthly individual cost of food for nutrition, education, and heath and biosafety.

The effect of these scenarios on the Ecuadorian economy is analyzed using macroeconomic (nominal and real GDP, real aggregate supply, households aggregate real consumption, real exports and impots, government tax revenue) and welfare (Gini coefficient) indicators.

The impact on the macroeconomic and welfare indicators is measured as percent changes with respect to the base scenario, that is, with respect to the values registered in the 2019 Ecuadorian SAM.

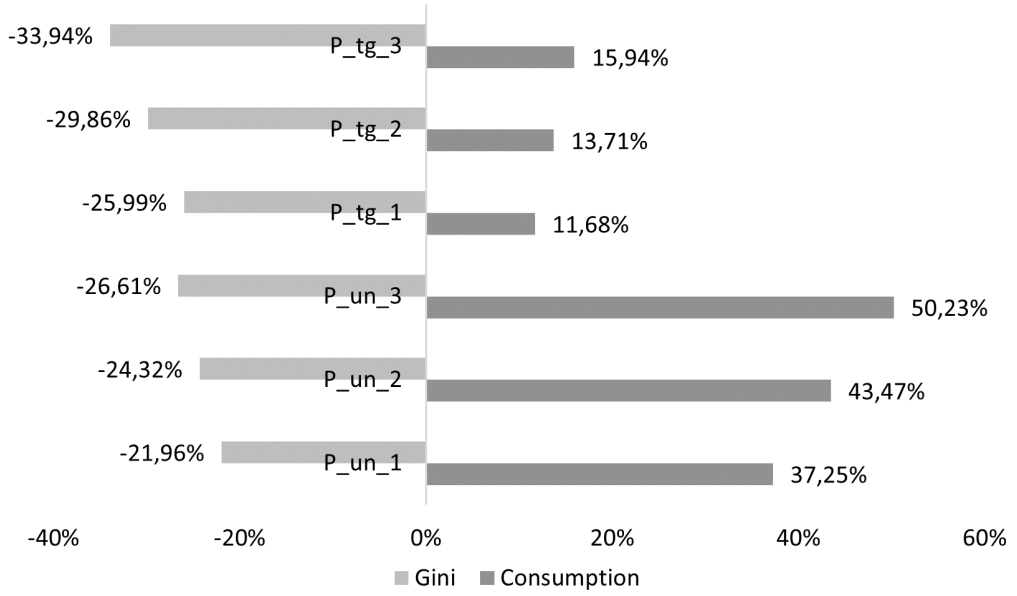
4.2.2. Positive scenarios

Figure 8. Aggregate Supply, Nominal and Real GDP Percent Change by Positive Scenario



As illustrated by Figure 8, all scenarios reflect an increase in economic activity: both the real GDP and the aggregate supply increase. The boost is stronger under the universal scenarios (*P_un_1*, *P_un_2*, *P_un_3*), as expanding the cash transfer to all Ecuadorians leads to a larger positive effect on economic activity. In contrast, when the transfer is targeted only to individuals in the three lowest income deciles, the positive impact on real GDP remains significant but comparatively smaller. The results also indicate that the increase in nominal GDP exceeds that of real GDP, suggesting upward pressure on prices. As shown in Figure 9, household consumption rises in all scenarios, but the expansion is notably stronger under the UBI schemes, where the broader coverage stimulates aggregate demand more significantly. In contrast, the targeted scenarios—focused on the three lowest income deciles—generate smaller increases in consumption, reflecting their narrower reach. However, the targeted transfers lead to a greater reduction in income inequality since the benefits are concentrated among lower-income households, resulting in stronger redistributive effects compared to the universal alternatives.

Figure 9. Gini Coefficient and Consumption Percent Change by Positive Scenario



It is worth noting that the universal scenario that allocates $150,38 (*P_un_3* in Figure 9) reduces the inequality coefficient more than the targeted scenario that allocates $109,91 (*P_tg_1*). The comparison between the *P_un_3* and the *P_tg_1* scenarios is interesting because the first one also increases consumption much more than the second one; therefore, the resulting economic boost is higher for the universal option.

Both consumption and inequality are related to households' disposable income. Table 6 details the percent change in households' disposable income

by income decile after receiving a cash transfer according to the six simulated scenarios. As expected, the income of households in deciles 1, 2 and 3 increases the most in all scenarios. This is natural because one dollar cash transfer is more valuable to low-income households than to high-income ones. Two findings stand out: (i) regarding the three lower income deciles, the same cash transfer amount generates a higher increase in income when universality is considered; (ii) although the targeted scenarios are built so that income deciles 4 to 10 do not receive any cash transfer, their income still increase. These dynamics are a result of economic circularity: even if some households do not directly receive a cash transfer, their income is enhanced because of the general boost in economic activity (the multiplier effect).

Table 6. Percent Changes in Households' Disposable Income by Income Decile

	P_un_1	*P_un_2*	*P_un_3*	*P_tg_1*	*P_tg_2*	*P_tg_3*
Decile 1	116,3 %	137,1 %	160,1 %	106,4 %	125,1 %	145,8 %
Decile 2	82,9 %	97,8 %	114,4 %	73,6 %	86,5 %	100,9 %
Decile 3	74,3 %	87,8 %	102,8 %	64,0 %	75,2 %	87,7 %
Decile 4	65,9 %	77,8 %	91,2 %	3,5 %	4,2 %	5,0 %
Decile 5	60,5 %	71,6 %	83,9 %	3,9 %	4,7 %	5,5 %
Decile 6	54,6 %	64,6 %	75,8 %	3,9 %	4,7 %	5,6 %
Decile 7	49,4 %	58,6 %	68,8 %	3,9 %	4,6 %	5,5 %
Decile 8	43,0 %	51,1 %	60,1 %	4,1 %	4,9 %	5,9 %
Decile 9	35,4 %	42,1 %	49,5 %	3,8 %	4,5 %	5,4 %
Decile 10	26,3 %	31,4 %	37,2 %	4,3 %	5,2 %	6,2 %

4.2.3. Normative Scenarios

The normative scenarios are designed to identify the individual monthly transfer required to achieve specific reductions in income inequality—namely 1 %, 5 %, and 10 % decreases in the Gini coefficient. As shown in Table 7, a modest reduction in inequality can be achieved either through a small universal transfer or through a larger transfer targeted to households below the fourth income decile. However, the amounts required to reach these reductions remain far below the national poverty thresholds. In other words, while both approaches contribute to improving income distribution, neither guarantees income sufficiency, since the transfer levels are well below the extreme and moderate poverty lines reported by INEC (2022).

Table 7. Resulted Cash Transfer by Normative Scenario

			Required cash transfer			
	Recipient	**Gini reduction**	**Total annual in thousands of US dollars**	**Total monthly in thousands of US dollars**	**Individual monthly in US dollars**	**Percentage of GDP**
N_un_1	universal	1 %	$716.926,43	$59.743,87	$3,40	0,67
N_un_2	universal	5 %	$3.801.077,41	$316.756,45	$18,00	3,54
N_un_3	universal	10 %	$8.252.612,41	$687.717,70	$39,08	7,68
N_tg_1	three lowest income deciles	1 %	$235.787,42	$19.648,95	$11,17	0,22
N_tg_2	three lowest income deciles	5 %	$1.201.140,61	$100.095,05	$56,89	1,12
N_tg_3	three lowest income deciles	10 %	$2.461.131,80	$205.094,32	$116,56	2,29

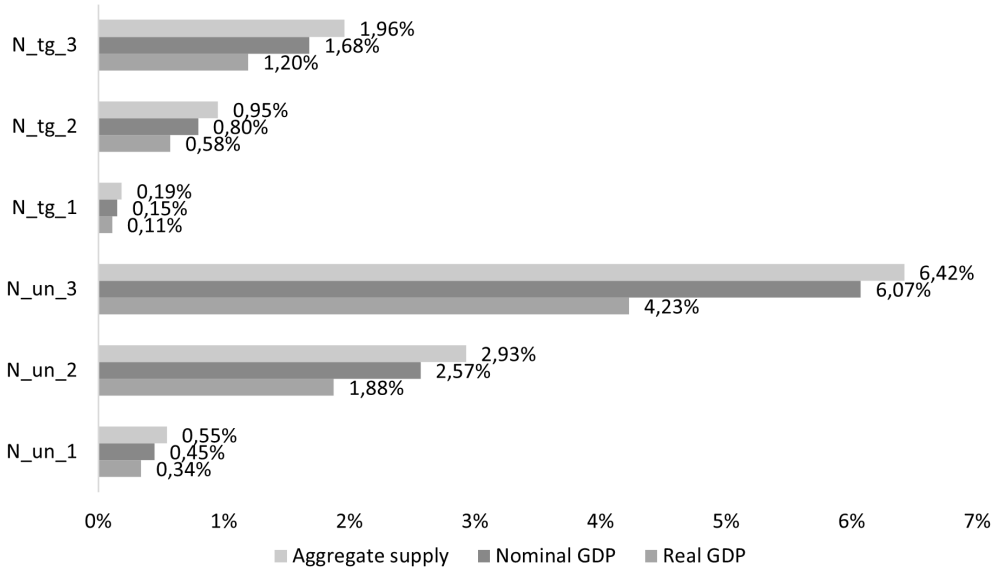
Note: Considering a total population of 17.595.602 according to the Instituto Nacional de Estadísticas y Censos (INEC), October 2020.

A 5 % (10 %) Gini reduction corresponds to (i) to a universal individual monthly allocation of $18,00 ($39,08) or (ii) to a targeted individual monthly allocation of $56,89 ($116,56). Considering the extreme income poverty line, candidate adequate choices are either a $56,89 individual monthly amount or a $116,56 one.

The current *Bono de Desarrollo Humano* (BDH) allocates $50 ($50 to $150 if a variable component is included) monthly to low-income households. According to Gachet et al. (2019), a $50 BDH cash transfer reduces inequality in Ecuador by 4,83 %; this empirical finding can be compared to the *N_tg_2* scenario (Table 7): to reduce inequality by 5 %, $56,89 needs to be allocated to lower-income individuals. Moreover, considering the cost of an emergency basket (Bonilla-Bolaños & Salazar-Mendez, 2021), the $116,56 amount covers exclusively the 2020 cost of a nutrition basket, which is $109,91.

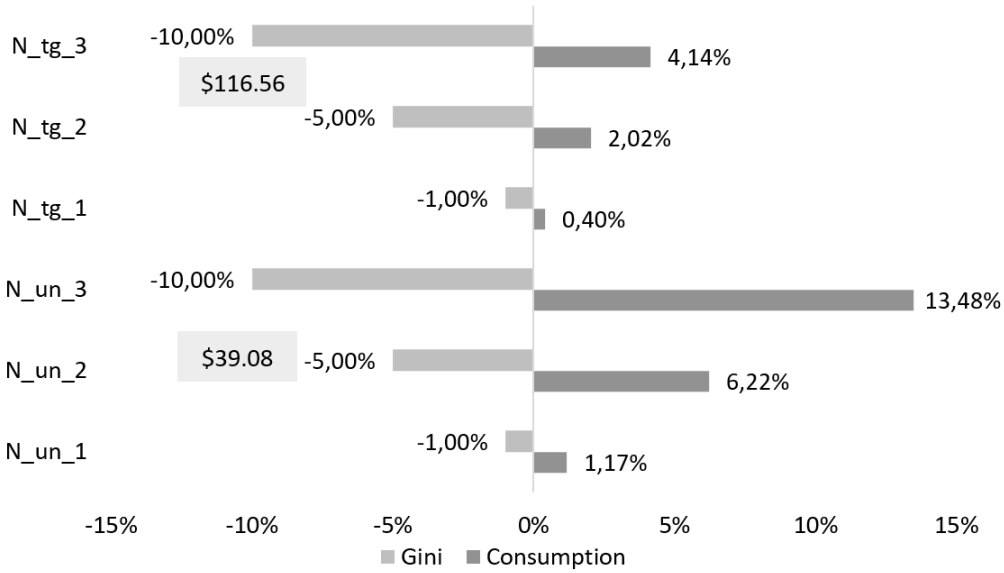
The normative scenarios' impact on economic activity is a boost, but a smaller one than in the positive scenarios because the allocated amounts are lower. The general dynamics are however similar: a universal transfer impacts more the economic activity than a targeted transfer, and the higher the allocated amount, the higher the economic boost (Figure 10).

Figure 10. Aggregate Supply, Nominal and Real GDP Percent Change by Normative Scenario



As illustrated in Figure 11, aggregate consumption increases under all normative scenarios, with stronger effects in the universal schemes. Broader coverage leads to higher aggregate demand, as all households experience a rise in disposable income. In contrast, the targeted scenarios generate smaller overall increases in consumption, since transfers are limited to lower-income groups. Interestingly, both the universal and targeted transfers that achieve a 10 % reduction in inequality yield similar distributive outcomes, despite their markedly different levels of coverage and transfer amounts.

Figure 11. Gini Coefficient and Consumption Percent Change by Normative Scenario



As shown in Table 8, households in the lowest income decile experience the largest gains in disposable income across all scenarios. The magnitude of the effect naturally increases with the size of the transfer. Interestingly, even though targeted schemes are designed to concentrate benefits among low-income groups, the universal transfer leads to slightly higher relative gains for the poorest households. This occurs because extending the cash transfer to all Ecuadorians generates broader indirect effects through higher aggregate demand and income spillovers. Consequently, both the universal and targeted scenarios that achieve a 10 % reduction in the Gini coefficient improve the relative position of the lowest-income households, albeit through different transmission mechanisms.

Table 8. Percent Changes in Households' Disposable Income by Income Decile

	N_un_1	*N_un_2*	*N_un_3*	*N_tg_1*	*N_tg_2*	*N_tg_3*
Decile 1	3,47 %	18,54 %	40,59 %	3,59 %	18,29 %	37,51 %
Decile 2	2,45 %	13,10 %	28,76 %	2,48 %	12,63 %	25,90 %
Decile 3	2,17 %	11,64 %	25,63 %	2,15 %	10,96 %	22,49 %
Decile 4	1,91 %	10,27 %	22,63 %	0,10 %	0,53 %	1,12 %
Decile 5	1,73 %	9,33 %	20,64 %	0,11 %	0,58 %	1,24 %
Decile 6	1,55 %	8,36 %	18,53 %	0,11 %	0,59 %	1,24 %
Decile 7	1,39 %	7,52 %	16,71 %	0,11 %	0,58 %	1,24 %
Decile 8	1,19 %	6,44 %	14,39 %	0,12 %	0,62 %	1,31 %
Decile 9	0,96 %	5,23 %	11,73 %	0,11 %	0,57 %	1,21 %
Decile 10	0,66 %	3,65 %	8,36 %	0,13 %	0,66 %	1,39 %

Overall, the simulations reveal that cash transfers stimulate aggregate consumption by increasing household disposable income, particularly among lower-income groups with higher marginal propensities to consume. As consumption expands, demand rises for goods and services produced in labor-intensive sectors—such as retail, food processing, and personal services—generating positive spillover effects on employment and output. These dynamics contribute to a more inclusive growth pattern, as the gains are distributed toward sectors and workers that typically face higher vulnerability and informality. At the same time, by raising the relative income of poorer households, the transfers help reduce income inequality, reinforcing their distributive role within the economy.

5. CONCLUSIONS AND DISCUSSION

The idea of a Universal Basic Income (UBI) is not new. Nevertheless, during the COVID-19 pandemic, the discussion towards UBI gained momentum around the world among academics, citizens, and policymakers, who believe that UBI could be the answer to the social and economic problems, which have worsened with the crisis. In a more general spectrum, UBI is also considered the way to incorporate radical transformations in the welfare state Although UBI is conceptually simple, it is essential to analyze both its positive and negative implications when implemented in different contexts. For instance, Ecuador—strongly affected by COVID-19—has historically exhibited high levels of poverty and inequality. In line with the traditional Ecuadorian social policy, the immediate response to the pandemic impacts relied on targeted policies. However, even though worldwide a growing trend of poverty and inequality is appearing due to health-related and war risks –, the ECLAC (2022b) suggest that targeted policies have a limited effectiveness because they do not reach those who really need them. Indeed, exclusión and inclusion errors are very common when implementing targeted policies. Yet universality is not exempt from challenges: its financing can be demanding.

The novelty of this analysis is the use of a CGEM for the ex-ante evaluation of UBI proposals, as only a limited number of UBI studies employ this type of model. A CGE model has the advantage that it can represent all macroeconomic flows of the economic system described by the Accounting Social Matrix. In this sense, the ex-ante effect of social public policies can be quantified not only for households but also for the real productive sector, foreign flows, and public balance. When representative households are disaggregated into income deciles, as in the present study, the model becomes even more informative because it allows the approximation of the Gini index, offering insight into the distributional impact of UBI. Moreover, this disaggregation enables a normative analysis and provide more guidelines to political decision-makers.

In this context, the analysis of the consequences of adopting a UBI in Ecuador is based on a rigorous model that includes both targeted and universal scenarios. Results regarding the positive scenarios show that, in general, universal scenarios boost economic activity (consumption and production) more than the targeted ones. And the targeted scenarios reduce inequality more than the universal ones. However, the universal scenarios also produce a substantial decrease in inequality (Figures 8 and 9). Moreover, universal scenarios are associated to higher percent changes in households' disposable income by income decile, and the lowest income decile households improve its income more than the higher income decile ones, suggesting that universality can also operate progressively.

Regarding the normative scenarios, the results confirm the higher aggregate economic impact of universality and reveal that the allocated amount

does matter. Even though a universal cash transfer of $39,08 and a targeted cash transfer of $116,56 reduce inequality by the same 10 %, $39,08 is not sufficient (Figure 11). The debate between universality and targeting, however, goes beyond numbers. Universal policies must ensure sufficiency, meaning that the transfer amount is a central consideration. Additionally, a major difficulty of universal measures is their financing. Universal cash transfers are costly, therefore, from a realistic perspective, the key question becomes: to what extent is the implementation of a UBI feasible in Ecuador?

First, the literature asserts two main financing options for UBI: (i) spending cuts to other programs: rearranging existing income transfers and consolidating them into a single UBI program., and (ii) added revenue collection (Marinescu, 2019; Pereira, 2017). The second option includes a tax reform, as for the Manitoba Basic Annual Income Experiment (Forget, 2011; Hum & Simpson, 1993); and additional fiscal revenue through, for instance, natural resources such as oil and mining, as The Alaska Permanent Fund (Forget, 2014; Widerquist & Howard, 2012) or the Marica's Sovereign Fund (Pereira et al. 2020).

Second, Ecuador, like other developing countries, faces two structural problems: high tax evasion and tax expenditures, which hold back tax recollection and could be an alternative to finance a UBI program. The Economic Commission for Latin America and the Caribbean (2020) shows that the evasion gaps for value-added tax and income tax are around 4,4 % and 2,2 % as a percentage of GDP, respectively. Conversely, tax loss from exemptions, deductions, and benefits for both taxes accounts for 4,9 % of GDP (Servicio de Rentas Internas, 2019). In this context, it is possible to reinforce control on large firms and target tax expenditures on vulnerable sectors to increase the financial resources for implementing UBI proposals. Nevertheless, this represents a complex and slow process.

Results suggest that the starting social, economic, and political conditions in Ecuador pose a great challenge for adopting a UBI policy. Although the positive results obtained in this analysis, given these departure conditions, the strict implementation of UBI program in the country does not appear feasible in the short term. At present, the Ecuadorian social system contains ten conditional cash transfer programs, which differ in amounts, beneficiaries, and conditions. Thus, an immediate stage would be the universalization of all ten programs for individuals in poverty.

Nevertheless, this step is extremely complex because some beneficiaries receive USD 50 while others USD 240. Therefore, it is not possible to equalize the existing programs without harming those who receive the highest amounts, who could claim the unfair removal of acquired rights. A gradual universalization through the unification of all social programs would also be complex since, although there are targeted programs, they do not cover all of the intended population. In addition to consolidating the overall cost, it would also be necessary to identify all individuals who meet the characteristics of

poverty and extreme poverty. After addressing that issue, a UBI policy could support the economic recovery process, boosting the economy and diminishing inequality in the medium term. Thus, although the optimistic results, our recommendations remain cautious: we suggest a soft start, with a flexible UBI delivered to all individuals belonging to the lowest income deciles, followed by a gradual transition toward a true universal basic income. At present, it does not appear to be the right time for a fully universal basic income in Ecuador.

Another aspect that could be considered is the politic environment. Ecuador has not experienced political stability; the country is historically characterized by persistent instability and a low-quality delegative democracy, with several presidents failing to complete their elected term (Moncagatta & Pazmiño, 2025). Evidence from the *Renda Básica de Cidadania* (RBC) implemented in Maricá, Brazil, reflects a unique combination of visionary political leadership and an extraordinary fiscal context—linked to oil revenues—that enabled the program's expansion (De Wispelaere et al., 2024). Nevertheless, the policy still retains features of traditional conditional transfers, as eligibility depends on self-reported family income and registration in the national unified registry (CadÚnico). Moreover, it is not fully universal—covering only about one-quarter of the city's population and operating through a local digital currency, the mumbuca. These contextual and institutional characteristics suggest that replicating or scaling up similar programs in politically and fiscally fragile settings, such as Ecuador, would require not only financial capacity but also sustained political commitment.

It is important to acknowledge several limitations of the CGE model applied in this study. The first concerns the assumption of full employment, which abstracts from the unemployment dynamics that are central to the Ecuadorian labor market. In reality, high informality, structural underemployment, and sectoral mismatches constrain labor mobility and hinder the smooth reallocation of workers across activities. As a result, policy shocks—such as those associated with the implementation of a UBI—could generate temporary or even persistent increases in unemployment that the model cannot capture. Future extensions should therefore incorporate labor market imperfections and endogenous unemployment mechanisms to better represent short- and medium-term adjustment processes in the Ecuadorian economy.

Another limitation relates to the measurement of inequality. Relying solely on the Gini coefficient may underestimate the distributive effects of a UBI in contexts such as Ecuador. When estimated from household surveys like the ENEMDU, the Gini index captures inequality only within the surveyed population, typically excluding top income groups and corporate sectors that are likely to bear the main tax burden of financing a UBI. Consequently, if the financing mechanism involves taxes on high-income individuals or large economic groups not represented in survey data, the true reduction in inequality could be understated. A more comprehensive assessment would require complementing the Gini coefficient with additional indicators—such as the

income share of the top 1 % or the Palma ratio—and integrating survey and fiscal data (e.g., tax records and national accounts) into a unified distributional framework.

Furthermore, in the current model specification, the oil sector is treated analogously to other tradable sectors, without explicitly capturing the state's direct participation in oil exports or the fiscal linkages between oil revenues and public expenditure. This simplification may overlook a key transmission channel in the Ecuadorian economy, where the national budget remains highly dependent on oil income and price fluctuations exert significant effects on employment and aggregate demand. In this sense, a UBI could, in principle, be conceived as a countercyclical instrument financed partly by oil windfalls; however, during periods of low oil prices, alternative financing sources—such as progressive taxation or environmental fiscal reforms—would be required to ensure long-term sustainability.

Finally, beyond model-specific limitations, this research abstracts from several structural features of the Ecuadorian economy—such as unemployment, underemployment, informality, and limited factor mobility—that are essential for understanding real-world dynamics. These simplifications, while necessary to highlight broad macroeconomic and distributive patterns, may introduce an upward bias in the results and render the model more optimistic than actual conditions would justify. Accordingly, the findings should be interpreted as indicative trends rather than precise forecasts of Ecuador's economic trajectory.

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APPENDIX

Appendix A. Social Accounting Matrix 2019

			I	II	III		IV	V	VI	
			Industries	Income Generation	Use of Income		Tax and Subsidies	Capital and Investment	Rest of the world	Total
					Households	Goverment				
I	Industries		Intermediate Consumption (77.549.821)		Final Consumption (63.596.229)	Public expenditure (16.483.785)		Investment (28.006.467)	Exports (24.917.131)	Total Demand (210.553.433)
II	Income Generation		Value Added (99.819.163)						Capital and labor (8.036)	Total capital and labor income (99.827.199)
III	Use of Income	Households		Capital and labor (96.722.815)	Current transfers (16.883.376)	Direct subsidies and grants (14.711.761)		Capital transfers (2.050.158)	Remittances received (3.185.391)	Household's Gross income (133.553.500)
		Goverment	Seccional taxes (1.052.414)	Capital and labor (3.088.956)	Administrative fees (20.347.861)	Administrative fees (2.550.789)	Tax collection (12.075.721)	Capital transfers (4.751.918)	Remittances received (218.153)	Goverment's Gross income (44.085.812)
IV	Tax and Subsidies		Indirect taxes and subsidies (7.236.432)		Direct Taxes (4.839.289)					Tax collection (12.075.721)
V	Capital and Investment				Household Saving (25.809.388)	Goverment saving (8.823.730)			Foreign Saving (178.898)	Total Saving (34.812.016)
VI	Rest of the world		Imports (24.895.603)	Capital and labor (15.428)	Remittances sent (2.077.357)	Remittances sent (1.515.748)		Capital transfers (3.473)		Total currency outflows (28.507.608)
		Total	Total Supply (210.553.433)	Total capital and labor spending (99.827.199)	Household's total spending (133.553.500)	Government's total spending (44.085.812)	Tax collection (12.075.721)	Total Investment (34.812.016)	Total currency inflows (28.507.608)	