

# **Effects of countercyclical policies on women's and men's incomes during the COVID-19 pandemic**

A gender analysis  
of personal taxes and  
transfers in Colombia,  
Ecuador and the  
Plurinational State  
of Bolivia

Diego Collado  
Nicole Bidegain



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# Effects of countercyclical policies on women's and men's incomes during the COVID-19 pandemic

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This document was prepared by Diego Collado, Associate Economic Affairs Officer, and Nicole Bidegain, Social Affairs Officer, both of the Division for Gender Affairs of the Economic Commission for Latin America and the Caribbean (ECLAC), under the supervision of Ana Gúezmes, Chief of the Division for Gender Affairs of ECLAC, with the support of the ECLAC-Wellspring Philanthropic Fund project “Advancing women’s rights and autonomy for a transformative economic recovery in Latin America and the Caribbean”. The document was prepared using input relating to the code and policy descriptions of the BOLMOD tax-benefit microsimulation model for the Plurinational State of Bolivia provided by Cristina Arancibia, a consultant, and of the COLMOD tax-benefit microsimulation model for Colombia, provided by David Rodríguez, a consultant, who also provided input for the general code. The authors are grateful for the input from Karen García, Statistician in the Division for Gender Affairs of ECLAC; Fernanda Moscoso, consultant with the same Division; Claudia Robles, Social Affairs Officer in the Social Development Division of ECLAC; Ana Luiza Matos De Oliveira, Associate Economic Affairs Officer of ECLAC subregional headquarters in Mexico; Noel Pérez, Coordinator of the Fiscal Affairs Unit, and Dalmiro Morán, Economic Affairs Officer, both in the Economic Development Division of ECLAC; and Xavier Jara, Assistant Professorial Research Fellow at the London School of Economics and member of the ECUAMOD national team.

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## Abstract

At the fourteenth session of the Regional Conference on Women in Latin America and the Caribbean, just weeks before the onset of the coronavirus disease (COVID-19) pandemic, the region's governments undertook to "implement gender-sensitive countercyclical policies, in order to mitigate the impact of economic crises". Against this backdrop, this document analyses the impact that taxes and transfers targeted to households and their members had on the disposable income of women and men between 2019 and 2020 in Colombia, Ecuador and the Plurinational State of Bolivia —countries for which harmonized tax and transfer microsimulation models are maintained by the World Institute for Development Economics Research of the United Nations University (UNU-WIDER). These models are used to construct counterfactual income distributions for the purpose of separating the automatic effects of pre-existing policies from those of the policies implemented in response to the emergency. The study uses the COVID-19 crisis as a case study for analysing some of the gender impacts of fiscal policies. It identifies lessons learned and makes recommendations to prevent gender inequalities from deepening in future economic, health or social crises in the region, while promoting a fiscal system that fosters gender equality and the safeguarding of women's rights.



## Introduction

Gender inequalities represent a structural phenomenon that manifests itself in multiple ways in the countries of Latin America and the Caribbean. Besides the heterogeneity of the region's countries, phenomena such as women's low labour market participation rates, gender segregation in the workplace, an unfair social organization of care, and women's overrepresentation in the lower income quintiles and in poverty all persist. Evidence from the region shows that development policies that fail to mainstream gender tend to perpetuate gender inequalities instead of reversing them. This can happen both in cycles of economic growth or momentum and at times of crisis or recession (Bidegain, 2017). For example, in 2002–2014, poverty reduction in some of the region's countries was accompanied by an increase in the femininity index of poor households (ECLAC, 2016).<sup>1</sup> It has also been found that women tend to be more exposed to the effects of economic crises, such as the one that occurred in 2007–2009 (Montaño and Milosavljevic, 2010). It is therefore crucial to account for the differentiated way in which crises impact women and men.

The general objectives of fiscal policy can be divided into resource allocation, distribution and stabilization (Musgrave, 1959). The level of tax revenue, tax structures, and budget allocations and execution all have an impact on socioeconomic and gender inequalities, because they affect the distribution of income and economic resources, the provision of public goods and services, and the mobilization of resources to finance policies that promote gender equality and women's autonomy (ECLAC, 2019). Considering these functions and focusing on periods of crisis, fiscal policies can play a key role in addressing gender inequalities and the multiple forms of discrimination faced by women.

From the gender perspective, it is therefore necessary to analyse the channels through which crises are transmitted and thus account for their differential impact on women and men. The region's countries can use the policy space "to implement gender-sensitive countercyclical policies that mitigate the impacts of crises and recessions, for example, by expanding public social spending in areas that are critical for women, upholding standard working conditions for women and mitigating the effects of speculation in food prices for female small producers and women living in poverty" (Bidegain, 2017, p. 27).

<sup>1</sup> According to data from the Gender Equality Observatory for Latin America and the Caribbean of ECLAC (2024a), the femininity index of poor households rose by 11 points, from 107.1 in 2002 to 118.2 in 2014. This means that for every 100 men living in poor households in the region in 2014, there were 118 women in the same situation.

In the sessions of the Regional Conference on Women in Latin America and the Caribbean, member States of the Economic Commission for Latin America and the Caribbean (ECLAC) have forged consensus on the Regional Gender Agenda, which contains specific commitments to address the gender dimensions of fiscal policy. In this context and just weeks before the outbreak of the coronavirus disease (COVID-19) pandemic, governments at the fourteenth session of the Regional Conference in January 2020, issued the Santiago Commitment, in which they agreed to “Implement gender-sensitive countercyclical policies, in order to mitigate the impact of economic crises and recessions on women’s lives...” (ECLAC, 2023d, paragraph 24). This agreement was then reaffirmed in the Buenos Aires Commitment at the fifteenth session of the Regional Conference in 2022 (ECLAC, 2023a, paragraph 28).

In 2020, the crisis that was triggered by the COVID-19 pandemic had an unprecedented adverse impact on the countries of Latin America and the Caribbean (ECLAC/ILO, 2021). Regional gross domestic product (GDP) registered its steepest decline in at least the last 70 years (ECLAC, 2023b), while labour market indicators deteriorated. Between 2019 and 2020, weighted average regional employment rates contracted by 8.2% and 10.3% among men and women, respectively; while participation rates dropped by 6.3% among men and by 7.9% among women, with significant gender gaps persisting in these indicators. In contrast, unemployment rates<sup>2</sup> rose by 33.3% for men and by 26.2% for women, thus maintaining women’s disproportionate share of the unemployed (ECLAC, 2024b).

The greatest impacts occurred in the second quarter of 2020, when pandemic lockdown and containment measures were implemented in several of the region’s countries. Unlike what happened in previous crises, physical distancing measures prevented informal employment from acting countercyclically (for example, ILOSTAT data show that the average informal employment rate in the region declined between the last quarter of 2019 and the second quarter of 2020). From the third quarter of 2020 onward, and in response to the gradual lifting of the stay-at-home measures, working people started to return to the labour market, and employment rates tended to recover from the lows recorded in the second quarter. However, employment ended 2020 below the pre-pandemic levels; and, as in some previous crises, heavily male-dominated sectors recovered faster than those in which women are more prominent. For instance, by the first quarter of 2021, construction had already regained its pre-pandemic employment levels, while the accommodation and food sector was recovering more slowly and the household sector as an employer had not yet recovered (ECLAC, 2022a).

In fiscal terms, the onset of the COVID-19 crisis was reflected in two key factors: the generalized absence of automatic stabilizers and the application of expansionary fiscal policies (ECLAC, 2021b). Stabilizers are generally defined as elements of fiscal policy that mitigate output fluctuations (Dolls, Fuest and Peichl, 2012). The degree to which they mitigate the impact of shocks to the demand for goods and services therefore depends on the tax and transfer system—the focus of this paper—and also on the link between disposable income and that demand. The absence of automatic stabilizers was due, partly, to the fact that few countries had unemployment insurance (ECLAC, 2022a), while in the countries that did have such instruments, coverage tended to be limited—just 17% of unemployed people in Latin American countries were receiving unemployment benefits on average in 2018 (Vegh and others, 2019). Thus, in countries with segmented labour markets and gender-based labour segregation, it is vitally important to analyse the role of automatic stabilizers. For example, it was found that in Chile and Ecuador, most recipients of unemployment insurance up to 2020 had been men (ECLAC, 2022a). This is probably related to women’s lower labour participation rate and their underrepresentation in wage-earning employment (CEPALSTAT data show that 63% of employed men had this occupational status in 2019, compared to 54% in the case of women).

<sup>2</sup> The employment rate and the unemployment rate have different denominators. The former, as an indicator of labour demand, is defined as the proportion of employed persons (in paid jobs) relative to the working-age population (that is, persons who are employed in paid jobs, plus the unemployed and those not participating in the labour market). In contrast, the unemployment rate is defined as the percentage of unemployed persons relative to the economically active population (that is, excluding persons who are not participating in the labour market). The employment rate shares the same denominator as the labour participation rate, which also includes unemployed persons in its numerator and is an indicator of (paid) labour supply.

In 2020, public spending in the region reached historically high levels, which helped to mitigate the effect of the social and economic crisis (ECLAC, 2021b). This countercyclical fiscal policy, in which subsidies and transfers increased by most, had direct distributional impacts that differed between women and men (ECLAC, 2022a). It also impacted economic activity; for example, Rivas Valdivia and Santamaría (2024) report that Central American countries with higher public spending between 2020 and 2021 also experienced a significant economic recovery in the latter year.

Now that the COVID-19 pandemic is over, there is evidence that structural gender inequalities have intensified, with serious repercussions for women's economic autonomy. The increased burden of unpaid work and the significant impact of the pandemic on sectors, such as paid domestic work, in which women are the majority of the labour force, caused a historical setback in terms of women's labour participation. Although this had returned to its (low) pre-pandemic level by 2023, the feminization of poverty increased in 2021 and 2022 (ECLAC, 2024a).

In short, the evidence shows that the COVID-19 crisis affected women's employment rate more than that of men in the region, but the differential cushioning effect that countercyclical policies had on the incomes of women and men is unknown. Accordingly, this paper studies the impact that countercyclical fiscal policies, both personal taxes (including social contributions)<sup>3</sup> and transfers to households and their members, had on the incomes of women and men during part of this period in a selection of Latin American countries.

The analysis focuses on Colombia, Ecuador and the Plurinational State of Bolivia, three countries for which harmonized microsimulation tax and transfer models are maintained by UNU-WIDER. By constructing counterfactual income distributions that assume the absence of the emergency policies that were actually implemented (including parametric changes to already existing policies), these models make it possible to decompose the changes in the distribution of disposable income of women and men by distinguishing the following three effects: (i) lost labour market income; (ii) the automatic stabilization provided by the existing policies; and (iii) the emergency policies that were implemented. The periods analysed are the last quarter of 2019 (before the pandemic), the second quarter of 2020 (its most critical moment), and the fourth quarter of 2020 when several health restrictions had already been lifted.

This paper uses the COVID-19 crisis as a case study to analyse some of the gender impacts of fiscal policies; it identifies lessons learned and makes recommendations to prevent gender inequalities becoming more pronounced in future economic, health or social crises in the region.

The next section reviews studies on the impact that countercyclical fiscal policies—targeted to households and their members— had on the income distribution during the COVID-19 pandemic in Colombia, Ecuador and the Plurinational State of Bolivia. Section II then describes the personal taxation, social contribution and transfer systems prevailing in these countries before the pandemic, and how these and the labour market evolved while it lasted. Section III describes the methodology used to study the effect that the policies had on women's and men's incomes; section IV reports the results, and section V sets forth the final conclusions.

<sup>3</sup> In the rest of this document, references to direct taxes sometimes include social contributions, unless the latter are mentioned explicitly. Social contributions refer to all existing contributions (e.g. for pensions and health).



## I. The role of personal taxes and transfers in the region during the COVID-19 pandemic

This section reviews studies on how countercyclical fiscal policies —targeted to households and their members— impacted the income distribution during the COVID-19 pandemic in Colombia, Ecuador and the Plurinational State of Bolivia.

After the first year of the pandemic, a tool for assessing fiscal stimulus packages from a gender perspective, developed by the United Nations Entity for Gender Equality and the Empowerment of Women (UN Women) and the International Labour Organization (ILO) (UN-Women/ILO, 2021), was applied in several of the region's countries, including Argentina (UN-Women, 2023). The tool includes an evaluation of fiscal stabilization and stimulus measures, and provides guidance on quantitative indicators that can be used when analysing policies in key areas in which the crisis impacted women and men differently. Among those linked most closely to income, the tool included employment and social protection. The former considers both paid and unpaid work and unemployment. In relation to social protection, it considers both its social assistance function, for example, measures adopted to support or replace income and the provision of child and childcare benefits, and its social insurance function through unemployment benefits and sick leave. Using this tool, the measures were analysed in terms of their design but not in relation to their impact on personal incomes. Indicators such as the percentage of measures aimed at income support and childcare, the level of transfers, and others, were analysed. The focus was mainly on spending measures, rather than those related to taxes and social contributions.

The effect that personal taxes and transfers, in their role as countercyclical fiscal policies, had on the distribution of household income during the COVID-19 pandemic has been studied in the region's countries, including Colombia, Ecuador and the Plurinational State of Bolivia, but not from a gender perspective. For this reason, and as has also noted by ECLAC (2021a), "it is important to analyse the gender distributional impacts of fiscal policies in response to the COVID-19 crisis". In terms of studies that analyse the distribution of household income in several countries simultaneously, Jara and others (2024) reported that pandemic-related policies cushioned the effect of the crisis at the lower end of the income distribution in Colombia, Ecuador and Peru, while their effect on poverty and inequality depended largely on the generosity of the benefits implemented in each country. By contrast, automatic stabilizers mitigated the impact of the shock at the top of the income distribution by automatically reducing social

insurance contributions and income tax, whereas the social assistance programmes that were in place before the pandemic failed to act as automatic stabilizers. Jara and others (2024a) hypothesized that the latter was because the programmes in question used proxy means-testing methods. According to Berner and Van Hemelryck (2020), the three countries analysed used these methods to proxy for income, welfare or the need to allocate transfers before the pandemic, based only on self-reported data and without including income in their socioeconomic indicators. The authors also noted that, between 2015 and 2020, social information systems and beneficiary registers covered only 8% and 46% of the population in the Plurinational State of Bolivia and Ecuador, respectively, compared to 76% in Colombia. Using the methodology of Jara and others (2024a) and extending the analysis to include Argentina, Mexico, the Plurinational State of Bolivia and Uruguay, Rodríguez and others (2022) reported results similar to those of the first paper mentioned.<sup>4</sup>

Both of the aforementioned studies obtained their results by constructing counterfactual distributions that assumed that the emergency policies had not been implemented, and by performing microsimulations of both taxes and transfers (Paulus and Tasseva, 2020). They also had to use nowcasting techniques to predict people's labour status and income, because household income surveys in many countries were hampered during the COVID-19 pandemic, especially in the second quarter of 2020 when its effects were worst. For this reason, in this period many of these surveys were conducted by telephone and lack key variables for the tax and transfer microsimulation models (for example, household identifiers in Ecuador and non-labour income in Colombia, whereas in the Plurinational State of Bolivia the survey does not cover the second quarter of 2020). The studies used nowcasting techniques to remedy this situation, by adjusting the pre-pandemic household income surveys (which contain all of their core variables) for the labour status and income of individuals to reflect the situation during the pandemic. The latter was obtained from surveys that did not have all the variables to be processed in the microsimulation models, but did have the labour market data.

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<sup>4</sup> Also using microsimulation, Pires, Cardoso and De Oliveira (2021) analysed the *Auxílio Emergencial* emergency transfer programme in Brazil, without including personal taxes, social contributions or the automatic stabilization of these and other transfers. They find that the emergency transfer played a key role in protecting the groups that were most vulnerable to rights violations in 2020, especially black women. Research by Lustig and other (2021) and Cuesta and Pico (2020) also use microsimulations of taxes and transfers to analyse results by gender in Latin American countries. However, these are ex-ante evaluations, because they pre-defined which workers might have been affected by the lockdown measures according to the sector in which they were working before the pandemic.

## II. Personal tax and transfer systems and the labour market in Colombia, Ecuador and the Plurinational State of Bolivia before and during the pandemic

This section describes the tax, social contribution and transfer systems prevailing in Colombia, Ecuador and the Plurinational State of Bolivia in December 2019 before the COVID-19 pandemic; the impacts that the crisis caused by this pandemic had on the labour market in 2020; and the mitigating tax and transfer policies implemented by national governments. The review focuses on direct taxes, social security contributions and cash transfers, as the analysis in the next section will focus on changes in disposable income among women and men.

### A. Personal taxes and transfers before the pandemic

The following paragraphs summarize the main parameters of employee and own-account worker social contributions, along with personal income tax and the main transfer programmes in force in December 2019 in each country analysed.

As shown in table 1, the general social contribution rates applicable to employed persons were broadly similar in all three countries, ranging from 8% in Colombia to 12.71% in the Plurinational State of Bolivia. In the latter, however, individuals with labour income above approximately 6.1 times the minimum wage also start to pay the National Solidarity Contribution (*Aporte Nacional Solidario*), at rates rising from 1% at this threshold level to 10% on incomes above approximately 16.5 times the minimum wage. Own-account workers made slightly larger contributions than employees in the Plurinational State of Bolivia because of additional premium rates for occupational risk; and contributions were considerably higher in Colombia (28.5% or 30.5%) and in Ecuador (20.6%). In these two countries, employee contributions are supplemented by contributions from their employers,<sup>5</sup> while

<sup>5</sup> These contributions are not included in the table because they do not directly affect employees' disposable income (the focus of this paper); but they should be mentioned in contrast to the contributions made by own-account workers.

in Ecuador contributions by own-account workers were voluntary. In all countries, employees<sup>6</sup> and own-account workers affiliated to social security paid contributions based at least on the minimum wage, while maximum payments (or ceilings) existed only in Colombia and for own-account workers in the Plurinational State of Bolivia. All three countries deducted contributions from labour income for personal income-tax purposes.

**Table 1**  
**Characteristics of employee and own-account worker social contributions, 2019**

Country	Rate	Floor	Ceiling	Tax deductible
<b>Social contributions of employed workers</b>				
Plurinational State of Bolivia	General: 12.71% National Solidarity Contribution: 1% if > 6.1 times the minimum wage 5% if > 11.8 times the minimum wage 10% if > 16.5 times the minimum wage			Yes
Colombia	8% or 10%	8% of the minimum wage 9.45% of the minimum wage	10% of 25 times the minimum wage	Yes
Ecuador	9.45% or 11.45%			Yes
<b>Social contributions of own-account workers</b>				
Plurinational State of Bolivia	General: 14.42% National Solidarity Contribution: 1% if > 6.1 times the minimum wage 5% if > 11.8 times the minimum wage 10% if > 16.5 times the minimum wage	12.71% of the minimum wage	12.71% of 60 times the minimum wage	Yes
Colombia	28.5% or 30.5%	28.5% of the minimum wage	30.5% of 25 times the minimum wage	Yes
Ecuador	20.6%	20.6% of the minimum wage		Yes

Source: Prepared by the authors, on the basis of C. Arancibia and D. Macas, "UNU-WIDER SOUTHMOD Country Report: BOLMOD v2.0, 2019–2022", *UNU-WIDER SOUTHMOD Country Report Series*, Helsinki, World Institute for Development Economics Research (UNU-WIDER), 2023 (for the Plurinational State of Bolivia); and H. X. Jara and others, "Assessing the role of tax-benefit policies during the COVID-19 pandemic: Evidence from the Andean region", *Review of Development Economics*, 2024 (for Colombia and Ecuador).

Note: In the Plurinational State of Bolivia, the general contributions are those made to the contributory and semi-contributory pension systems together with risk premia (which are not applicable to own-account workers over 65 years of age), plus the corresponding National Solidarity Contribution (for pensions), levied on income above the thresholds. The specific contributions of the mining sector are not included, because they are not simulated in BOLMOD. In Colombia, the contributions shown in the table refer to those for health, pensions and the Pension Solidarity Fund (*Fondo de Solidaridad Pensional*); and, in Ecuador, for pensions, social security for rural workers, severance and disability payments (while the contributions of the armed forces and the police are also simulated in ECUAMOD whereas those of unpaid workers are not).

In Colombia and Ecuador, the design of personal income tax shares a number of similarities; whereas the Plurinational State of Bolivia had no personal income tax as such, but the complementary regime to value added tax (RC-IVA). Table 2 shows that the thresholds below which income was tax-exempt were high and ranged from 2.4 times the minimum wage in Ecuador to 4.6 times in the Plurinational State of Bolivia. By comparison, in the countries of the Organisation for Economic Co-operation and

<sup>6</sup> In the Plurinational State of Bolivia, the social security law does not state this explicitly. However, the General Labour Act precludes pay agreements below the minimum wage, and this was factored into the BOLMOD simulation model because using observed wages underestimated these contributions.

Development (OECD) that have legal minimum wages, taxes were paid either on the minimum wage or started at around 1.2 times that level in 2019.<sup>7</sup> Meanwhile, ECLAC (2023c) reported that in 2021 the minimum taxable income, as a multiple of per capita GDP, was 1.7 in Colombia, 1.9 in Ecuador and, on average, 1.1 in Latin America and 0.4 in OECD. The top tax rates were relatively similar in Colombia and Ecuador, at 39% and 35%, respectively, while in the Plurinational State of Bolivia, RC-IVA is not a progressive tax but is levied at a flat rate of 13%. However, the threshold above which these top rates were applied varied from 24.4 times the minimum wage in Ecuador to 106.9 times in Colombia.<sup>8</sup> There were no tax brackets in the Plurinational State of Bolivia, since RC-IVA is not progressive. In the latter country, all invoiced expenses could be deducted from the tax base, whereas in Colombia and Ecuador a number of deductions were also available, mostly related to health, housing and education expenses.

**Table 2**  
**Personal income tax characteristics, 2019**

Country	Lower threshold of tax brackets (Multiples of the minimum wage)	Upper threshold of tax brackets (Multiples of the minimum wage)	Minimum rate (Percentages)	Maximum rate (Percentages)	Deductions from the tax base
Bolivia (Plurinational State of) <sup>a</sup>	4.6	-	0	13	Invoiced expenses
Colombia	3.8	106.9	0	39	Food, clothing, education, health and housing expenses
Ecuador	2.4	24.4	0	35	Housing rent and health care expenses

Source: Prepared by the authors, on the basis of C. Arancibia and D. Macas, "UNU-WIDER SOUTHMOD Country Report: BOLMOD v2.0, 2019–2022", *UNU-WIDER SOUTHMOD Country Report Series*, Helsinki, World Institute for Development Economics Research (UNU-WIDER), 2023 (for the Plurinational State of Bolivia); and H. X. Jara and others, "Assessing the role of tax-benefit policies during the COVID-19 pandemic: Evidence from the Andean region", *Review of Development Economics*, 2024 (for Colombia and Ecuador).  
Note: Tax brackets are expressed as multiples of the annualized minimum wage in each country.

<sup>a</sup> In the Plurinational State of Bolivia, this corresponds to the tax on labour income of wage-earners (and on non-labor income of wage-earners and own-account workers), while BOLMOD also simulates the fact that self-employed workers could be taxed either under a simplified regime with a lower bound of just half a minimum wage or else under a regime taxing company profits with no lower bound (and the transaction tax on income from rental of property or machinery for own-account workers is also simulated).

Although this study focuses on the cushioning effect that direct taxes had on *changes* in disposable income rather than on its *level*, the existence of a flat tax rate for RC-IVA (and for the vast majority of taxes) in the Plurinational State of Bolivia, besides being regressive, contains a gender bias, as noted by Coello and Fernández (2014). This is because it disproportionately benefits men, who earned 74% more than women on average and who, if there were a progressive tax scale, would pay proportionately more.<sup>9</sup> Moreover, in terms of the *level* of "consumable" income (Lustig, 2023), the preponderance of indirect taxes without progressive rates in the region also represents a significant gender bias. In terms of *changes*, the automatic stabilization effect of value added tax (VAT), for example, is most probably less than that of personal taxes in countries where it is progressive. This is because when consumable income falls, the same flat VAT rate still applies, unlike potentially lower progressive personal tax rates.

<sup>7</sup> Authors' calculations on the basis of results from the OECD tax and benefit model (version 2.6.3) for a single person, without children and not receiving other optional transfers (Latin American countries that were members of this organization in 2019 are not available).

<sup>8</sup> In Colombia, the 35% tax bracket had a lower threshold of 29.9 times the minimum wage, which is relatively similar to Ecuador's 24.4 times the minimum wage for the same tax rate, so the scales were broadly similar up to these points.

<sup>9</sup> In general, this occurs not only because of the different levels of income, but also because of the differential treatment applied to different types of income —such as capital income, including dividends, interest and royalties, which historically have been concentrated more among men than among women.

Lastly, in terms of the number of beneficiaries, in the three countries the main transfer programmes or those oriented specifically towards women targeted two population groups: families with children and older persons. The exception is the Joaquín Gallegos Lara Grant (*Bono Joaquín Gallegos Lara*) in Ecuador, which is targeted to persons with disabilities or severe illnesses. As shown in table 3, a common feature of these programmes in Colombia and Ecuador was the use of proxy means-testing methods, in which eligibility was not assessed relative to income but with respect to a composite welfare index based on housing and household information. The main programmes in the Plurinational State of Bolivia were not income-dependent: the Juancito Pinto Grant (*Bono Juancito Pinto*) was paid according to an enrolment register; payments of the Juana Azurduy de Padilla Mother and Child Grant (*Bono Madre Niña-Niño Juana Azurduy*) were targeted to (potential) mothers without health insurance coverage; and the *Renta Dignidad* universal old-age income programme was targeted to all persons over 60 years of age who were not receiving any other wage or remuneration (whether as a worker, consultant or government supplier). As a result, the main social assistance programmes that were in place before the pandemic in the three countries did not provide automatic income protection in the event of crisis; so they could not act as automatic stabilizers to cushion income fluctuations.

**Table 3**  
**Characteristics of main transfer programmes, 2019**

Country	Name	Income test	Maximum amount per month (Percentage of median per capita)
Bolivia (Plurinational State of)	(i) <i>Renta Dignidad</i> universal old-age income	No	With social security pension: 325 bolivianos (Bs) (31%) Without social security pension: Bs 379 (36%)
	(ii) Juancito Pinto Grant	No	Bs 16.7 per student (2%)
	(iii) Juana Azurduy Grant	No	Check-ups and childbirth: Bs 26.7 (6%) Childhood check-ups: Bs 62.5 (3%)
Colombia	(i) Families in Action ( <i>Familias en Acción</i> )	Proxy means-tested	240,000 Colombian pesos (Col\$) (56%)
	(ii) Youth in Action ( <i>Jóvenes en Acción</i> )	Proxy means-tested	Col\$ 170,000 per student (39%)
	(iii) <i>Colombia Mayor</i>	Proxy means-tested	Col\$ 110,000 (25%)
Ecuador	(i) Human Development Grant ( <i>Bono de Desarrollo Humano</i> )	Proxy means-tested	Families: US\$ 150 (106%) Older persons: US\$ 100 (71%) Persons with disabilities: US\$ 50 (35%)
	(ii) Joaquín Gallegos Lara Grant	Proxy means-tested	US\$ 240 (170%)

Source: Prepared by the authors, on the basis of C. Arancibia and D. Macas, "UNU-WIDER SOUTHMOD Country Report: BOLMOD v2.0, 2019–2022", *UNU-WIDER SOUTHMOD Country Report Series*, Helsinki, World Institute for Development Economics Research (UNU-WIDER), 2023 (for the Plurinational State of Bolivia); and H. X. Jara and others, "Assessing the role of tax-benefit policies during the COVID-19 pandemic: Evidence from the Andean region", *Review of Development Economics*, 2024 (for Colombia and Ecuador).

Note: Proxy means-testing refers to the fact that eligibility was not assessed relative to income but with respect to a composite welfare index based on housing and household information. Amounts in parentheses are expressed as a percentage of median household per capita disposable income. The maximum amounts shown for the Families in Action and *Colombia Mayor* programmes refer to Bogotá. In the Plurinational State of Bolivia, the extreme poverty grant payable to the visually impaired (*Bono de Indigencia por ceguera*) and the Disability Grant (*Bono para personas con discapacidad*) are excluded, because they are included in the microdata but are not simulated in BOLMOD. In ECUAMOD, the Pension for Older Persons (*Pensión para Personas Adultas Mayores*), the Pension for Persons with Disabilities (*Pensión para Personas con Discapacidad*), the My Best Years Pension (*Pensión Mis Mejores Años*) and the Whole Life Pension (*Pensión para Toda una Vida*) are simulated as part of the Human Development Grant.

The use of progressive targeting indices in the Colombian and Ecuadorian programmes could result in more women than men receiving these transfers, since women are overrepresented in the lower part of the income distribution. For example, the Non-contributory Social Protection Programmes Database in Latin America and the Caribbean (ECLAC, 2024c) shows that 57% of the coverage of the *Colombia Mayor* programme for older persons was female, while the Youth in Action programme was broadly balanced between women and men.<sup>10</sup> The same database reports that Families in Action in Colombia and the Human Development Grant in Ecuador have women as "mothers" as recipients.

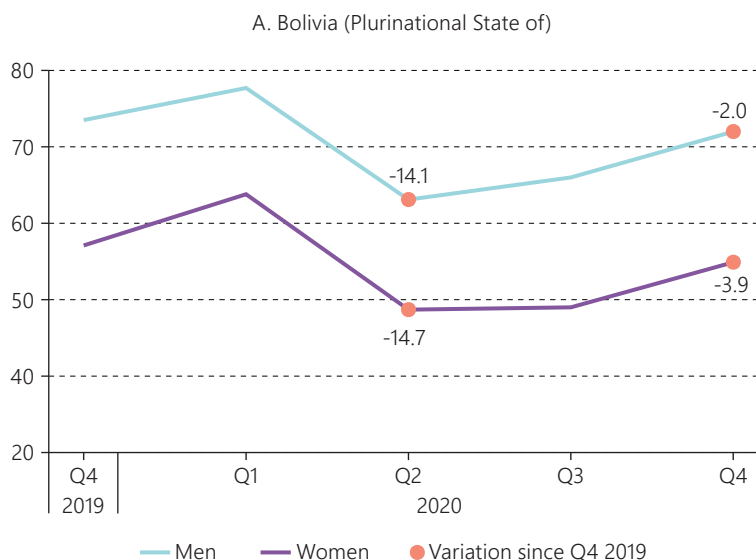
<sup>10</sup> Women may be overrepresented among older persons because their life expectancy is longer than men's.

Ecuador has also had a system of unemployment insurance since 2016. However, according to Jara, Montesdeoca and Tasseva (2022), in 2020 during the COVID-19 pandemic, this provided very limited automatic stabilization, equivalent on average to just 0.1% of household disposable income before the pandemic and mainly targeted to the middle part of the income distribution. Moreover, while a country of similar population, such as Chile, had an average of 300,000 recipients per month in 2020, Ecuador had fewer than 50,000 (ECLAC, 2022a). The modest stabilization effect is likely explained by the large proportion of informal workers who are not covered by this benefit (Jara, Montesdeoca and Tasseva, 2022).

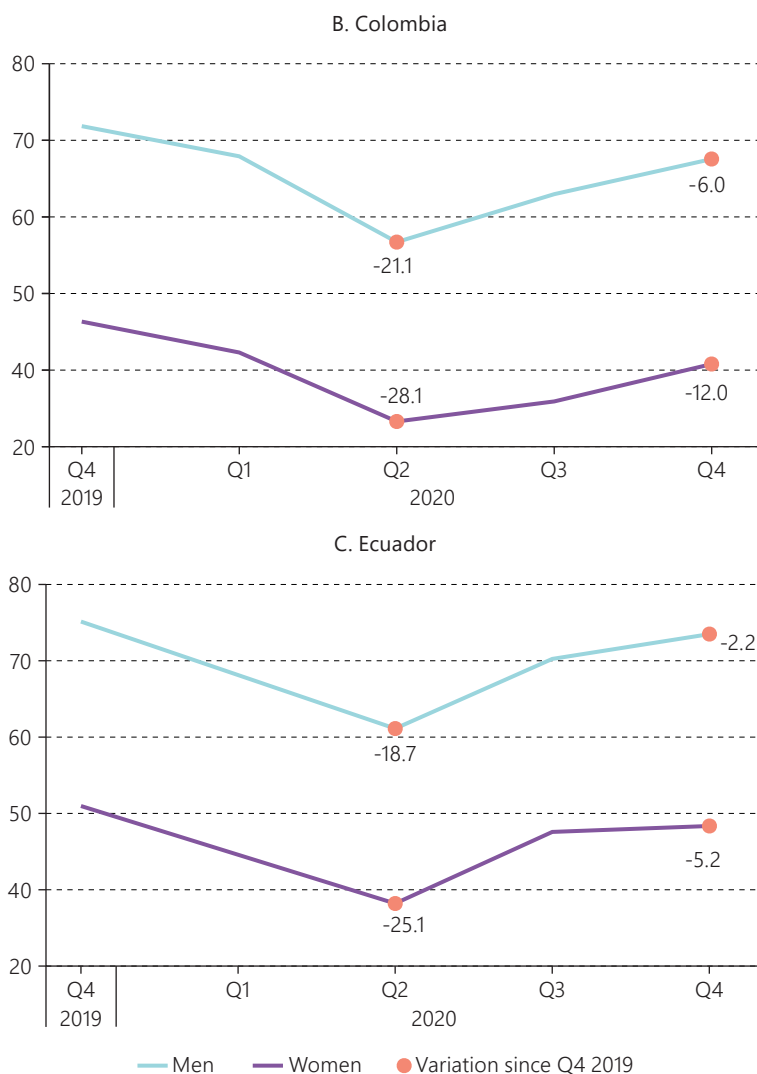
## B. Labour market, tax and transfer policies during the pandemic

Figure 1 illustrates the quarterly trend of employment among women and men in Colombia, Ecuador and the Plurinational State of Bolivia. In these three countries, the female employment rate is systematically lower than the male rate. Moreover, these countries shared the general trend prevailing in the region, albeit with employment falling by different amounts. The greatest impacts occurred in the second quarter of the year, when the pandemic lockdown and containment measures were implemented; but, from the third quarter of the year onward, workers started to return to the labour market, as the stay-at-home measures were gradually lifted. Nonetheless, employment ended the year below the pre-pandemic levels, while women suffered larger percentage falls than men, and the reductions were also longer-lasting. Meanwhile, in terms of heterogeneity across countries, the Plurinational State of Bolivia displayed more modest reductions in employment with a smaller difference between women and men.<sup>11</sup>

**Figure 1**  
Quarterly national employment rates among women and men, fourth quarter 2019–fourth quarter 2020<sup>a</sup>  
(Percentages)



<sup>11</sup> It is not possible to establish this with the information in this figure alone, because the data from this secondary source for the Plurinational State of Bolivia only cover urban areas from the second quarter of 2020 onward. Nonetheless, further analysis by the authors is presented below to support what is described in the text. Firstly, it is shown that the effect of the pandemic on the likelihood of earning an income in the second quarter of 2020 in Colombia and Ecuador was greater in urban areas. This may also have been the case in the Plurinational State of Bolivia and, if so, would reduce the reduction further. Secondly, restricting the data consistently to the urban population only for the entire period in the Plurinational State of Bolivia produces similar results.



Source: International Labour Organization (ILO), ILOSTAT, and Economic Commission for Latin America and the Caribbean/ International Labour Organization (ECLAC/ILO), "Decent work for platform workers in Latin America", *Employment Situation in Latin America and the Caribbean*, No. 24 (LC/TS.2021/71), Santiago, 2021.

<sup>a</sup> The figures for the Plurinational State of Bolivia are of national coverage until the average of the first quarter of 2020, and of urban coverage for the second, third and fourth quarters of 2020. In the case of Ecuador, there is no information for the first quarter of 2020.

In the fiscal response to the COVID-19 pandemic crisis, subsidies and current transfers accounted for most of the increase in current primary expenditure in Latin America. The same was true in Colombia (ECLAC, 2021b) and the Plurinational State of Bolivia, whereas in Ecuador these expenditures were surpassed by interest payments on the public debt by just 0.2 percentage points of GDP (ECLAC, 2024b). Moreover, according to ECLAC (2022a) and the information available in the Latin American countries for which it was possible to analyse income sources in 2020, including Ecuador and the Plurinational State of Bolivia, non-contributory government transfers (COVID-19 emergency transfers and others) represented a larger proportion of women's income than that of men.

ECLAC (2021b) also noted that the already-installed capacity of social protection, such as the non-contributory social protection programmes implemented before the pandemic, which provided cash transfers to persons in poor households, was very important in mitigating the crisis. Countries that had invested in these programmes before the pandemic were able to expand coverage relatively quickly, for example, by increasing additional transfers for women who were already recipients (Families in Action in Colombia, among others), or else by extending coverage to new groups, including informal workers (Tabbush, 2021; ECLAC, 2022b).

More specifically, the governments of the countries analysed implemented a variety of measures to mitigate the economic impact of the COVID-19 pandemic. Table 4 reports the emergency cash transfers and tax measures implemented during the second and fourth quarters of 2020 that affect household disposable income directly<sup>12</sup> in Colombia, Ecuador and the Plurinational State of Bolivia. These include new instruments and parametric changes to existing ones.

**Table 4**  
**Emergency cash transfers and personal tax measures, second quarter 2020–fourth quarter 2020**

Country	Name	COVID-19 payments (Percentage of the median) or rate	Duration	Description
Bolivia (Plurinational State of)	Family Grant ( <i>Bono Familia</i> )	Bs 500 (47%)	March–June 2020	Programme created during the pandemic. For students enrolled in the kindergarten, elementary and secondary cycles in public or private schools, and in alternative or special education subsystems. Coverage: 2.9 million people.
	Family Basket Grant ( <i>Bono Canasta Familiar</i> )	Bs 400 (38%)	March–June 2020	Programme created during the pandemic. Mainly targeted to beneficiaries of <i>Renta Dignidad</i> , the Juana Azurduy Grant and persons with disabilities. Coverage: 1.1 million people.
	Universal grant ( <i>Bono Universal</i> )	Bs 500 (47%)	March–June 2020	Programme created during the pandemic. For persons aged between 18 and 60 years who did not obtain income from the public or private sector and did not receive the <i>Renta Dignidad</i> or Juana Azurduy Grant. Coverage: 3.7 million people.
	Anti-hunger Grant ( <i>Bono contra el Hambre</i> )	Bs 1 000 (94%)	December 2020–	Programme created during the pandemic. For persons with no income aged between 18 and 60 years, persons with disabilities, women mothers enrolled in Juana Azurduy Grant programme, persons affiliated to independent pension systems and workers affiliated to the mining cooperative system. Coverage: 4.2 million people (in 2021).
Colombia	Families in Action	Col\$ 145 000 (34%)	April 2020–	Additional payment for families enrolled in the Families in Action programme. Coverage: 2.5 million families.
	Youth in Action	Col\$ 356 000 (83%)	April 2020–	Two additional payments in addition to the regular payments made at the end of each academic period (June and December). Coverage: 300,000 students.
	<i>Colombia Mayor</i>	Col\$ 80 000 (19%)	April 2020–	Additional payment to individuals. Coverage: 1.7 million people.
	Solidarity Income	Col\$ 160 000 monthly (37%)	April 2020–	Programme created during the pandemic. Targeted to households living in poverty and economically vulnerable conditions that were not enrolled in other social programmes. Coverage: 3 million households.
	VAT refund	Col\$ 37 500 per month (9%)	April 2020–	Programme created during the pandemic. Targeted to households enrolled in Families in Action and those included on the <i>Colombia Mayor</i> priority list. Coverage: 1 million households.
	Unemployment protection	Col\$ 585 202 per month (136%)	April 2020–	Programme that changed from a food voucher to a transfer. Aimed at protecting formal workers who paid into the Family Savings Fund ( <i>Caja de Compensación Familiar</i> ) for five years and are unemployed. Coverage: 30,000 people.
	Solidarity tax	15%–20%	April–August 2020	Temporary tax levied on civil servants or pensioners with monthly income above Col\$ 10 million (more than 23 times the median per capita disposable income).
	Reduction in pension contribution rates	3% and 0.75%	April–June 2020	Temporary reduction for own-account workers. from 16% to 3%, and for wage-earners from 4% to 0.75%.

<sup>12</sup> There were other measures that affected “consumable” income (that is, income including indirect taxes and subsidies) and other transfers in-kind. These are listed in the ECLAC portal “Social Development and COVID-19 in Latin America and the Caribbean” [online] at <https://dds.cepal.org/observatorio/socialcovid19/listamedidas.php>. See also the gender section of “Measures and actions at the national level” of the COVID-19 Observatory in Latin America and the Caribbean [online] at <https://www.cepal.org/es/subtemas/covid-19>.

Country	Name	COVID-19 payments (Percentage of the median) or rate	Duration	Description
Ecuador	Family Protection Grant ( <i>Bono de Protección Familiar</i> )	US\$ 60 (42%)	April–June 2020	Programme created during the pandemic. Round 1: households with rural workers or those affiliated to the social security system for unpaid household workers, earning less than US\$ 400 per month and with no household members receiving contributory/non-contributory benefits or pensions. Coverage: 400,000 households. Round 2: households with heads of household earning less than US\$ 501.60 per month and without household members receiving contributory/non-contributory benefits or pensions. Coverage: 500,000 households.

Source: Prepared by the authors, on the basis of C. Arancibia and D. Macas, "UNU-WIDER SOUTHMOD Country Report: BOLMOD v2.0, 2019–2022", *UNU-WIDER SOUTHMOD Country Report Series*, Helsinki, World Institute for Development Economics Research (UNU-WIDER), 2023; H. X. Jara and others, "Assessing the role of tax-benefit policies during the COVID-19 pandemic: Evidence from the Andean region", *Review of Development Economics*, 2024; and D. Rodríguez, J. Silva and M. Zapata, "UNU-WIDER SOUTHMOD Country Report: COLMOD v2.4, 2019–2023", *UNU-WIDER SOUTHMOD Country Report Series*, Helsinki, World Institute for Development Economics Research (UNU-WIDER), 2024.

Note: The amounts in parentheses are expressed as a percentage of median household per capita disposable income. Unless otherwise specified, payments were made once. Open-ended durations mean that they continued beyond the fourth quarter of 2020. In the Plurinational State of Bolivia, the median is self-calculated using the BOLMOD output database, and, in Colombia, the median percentage amounts were calculated proportionally to those of table 3. In COLMOD, the following programmes are not simulated: (i) Shops for the People (*Tiendas para la Gente*); (ii) programmes for victims of the conflict and persons demobilized from armed groups; (iii) temporary economic compensation (for persons affiliated to the subsidized regime with COVID-19 confirmed); and (iv) the economic incentive for rural workers and producers over 70 years of age (with mandatory isolation and not covered by any benefit). According to information posted on the ECLAC portal "Social Development and COVID-19 in Latin America and the Caribbean", the pilot of (i) only benefited about 1,750 people in the fourth quarter of 2020; and the microdata do not make it possible to identify potential beneficiaries of (ii) and (iii). In ECUAMOD, the following programmes are not simulated: (i) the Nutritional Support Grant (*Bono de Apoyo Nutricional*) and (ii) the Family Protection Grant for the emergency caused by the presence of COVID-19 in Ecuador, in support of the Province of Galapagos (*Bono de Protección Familiar por Emergencia por la presencia del COVID-19 en Ecuador - Apoyo a la provincia de Galápagos*). According to information from the portal, (i) benefited only about 8,000 families in the fourth quarter of 2020.

The Plurinational State of Bolivia confronted the COVID-19 pandemic at a time of social and political instability. A transitional government had to face the most challenging moment of the pandemic, whereas the new government elected in 2020 administered the post-pandemic recovery. The former introduced three cash transfers: the Family Grant (*Bono Familia*), the Family Basket Grant (*Canasta Familiar*) and the Universal Grant (*Bono Universal*), after which the newly elected government introduced the Anti-hunger Grant (*Bono contra el Hambre*). In addition to these subsidies, a variety of economic and social measures were adopted to cushion the impact of COVID-19. These included reductions in electricity, drinking water and gas prices; the deferral of taxes on company profits; the deferral of credit and other payments. However, these measures had discretionary components that make it difficult to identify the final beneficiaries.

In Colombia, a series of reforms were made to tax and transfer policies in response to the emergency in 2020. In the case of the *Colombia Mayor* and Families in Action transfer programmes, a special payment was programmed for April–June 2020, which was subsequently extended for the rest of the year. In addition, an emergency cash transfer policy, Solidarity Income (*Ingreso Solidario*), was implemented, targeting persons classified in poverty and vulnerability groups A, B or C by the National Information System on Social Programme Beneficiaries (SISBÉN) IV, who were not receiving cash transfers from the Families in Action, *Colombia Mayor* or Youth in Action programmes. In addition, a VAT refund was introduced for the poorest households of Families in Action and older persons included on the *Colombia Mayor* priority list and also classified in SISBÉN IV poverty groups A or B.

In the case of the social security system, mandatory pension payments dropped to 3% and 0.75% for own-account workers and wage-earners, respectively, in April and June 2020. Social protection programmes implemented or expanded by the central government (Solidarity Income, Families in Action, Youth in Action and *Colombia Mayor*) mostly had female beneficiaries (Presidential Counsellor for Women's Equality of Colombia, 2020).

In Ecuador, transfer policies were created, such as the Family Protection Grant and an additional payment in the Human Development Grant programme. In 2020, the first and second stages of the Family Protection Grant programme were implemented, using the Social Registry Index to identify beneficiaries. In the first stage (April–May 2020), the transfer targeted persons affiliated to the social security regimes for rural workers or unpaid work, who needed to have incomes below the legal minimum wage and not have household members receiving contributory or non-contributory benefits or pensions. In the second stage (May–June 2020), the number of beneficiaries was increased, but some of the eligibility conditions were changed: the transfer excluded households with beneficiaries from the first stage, and it targeted heads of household with an income below the monthly cost of the food basket and subsistence services. Unemployment insurance remained unchanged in terms of benefits or requirements, contrary to what occurred in other countries that had this instrument. The only change made was to streamline its procedures and reduce the minimum number of days of unemployment to 10 (ECLAC, 2022a; Jara, Montesdeoca and Tasseva, 2022).



### III. Methodology

Different exercises are needed to analyse the countercyclical impact of personal taxes and transfers on the income distribution of women and men.

The first is an evaluation of the countercyclical impact of the emergency policies implemented during the COVID-19 pandemic (from the second quarter of 2020 onward) on the income distribution of women and men. This entails comparing the actual income distribution in 2020 taking account of the abrupt changes that occurred in the labour market, with a counterfactual scenario in which the emergency policies were not implemented. As the labour market factors would be the same in both distributions, and only the actual distribution would include the emergency measures (including parametric changes to existing policies), a comparison of the two distributions would make it possible to identify the countercyclical effect of the emergency policies that were actually implemented.

The second is an evaluation of the automatic countercyclical impact of the taxes and transfers that were in place before the COVID-19 pandemic. This entails comparing the income distribution that existed before the abrupt changes in the labour market caused by the pandemic—for example in the last quarter of 2019—with a counterfactual scenario in which the emergency policies had not been implemented in 2020 (but the abrupt changes in the labour market did occur). Since the tax and transfer policies would be those existing before the pandemic in both distributions, and the labour market would be different in both cases, comparing the two distributions would reveal the countercyclical automatic stabilization effect of those existing taxes and transfers.

Thus, to assess the countercyclical impact of the tax and transfer policies that were in place prior to COVID-19 and the emergency policies implemented during the pandemic (including parametric changes to existing policies), a counterfactual income distribution is simulated in each country, assuming absence of the emergency policies, but where abrupt changes in the labour market did occur (Paulus and Tasseva, 2020). These counterfactual distributions are constructed using the BOLMOD, COLMOD and ECUAMOD tax and transfer microsimulation models of the SOUTHMOD project, developed on the EUROMOD platform by the World Institute for Development Economics Research

of the United Nations University.<sup>13</sup> Each model uses a survey adapted to perform the simulations, as indicated in table 5. More specifically, the disposable income of women and men is compared in the following situations, as summarized in table 6: (i) before the pandemic (that is, with the 2019 labour market and 2019 policies); (ii) in a counterfactual scenario in which the emergency policies had not been implemented (2020 labour market and 2019 policies); and (iii) during the pandemic (the 2020 labour market and 2020 policies).

**Table 5**  
Surveys and microsimulation models of taxes and transfers

Survey	Model
Household survey	BOLMOD
Great Integrated Household Survey	COLMOD
National Survey on Employment, Unemployment and Underemployment	ECUAMOD

Source: Prepared by the authors.

**Table 6**  
Income distributions of women and men being compared

Income distribution of women and men	Labour market	Taxes and transfers
(i) before the pandemic	2019	2019
(ii) in a counterfactual scenario without emergency policies	2020	2019
(iii) during the pandemic	2020	2020

Source: Prepared by the authors.

The models attempt to simulate as many taxes and transfers as possible; and, when this cannot be done, they use data obtained from the surveys. Policies are simulated on an accrual basis (that is, not necessarily when payments are actually made). For further information, see the report on each model (Arancibia and Macas, 2023; Jara and others, 2024b; Rodríguez, Silva and Zapata, 2024). For the purposes of this paper, the following amendments were made to the conditions programmed in version A1.0 of the SOUTHMOD package:

- BOLMOD: for the allocation of the Family Basket Grant in 2020, complementary information was found (Ministry of Productive Development and Plural Economy/Ministry of Economy and Public Finance, 2020). On the basis of this information, recipients of the Extreme Poverty Grant payable to the visually impaired and the Monthly Grant for Persons with Severe and Very Severe Disabilities were also included. In addition, because the Family Basket Grant and the Family Grant were paid only once in 2020, and because a quarterly analysis is performed rather than a monthly average as is the convention in SOUTHMOD, these transfers were divided by three months instead of 12 (which then assumes that the resources were fully consumed during the respective quarters).
- COLMOD:
  - *Colombia Mayor*, Families in Action, the VAT refund to poor households and Solidarity Income: as the SOUTHMOD modelling convention is to capture policies in force as at 30 June, the number assumed (randomly) as receiving benefits was adjusted slightly

<sup>13</sup> The results presented here are based on the tax-benefit microsimulation models in SOUTHMOD\_A1.0. Models in the SOUTHMOD bundle are developed, maintained and managed by UNU-WIDER in collaboration with Southern African Social Policy Research Insights, the International Inequalities Institute of the London School of Economics and Political Science, and local partners in selected developing countries (Colombia, Ecuador, Ethiopia, Ghana, Mozambique, Peru, the Plurinational State of Bolivia, Rwanda, Tanzania, Uganda, Viet Nam and Zambia), in the scope of the SOUTHMOD project. The results presented here are based on EUROMOD version 3.6.19. Originally maintained, developed and managed by the Institute for Social and Economic Research (ISER), since 2021 EUROMOD is maintained, developed and managed by the Joint Research Centre (JRC) of the European Commission, in collaboration with EUROSTAT and national teams from European Union countries. The contributions to the development of SOUTHMOD and EUROMOD are gratefully acknowledged. The results and their interpretation presented in this publication are solely the responsibility of the authors.

to adapt the simulation of eligibility for these programmes to the respective quarters, within the eligible individuals and households. In the case of *Colombia Mayor* in 2020, the amounts per region were also corrected to Col\$ 125,000 per month in Bogota and Col\$ 80,000 in the rest of the country.

- Families in Action: as the recipients of the transfers are women in the role of “mothers” (ECLAC, 2024c), in households in which the person designated as head of household (male or female) has a partner of the other sex, the transfer was assigned to the woman of the couple, instead of being paid strictly to the head of household (as defined by EUROMOD on the basis of income in the first instance).
- Solidarity Income: as this was the emergency programme with the broadest coverage, and most of its beneficiaries are known to be women (Presidential Counsellor for Women's Equality of Colombia Mujer, 2020), the following adjustment was made (based on a response to a right-to-information request made to the Social Prosperity Department), to match the totals by gender that participated in it. Considering the households eligible for the family benefit components, the assumption went from a random 57% receiving the benefit with no gender distinction, to assuming that 100% of women and 35% of men received it.
- ECUAMOD:
  - Human Development Grant: since the recipients of the transfer are women as “mothers” (ECLAC, 2024c), in the units specified by the transfer (namely the family), where the man or woman defined as the head of household has a partner not of the same sex, the transfer was paid to the woman in the couple, instead of being assigned strictly to the head of household.
  - Family Protection Grant: as this transfer was paid only once in the second quarter of 2020, it was divided by three instead of 12 for that quarter.

Unemployment insurance is not simulated in ECUAMOD because there are no data on previous contributions or incomes with which to simulate it. By making a series of assumptions and calibrations to compensate for this situation, Jara, Montesdeoca and Tasseva (2022) simulated unemployment insurance in ECUAMOD and reported the aforementioned very small automatic stabilization effect of just 0.1% of household disposable income. Accordingly, for the purposes of this paper, the authors decided not to perform the simulation, because it would involve a number of assumptions with probably a negligible effect on the results.

As noted above, the implementation of household income surveys was hampered during the pandemic, especially in the second quarter of 2020 when they had to be conducted by telephone. As a result, the 2020 versions of these surveys are missing key variables for the tax and transfer microsimulation models (for example, household identifiers in Ecuador and non-labour income in Colombia, whereas in the Plurinational State of Bolivia the survey does not cover the second quarter of 2020). For this reason, nowcasting techniques were used to adjust the microdata from the 2019 versions of these surveys (which contain all of their fundamental variables so they are processed smoothly in the models), to reflect the labour status and income distribution of individuals in 2020 during the pandemic (Jara and others, 2024a). The latter is obtained from surveys that do not have all the variables to be processed in the tax and transfer microsimulation models, but do have labour market data. The surveys used for nowcasting are shown in table 7. Thus, the 2019 surveys are used to reflect the situation in that year and process them in the models, while the same surveys, but adjusted, are used for the same purposes in 2020. As table 7 shows, the surveys are the same as in table 5 except for the Plurinational State of Bolivia, because the Household Survey does not cover the second quarter of 2020.

**Table 7**  
**Surveys compiled in 2020 and used for nowcasting in 2019 surveys**

Country	Survey
Plurinational State of Bolivia	Continuous Employment Survey
Colombia	Great Integrated Household Survey
Ecuador	National Survey on Employment, Unemployment and Underemployment

Source: Prepared by the authors.

Specifically, nowcasting consists firstly of using the survey data gathered in 2020 during the pandemic (table 7) to estimate the probability that persons over 17 years of age, according to their characteristics, will have positive labour income. This is done using a probit econometric model. Secondly, the parameters estimated with that model are then applied to the population over 17 years of age from the 2019 surveys (table 5), to predict the probability that the individuals in question would have had positive income in 2020. Lastly, in these surveys, individuals who are less likely to have maintained their incomes are removed, until the total employment observed in 2020<sup>14</sup> is attained, classified in 24 groups formed by main economic sector (primary, secondary and tertiary), (in)formality,<sup>15</sup> wage-earning or self-employed, and gender. Before doing this, a random term is added to the probabilities to recognize the fact that the variables considered are not the only ones that change from one year to the next to determine the likelihood of earning an income. This represents an adjustment to the extensive margin of the labour market. In addition, an adjustment is also made to the intensive margin, whereby the income of persons over 17 years of age, whose income was not eliminated, is adjusted by the average income variation between 2019 and 2020 of the group to which they belong (in both years considering only those who were predicted not to lose their income). This yields surveys that reflect the 2020 situation and can be processed in the tax and transfer microsimulation models. A logical consequence of the nowcasting procedure is that, in terms of income before taxes and transfers, the scenarios created for 2020 will only differ in labour market income from those observed in 2019 as a result of the two adjustments described above, with everything else remaining constant (such as non-labour income and demographics).<sup>16</sup> This exercise can also be considered as a “controlled experiment” (while taxes and transfers obviously could change between 2019 and 2020 thanks to their simulation).

The results of the probit model are reported in tables A1.1 and A1.2 of the annex, with the estimations showing the expected directions (for example, the probability of having positive income is higher for men, persons of intermediate ages, heads of household, those with higher education and, during the second quarter of 2020, persons living in rural areas). In contrast, the aggregate result of the nowcasting is illustrated in figure A1.1 of the annex, which shows the proportion of women and men earning labour income by late<sup>17</sup> 2019 and in the second and fourth quarters of 2020. A closely related but different indicator than the employment rate of figure 1 was used, because a survey response that says a person is receiving a labour income is related more directly to the

<sup>14</sup> Since the Plurinational State of Bolivia uses different surveys each year, there could be differences in employment by group owing to differences in the sample frames. Accordingly, instead of using the employment reported in the 2020 Continuous Employment Survey as the target, the percentage change between 2019 and 2020 is calculated using Continuous Employment Survey for both years, then this is applied to the employment observed in the 2019 Household Survey to obtain the targets in 2020.

<sup>15</sup> A worker is considered informal if he/she earns an income but does not contribute to social security.

<sup>16</sup> Alternatively, elements such as these could be included in the nowcasting; but this was not done because changes in the labour market were probably much more significant than other factors (and modelling demographic changes is particularly complex).

<sup>17</sup> The expression “by late 2019” is used, because the SOUTHMOD convention is to capture the tax and transfer policies in force as at 30 June each year, whereas the reference periods for income before taxes and transfers in the surveys of Colombia and the Plurinational State of Bolivia cover all of 2019, and that of Ecuador refers to November of that year.

possibility of receiving transfers and paying taxes and social contributions, than one says that a person is employed (owing to the temporality and definition of the indicator).<sup>18</sup> Nonetheless, the two figures show a similar pattern. Lastly, as a validation of nowcasting, figure A1.2 of the annex reports the same proportion of individuals receiving labour income, but from the data observed in the surveys used for nowcasting, in which it can be seen that nowcasting closely replicates what was actually observed.<sup>19 20</sup>

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<sup>18</sup> According to ILOSTAT, "Employment comprises all persons of working age who during a specified brief period, such as one week or one day, were in the following categories: a) paid employment (whether at work or with a job but not at work); or b) self-employment (whether at work or with an enterprise but not at work)".

<sup>19</sup> Following the recovery of the labour market in the fourth quarter of 2020, in a few groups the proportion of income earners is higher than in 2019. As these cases are few, and for reasons of simplicity, no income was added to extra persons to attain the totals (in other words, nowcasting only eliminates income).

<sup>20</sup> In the case of men in Colombia in the fourth quarter of 2024, the predicted percentage (applying nowcasting to the 2019 survey) is slightly higher than the figure reported in the 2020 survey. In an analysis of the 12 groups defined for men, the predicted number of income recipients (not the percentage) is equal (in eight groups) or lower (in four groups) than the observed number. Thus, the difference is surely due to the different numbers of non-recipients in both years and surveys, which in turn determine different relative weights of the percentage of recipients in each group.



## IV. Results: the stabilizing effect of personal taxes and transfers

Before considering the specific results of this section, the following paragraphs explain the order in which the results are presented, along with some of their general elements and how they are related. Firstly, figure 2 shows the components (in terms of income, taxes, and transfers) of the levels of men's and women's *individual* disposable income in 2019 prior to the COVID-19 pandemic. These levels are expressed as a percentage of men's individual disposable income (which is therefore set to 100%), in order to analyse gender inequalities.<sup>21</sup> The results are then presented by quintile of *household* per capita disposable income; and the average *individual* income is shown for both women and men within these quintiles. For example, a woman with no income of her own, but with a household income that places her in the highest quintile, will contribute to the average of the women (only) in that quintile. This means that the comparison of household quintiles will reveal the progressivity of taxes and transfers, and also how these fiscal instruments contribute to gender differences in individual disposable income.<sup>22</sup>

Secondly, the same levels of individual disposable income are shown for women and for men, but with the following additional elements (figure 3): (i) the levels of men's and women's individual disposable income are expressed in absolute value terms (in dollars) to give an idea of their magnitudes; (ii) for this reason, and to be able still to analyse gender inequalities, this is complemented by a second indicator on women's disposable income as a percentage of men's; (iii) both the indicator of absolute values and the indicator of relative values between women and men are presented before and after taxes and transfers, to show the joint effect of these government actions; and (iv) the results for the second quarter of 2020 are added, to start comparing the effect of this government action during the COVID-19 pandemic versus the drop in labour market income (as these are absolute values, the results will not be presented by quintile, since progressivity is usually measured relatively between quintiles).

<sup>21</sup> To avoid possible divisions by very small extreme values, observations in the first percentile of the individual disposable income distribution were eliminated (the "winsorization method").

<sup>22</sup> This differs from studies that consider gender gaps in the individual incomes of men and women without considering their positions in the distribution of household disposable income.

Thirdly, the foregoing analyses are combined to make the analysis gradually more complex, while resuming the joint exploration of gender inequalities, progressivity and income composition, but this time including the period of the COVID-19 pandemic. The composition of men's and women's disposable income is shown as a percentage of men's individual disposable income in 2019, separating the results by quintile and including both 2019 and the second quarter of 2020 (figure 4). Using men's disposable income in 2019 as the benchmark (in other words, setting it to 100%) makes it possible to analyse the effect of the income components during the pandemic at the same time as gender inequalities.

Lastly, levels are replaced by *changes*, and the automatic stabilization impact of the tax and transfer policies that were already in place before the pandemic is separated from the impact of the emergency policies that were implemented (figures 5 and 6). This reveals the steep fall in labour market income between 2019 and 2020 and the differential cushioning effect of taxes and transfers between women and men.<sup>23</sup>

That said, figure 2 shows the composition of disposable income among women and men in late 2019 before the COVID-19 pandemic.<sup>24</sup> This baseline is presented in terms of labour income, non-labour income, transfers, pensions, taxes and social contributions. As noted above, the values are expressed as a percentage of men's individual disposable income (which therefore corresponds to 100% as shown in the figure) and by household per capita disposable income quintile. Firstly, it can be seen that women always have a smaller individual disposable income than men. This gender gap is composed of various disparities: in participation in the (un)paid labour market, hours of (un)paid work, non-labour and labour income per hours worked, and the transformation of this income through the tax and transfer systems (Doorley and Keane, 2024). The disposable income gender gap refers to the *total* gender gap that results from all of these factors.<sup>25</sup> Secondly, the component that contributes most to gender inequality in disposable income is individual labour income, as has been documented previously in many studies (for example, ECLAC 2022b). Thirdly, transfers are more important for the lower-income sectors, at both the household and the individual levels. At the individual level within each quintile, the transfers represented a larger share of disposable income in the case of women. This is consistent with what is reported by ECLAC (2022a) concerning non-contributory transfers in 2020 (whether or not related to the state of emergency caused by COVID-19), as observed in the household income surveys of Ecuador and the Plurinational State of Bolivia. Lastly, the microsimulation of taxes and social contributions shows that these elements represent a larger income share in the highest quintiles and among men.<sup>26</sup> The joint impact of personal taxes and transfers is seen to be progressive; in other words when moving from income before taxes and transfers to disposable income, the relative differences between quintiles and between women and men are reduced. At the same time, as also noted above, the impact of the tax and transfer system, including indirect taxes (of non-progressive design), could generate a different result in terms of "consumable" income (including indirect taxes and subsidies as proposed by Lustig (2023), for example).<sup>27</sup>

<sup>23</sup> The stabilization provided by taxes and transfers is usually presented relative to the change in labour income (Auerbach and Feenberg, 2000). In contrast, this paper relates it to the level of disposable income before the shock. This is because the lower quantiles contain a large number of people with very small labour incomes, or none, especially in the case of women. This also means that the change in these incomes is very unequal between quintiles and between men and women, and using such a small denominator generates large differences that become difficult to compare.

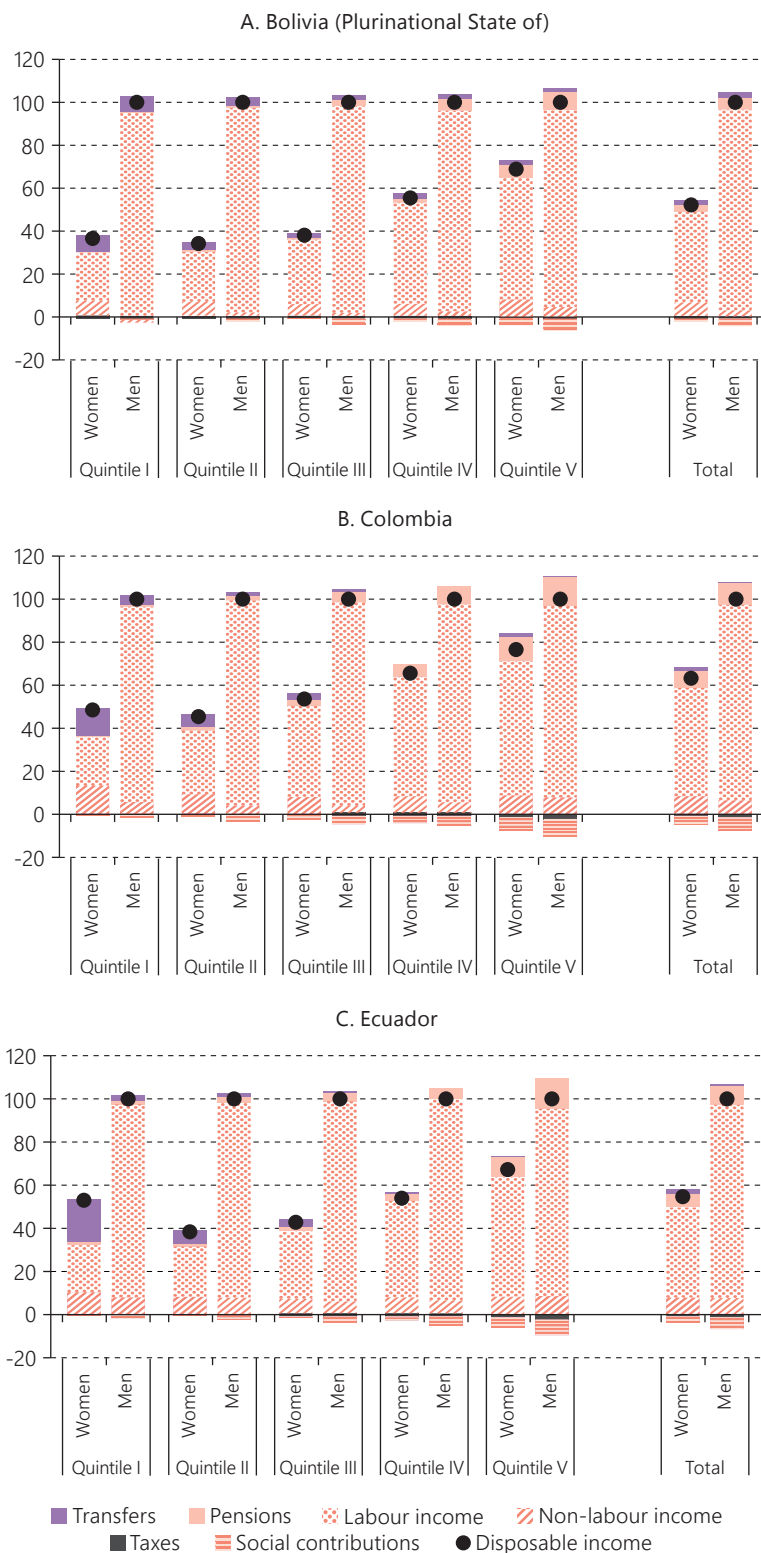
<sup>24</sup> See footnote 17.

<sup>25</sup> There are also studies that analyse the gender wage gap by controlling statistically for worker characteristics, in order to study the portion that is not explained by differences between men and women in these observable characteristics. By comparison the gap measured without controlling for other characteristics, as in this paper, is often referred to as the unadjusted gap.

<sup>26</sup> The (almost imperceptible) negative non-labour income among men in the first quintile in the Plurinational State of Bolivia stems from a variable that, according to the SOUTHMOD convention, should include regular maintenance payments between households. In BOLMOD, while including these expenditures the variable also includes some that may also occur within households (child or other allowances and expenditures on childcare and kindergartens).

<sup>27</sup> Reference was made to the fact that the design of indirect taxes is not progressive, since their rates (or specific taxes per unit) do not depend on income level. However, by including them, it is also important to consider the current high levels of evasion (for example, VAT) and informality, which, paradoxically, could reduce their regressive impact (Bachas, Gadenne and Jensen, 2024).

**Figure 2**  
**Composition of disposable income, women and men aged 17 years and over, by income quintile, <sup>a</sup> 2019**  
*(Percentages of men's disposable income)*

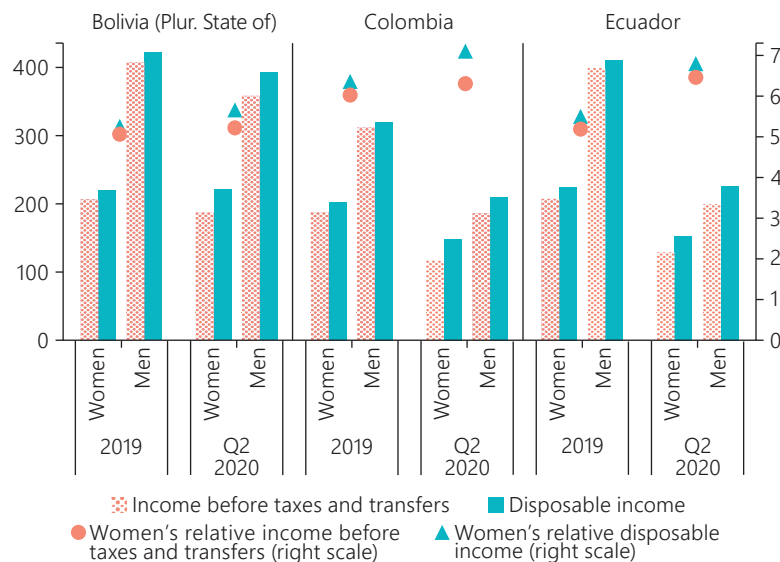


Source: Prepared by the authors on the basis of household surveys and microsimulation models.

<sup>a</sup> Quintiles of household per capita disposable income (pre-COVID-19).

To start analysing the effect of countercyclical fiscal policies during the COVID-19 pandemic in a context of diminishing labour market incomes, figure 3 shows the average income of women and men in dollars before and after taxes and transfers, both in 2019 and in the second quarter of 2020. To continue the gender inequality analysis, the right scale also includes women's income as a percentage of men's in each year. Firstly, the second quarter of 2020 reveals some of the elements that were mentioned for 2019 in the previous figure. In 2020, women's income also moved closer in percentage terms to men's after government action through personal taxes and transfers. Before pursuing the results for 2020 further, it is worth recalling that the surveys were hampered during this year, and synthetic micro-databases had to be generated by modifying the labour market observed in the 2019 databases to reflect the subsequent changes. The logical consequence of this nowcasting procedure is that changes in pre-tax income and transfers only reflect (or in this study are equivalent to) changes in the labour market; they do not reflect changes in non-labour income or demographics, for example, which were presumed to be less relevant in this crisis. That being said, the second event to note is the now well-known steep fall in labour market incomes among both women and men in all countries. As this was more accentuated among men, the gender inequality of labour market earnings was alleviated slightly. As shown in the figure, women's income before taxes and transfers grew in 2020 relative to that of men, especially in Ecuador and to a lesser extent in Colombia and the Plurinational State of Bolivia. Thirdly, in terms of the evolution of women's relative disposable income, the tax and transfer systems tended to bring women's income even closer to that of men during the pandemic, particularly in Colombia and the Plurinational State of Bolivia, although only marginally in Ecuador. Thus, the levelling down in the labour market and the effect of taxes and transfers conspired in the same direction to temporarily reduce the gender gap in disposable income in the three countries to varying degrees.

**Figure 3**  
Average income by sex, and women's income relative to that of men before and after taxes and transfers, persons aged 17 years and over, 2019 and second quarter 2020  
(United States dollars and percentage of men's disposable income in each year)



Source: Prepared by the authors, on the basis of household surveys, nowcasting and microsimulation models.

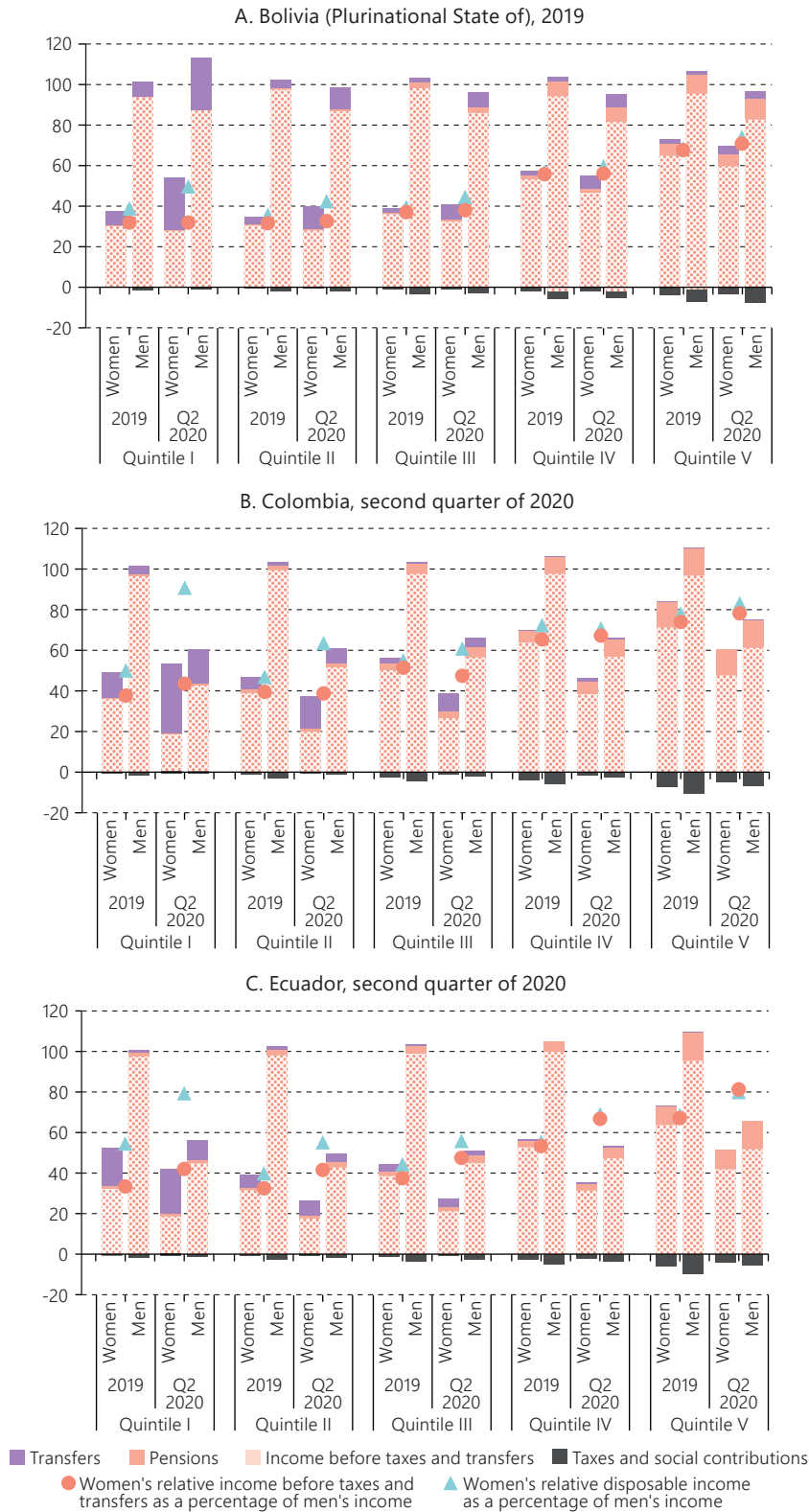
Note: The figures for Colombia and the Plurinational State of Bolivia used the 2019 exchange rates reported by the United Nations Conference on Trade and Development (UNCTAD), Data Hub [online] <https://unctadstat.unctad.org/>; and the same rates were used for 2020 as this is a purely comparative exercise.

Figure 4 resumes the joint exploration of gender inequalities, progressivity and income composition (as was done in figure 2 for 2019), now combined with the developments that occurred in the second quarter of 2020 during the COVID-19 pandemic (as included in figure 3 without analysing progressivity). It then shows the composition of disposable income among women and men, separating the results by household disposable income quintile and including the 2019–2020 period. Income is shown as a percentage of men's disposable income in 2019 (which is set at 100% as in the figure). The right scale also includes women's income as a percentage of men's in each year (that is, without holding the latter income fixed at the 2019 level, so that this second indicator reflects gender inequality in each year).

The figure shows, firstly, that the greatest impact of taxes and transfers in terms of reducing the gender gap during the first quarter of 2020, relative to that of 2019, resulted mainly from transfers at the lower end of the income distribution. In the first quarter of 2020, women's income after taxes and transfers, relative to men's in the first two quintiles, is considerably higher than before these instruments were applied; and the same can also be seen in the third quintile. At the same time, the component that grew by most in these quintiles between 2019 and the first quarter of 2020 was transfers. When describing figure 2, it was noted that in 2019 transfers were more significant for the lower income segments, both at the household and at the individual levels, so women received larger amounts on average. The same occurred in 2020, considering the absolute levels of transfers and then, certainly, also in terms of their relative importance in terms of disposable income (since women have smaller disposable incomes). In terms of changes, transfers grew by relatively more for households with lower incomes, while, at the individual level, the result depends on whether gender differences in the receipt of transfers are considered in relative or absolute terms, and in the latter case, which country is analysed. In absolute terms, only in Colombia is it clear that the growth of transfers was greater for women up to the third quintile, while in the Plurinational State of Bolivia and Ecuador it is difficult to discern with these graphs since they show levels. Accordingly, as noted above, the following figure compares changes and thus this can be more clearly distinguished.

Figure 4 shows, secondly, that the aforementioned narrowing of the gender gap in labour income in Ecuador in the second quarter of 2020, resulting from the steeper fall among men (when referring to the entire population and a "levelling down" in figure 3), occurred across the entire income distribution. The same is true, albeit to a lesser extent, in the higher income quintiles in Colombia and the Plurinational State of Bolivia. Thirdly, in the higher quintiles of Colombia and Ecuador, the payment of taxes and social contributions decreases among both women and men. Both for these fiscal instruments and for transfers, at this point it is still impossible to separate the automatic stabilization provided by existing policies from the impact of the emergency policies that were implemented (including parametric changes to existing policies), as discussed below.

**Figure 4**  
**Composition of women's disposable income and relative income before and after taxes and transfers, persons aged 17 years and over, by sex and household income quintile,<sup>a</sup> 2019 and second quarter of 2020**  
*(Percentages)*

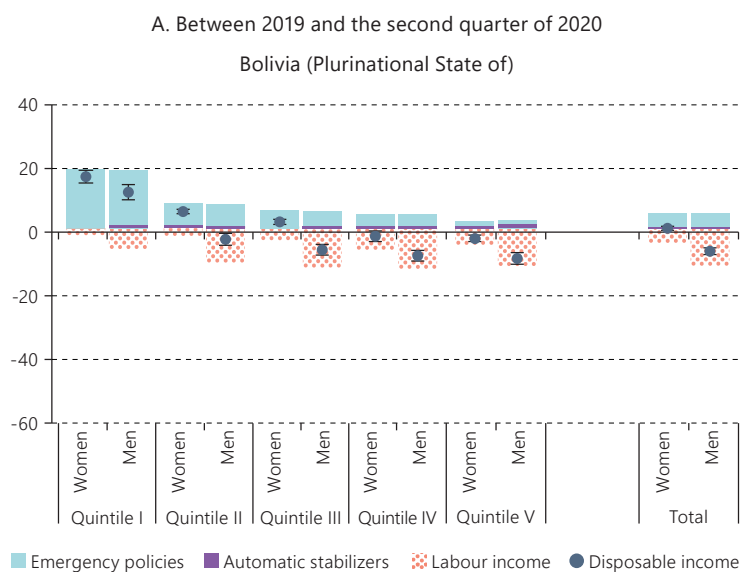


Source: Prepared by the authors on the basis of household surveys, nowcasting and microsimulation models.

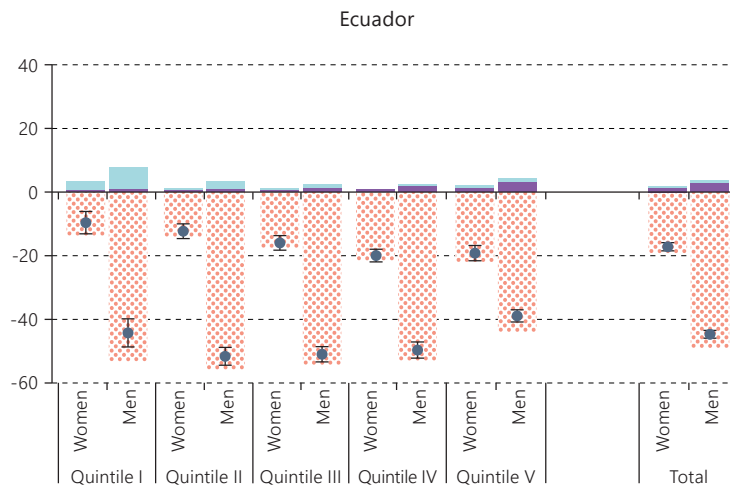
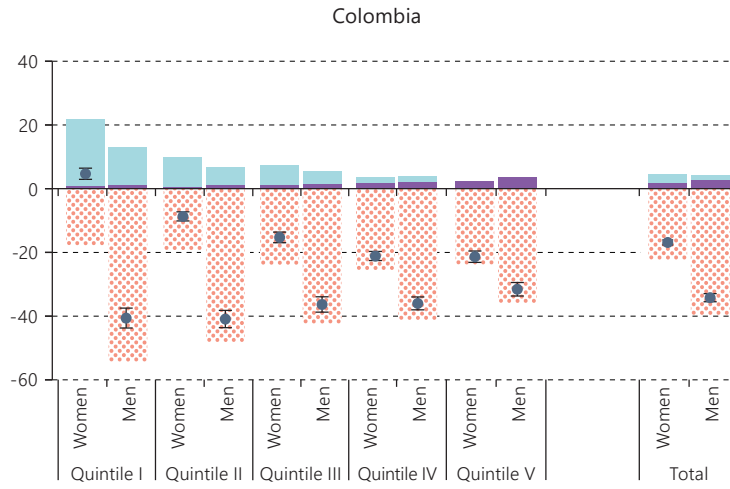
<sup>a</sup> Quintiles of household per capita disposable income (pre-COVID-19).

The analysis now considers income variations, rather than levels. Figure 5 shows the breakdown of variations in disposable income resulting from: (i) lost labour market income; (ii) the automatic stabilization provided by existing policies; and (iii) the emergency policies that were implemented. Panel B of the figure extends the analysis to the fourth quarter of 2020, when several health restrictions had already been lifted. As in figure 4, income is expressed as a percentage of men's disposable income in 2019. Thus, the percentage-point differences in the previous figure are equivalent to the percentages shown in figure 5.<sup>28</sup> This makes it possible to clarify some of the changes described. Starting with the analysis by income quintile, disposable income fell in the second quarter of 2020 in all quintiles except the lower part of the distribution in the Plurinational State of Bolivia (see panel A). As the labour market staged a relative recovery in the fourth quarter of 2020 (see panel B), the exceptions became the majority in the Plurinational State of Bolivia; and, in Colombia, they also became the majority in the first quintile for women and men and even slightly higher in the distribution in the case of women. Secondly, an analysis of the components of disposable income reveals a steep fall in labour income in all quintiles in the second quarter of 2020. Thirdly, emergency policies propped up disposable income in the lower part of the distribution in this period. However, only in the Plurinational State of Bolivia did these compensations prevent disposable income from falling, as mentioned above. After the relative recovery of the labour market in the fourth quarter of 2020, the maintenance of emergency policies in Colombia was also what made it possible to sustain disposable incomes in the lower part of the distribution. Fourthly, automatic stabilizers played a minor role, concentrated in the upper part of the distribution (this is consistent with the results reported by Rodríguez and others 2022; and Jara and others 2024a).

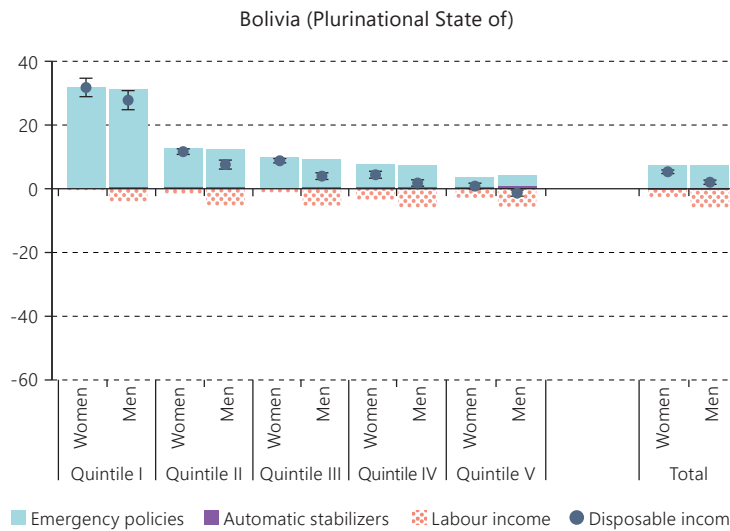
**Figure 5**  
Decomposition of variations in disposable income of women and men aged 17 and older, by household quintile<sup>a</sup>  
(Percentage of men's disposable income in 2019)



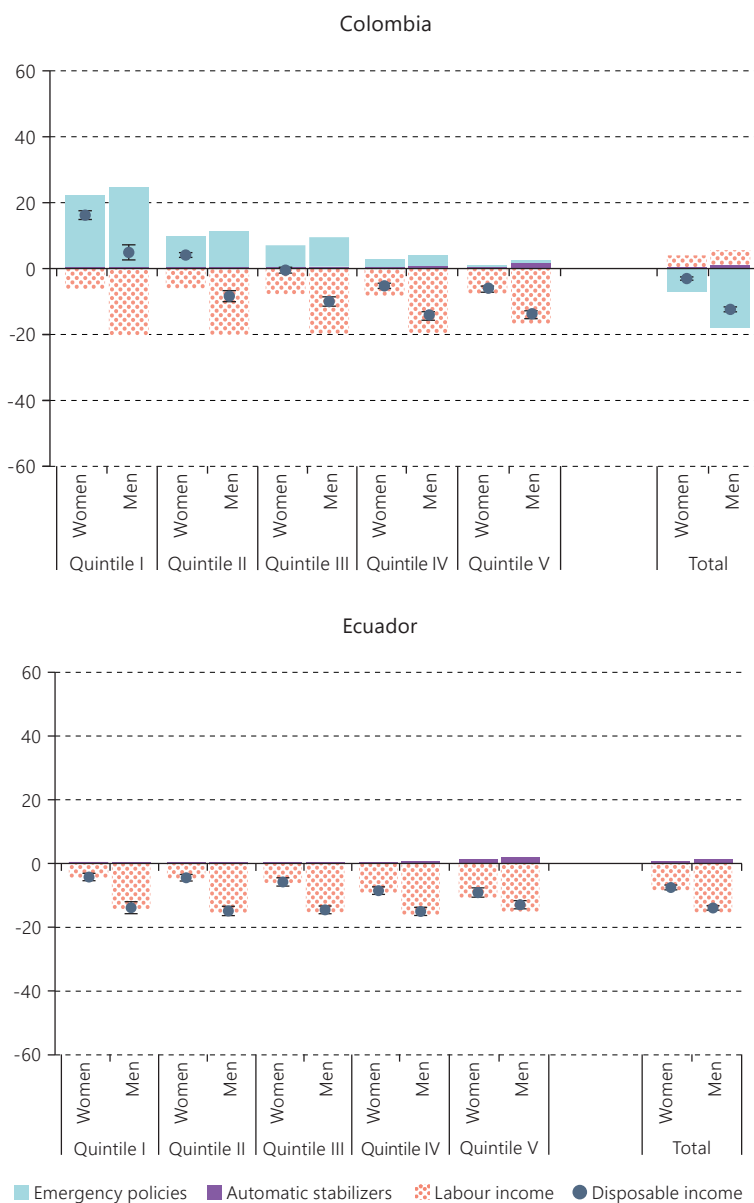
<sup>28</sup> For example, figure 4 shows that women's disposable income in the first quintile in the Plurinational State of Bolivia rose by slightly less than 20 percentage points, from barely 40% of that of men in 2019 to just under 60% in the first quarter of 2020. Meanwhile, figure 5 shows that in 2019, the disposable income of women in the example increased by slightly less than 20% relative to that of men.



B. Between 2019 and the fourth quarter of 2020



■ Emergency policies ■ Automatic stabilizers ■ Labour income ● Disposable income



Source: Prepared by the authors on the basis of household surveys, nowcasting and microsimulation models.  
 Note: 95% confidence intervals. Since the Great Integrated Household Survey does not include its sample variables, the household is considered as the primary sampling unit and the region as the stratum.  
<sup>a</sup> Quintiles of household per capita disposable income (pre-COVID).

The following analyses the results reported for women and men in figure 5. Since the variations use the same denominator in each case (that is, men's pre-pandemic disposable income), the differences reflect absolute disparities in the components of disposable income and, thus, also the widening or narrowing of the gender gap. As in the previous figures, it can be seen firstly that men's labour market incomes decreased by more than women's. Secondly, it is now clear that, in terms of absolute amounts, women and men benefited similarly from the emergency policies in the first quarter of 2020 in the Plurinational State of Bolivia, while women in the lower quintiles benefited more in Colombia, but less in Ecuador. To gain a more precise idea of the magnitude of these effects, the emergency policies implemented in the

second quarter of 2020 were estimated to represent 13%, 7% and 18%, of men's 2019 disposable income in the first quintile in Colombia, Ecuador and the Plurinational State of Bolivia, respectively. In the case of women in the first quintile, emergency policies (relative to the same denominator of men's disposable income in 2019) represented the same percentage in the Plurinational State of Bolivia, 22% in Colombia and 3% in Ecuador. Thirdly, in the fourth quarter of 2020, women and men in Colombia received similar amounts from the emergency policies that sustained disposable income in the lower part of the income distribution. Combined with smaller reductions in labour market income than in 2019, this prevented women's disposable income up to the third quintile from falling, while for men this was only the case in the first quintile. This occurred in a context in which, according to Robles and Rossel (2021) in an analysis covering up to January 22, 2021, almost 80% of the transfers made in response to the COVID-19 crisis in the region had lasted three months or less. For this reason, the authors stressed the fact that the Solidarity Income emergency transfer implemented in Colombia had already been extended for 15 months, which largely explains the results presented here for both quarters.

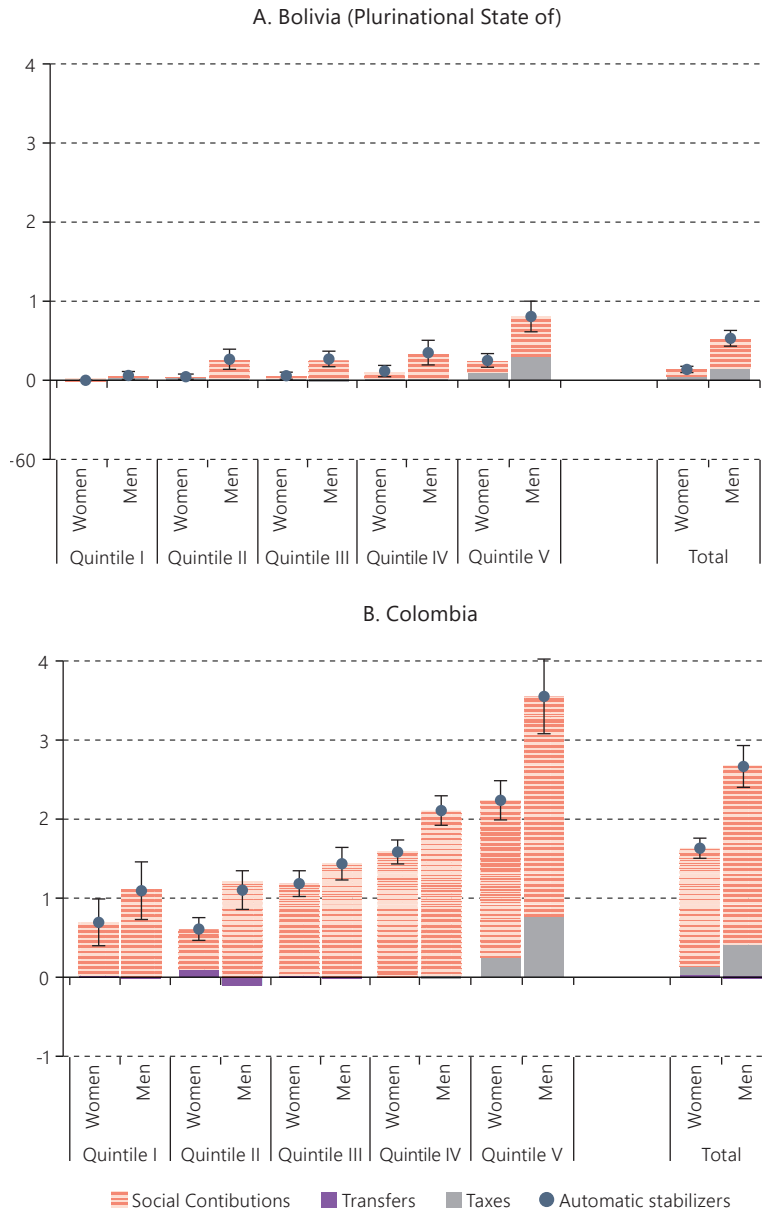
Figure 6, with an adjusted scale, reveals the limited role played by automatic stabilizers, as noted above. At the height of the pandemic, the automatic stabilizing effect was produced mainly by reductions in taxes and social contributions in the upper part of the income distribution.<sup>29</sup> As men are overrepresented in this part of the distribution, they received larger automatic reductions than women (for example, in the fifth quintile, these reductions represented 4% for men in Colombia, only slightly more than this in Ecuador, and less than 1% in the Plurinational State of Bolivia). In contrast, the main social assistance programmes in each country did not provide automatic stabilization for women and men in the lower part of the income distribution.<sup>30</sup> Eligibility for the main social assistance programmes in Colombia and Ecuador was based on composite indices that include information on housing and household characteristics, so these programmes do not depend directly on income to react automatically to shocks (Jara and others, 2024a), whereas in the Plurinational State of Bolivia they did not include means testing. For Colombia and Ecuador, Jara and others hypothesized that proxy means-testing methods could explain why these pre-pandemic programmes failed to provide automatic income stabilization.

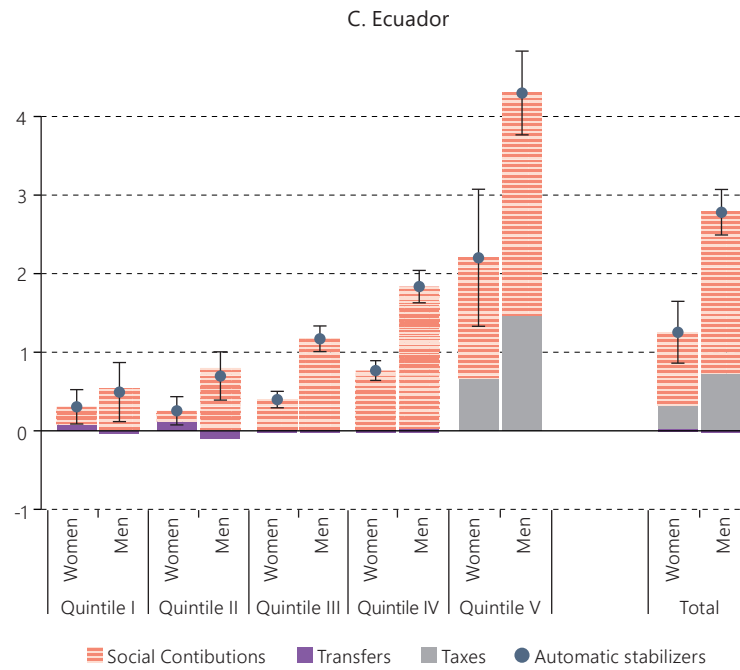
Lastly, no breakdown is presented of the emergency policies (and parametric modifications to existing policies) implemented during the pandemic, because nearly all of their (large) effect was provided by transfers. The exception was the minor effects of the lowering of social contribution rates and implementation of the solidarity tax in Colombia (which had effects, in opposite directions, averaging only about 1% in the case of men).

<sup>29</sup> The very small negative automatic transfer effects in the first quintiles for men in Ecuador reflect multifamily households in which there are unusual coincidences in the microdata. Firstly, there are a few people who meet the condition of son or daughter according to the rules of the Human Development Grant, but who (probably because of missing data) are not linked to a parent via identifiers, and there is more than one candidate person in the household who could take that place. In these cases, the EUROMOD software assumes the parent is the person whom it defines as the head of the household, based firstly on higher income and then on age. Secondly, there are individuals who, therefore, when income losses are simulated, no longer have these dependants and no longer receive the transfer, and someone else in the household takes over. In cases where this occurs between persons of different sex, it more often passes from men to women. In Colombia, the same happens with the Families in Action transfer, but since, for simplicity, it is programmed at the household level (rather than at the family level like the Human Development Grant), it occurs not only in cases of infants who are not linked to a parent in multifamily households, but also in all cases where in multifamily households one person ceases to be the head of the household in favour of another (for example, a grandmother who receives a transfer targeted to her granddaughter instead of her son who is a single parent and who was simulated as losing his job).

<sup>30</sup> This is in addition to the aforementioned and very limited automatic stabilization effect of unemployment insurance in Ecuador. Jara, Montesdeoca and Tasseva (2022) estimate this effect as equivalent on average to just 0.1% of household disposable income before the pandemic and focused mainly on the middle of the distribution.

**Figure 6**  
**Decomposition of effect of automatic stabilizers, women and men aged 17 years and older,**  
**by household quintile,<sup>a</sup> between 2019 and the second quarter of 2020**  
*(Percentage of male disposable income in 2019)*





Source: Prepared by the authors on the basis of household surveys, nowcasting and microsimulation models.

Note: 95% confidence intervals. Since the Great Integrated Household Survey does not include its sample variables, the household is considered as the primary sampling unit and the region as the stratum.

<sup>a</sup> Quintiles of household per capita disposable income (pre-COVID).

## V. Final remarks

Latin America and the Caribbean has a Regional Gender Agenda that has been consolidated over a period of nearly 50 years through commitments adopted by ECLAC member States at the sessions of the Regional Conference on Women in Latin America and the Caribbean. Governments have made innovative and specific undertakings to address the gender dimensions of fiscal policy and thus contribute to gender equality and ensuring women's rights and autonomy. In this framework, at the fourteenth session of the Regional Conference in January 2020 in Santiago, Chile, and just weeks before the onset of the COVID-19 pandemic, governments made a commitment to "implement gender-sensitive countercyclical policies, in order to mitigate the impact of economic crises and recessions on women's lives" (ECLAC, 2023d, paragraph 24). This intergovernmental agreement was reaffirmed in the Buenos Aires Commitment, approved at the fifteenth session of the Regional Conference in November 2022, which emphasizes the need to promote policies that dynamize the economy in key sectors for the sustainability of life, including that of the care economy (ECLAC, 2023a, paragraph 28).

In view of this mandate, this document has used the COVID-19 crisis as a case study of some of the gender impacts of fiscal policies. It analyses the impact that automatic and countercyclical fiscal policies, both personal taxes and social contributions, along with transfers targeted to households and their members, had on the incomes of women and men between 2019 and 2020 in Colombia, Ecuador and the Plurinational State of Bolivia.

In terms of results, this document showed, firstly, that even before the COVID-19 pandemic, women in all quintiles of household disposable income had lower average individual disposable incomes than men; and the component that contributed most to this inequality was labour income. Transfers were more important for lower-income sectors, at both the household and individual levels, so women received higher amounts on average. A microsimulation of personal taxes and social contributions showed that these elements represented a larger (negative) share of disposable income in the higher income quintiles and in the case of men. In short, the joint progressive impact of personal taxes and transfers also contributed to reducing the differences in disposable income between women and men.

Secondly, labour market incomes decreased sharply in all countries in the second quarter of 2020. As the reduction was greater in the case of men, there was a slight and temporary "levelling down"

of the gender inequality of labour market incomes, especially in Ecuador. In response to this, and as happened in 2019, tax and transfer systems in the second quarter of 2020 tended to bring women's disposable income closer that of men, even more than in 2019 in Colombia and the Plurinational State of Bolivia, but only marginally more in Ecuador. The greater impact of taxes and transfers resulted mainly from transfers at the lower end of the income distribution. These continued to be more important for lower-income sectors, at both the household and the individual levels, so women continued to receive larger amounts on average. At the same time, there was a reduction in the payment of taxes and social contributions for both women and men in the upper income quintiles of Colombia and Ecuador. The combined result of all of these elements (with the drop in labour income being compensated by taxes and transfers) was that disposable income declined in all countries, except at the lower end of the distribution in the Plurinational State of Bolivia. As the labour market staged a relative recovery in the fourth quarter of 2020, the exceptions became the majority in the quintiles of the Plurinational State of Bolivia; and in Colombia, they also became the majority in the first quintile for women and men and even slightly higher in the distribution in the case of the latter.

Thirdly, by constructing counterfactual income distributions that ignore the emergency policies that were actually implemented, the automatic stabilization effects provided by the pre-existing policies were separated from the emergency policies. In the first quarter of 2020, the emergency policies (almost exclusively transfers) underpinned disposable income at the lower end of the distribution. However, as noted above, only in the Plurinational State of Bolivia did they prevent disposable income from falling. In terms of gender, for example, in the first quintile, the transfers grew by more in absolute terms for women in Colombia, by similar amounts for women and men in the Plurinational State of Bolivia, and by more for men in Ecuador. After the relative recovery of the labour market in the fourth quarter of 2020, the maintenance of emergency policies in Colombia was also what made it possible to sustain disposable incomes in the lower part of the distribution, mainly among women. Automatic stabilizers played a minor role, concentrated in the upper part of the income distribution, corresponding mainly to reductions in taxes and social contributions received mostly by men. In contrast, the main social assistance programmes did not provide automatic stabilization.

In view of the foregoing, there is a clear need to strengthen the automatic stabilization function of transfers. Studies have shown that Latin American and Caribbean countries were slower to implement economic and social measures at the start of the pandemic than those in other regions of the world (Atuesta and Van Hemelryck, 2024). In countries with more developed social protection systems, unemployment insurance was implemented alongside health measures, thus acting as automatic stabilizers. In the region, strengthening the latter would entail a series of measures related to contributory and non-contributory social protection and to the social information systems and beneficiary registers that support them. Starting with contributory social protection, as in the rest of the region, the absence of automatic stabilizers in Colombia and the Plurinational State of Bolivia was due, in part, to the fact that they did not have unemployment insurance (ECLAC, 2022a), whereas coverage tended to be limited in countries that do have such instruments (Vegh and others, 2019). Owing to a lack of information, this paper did not simulate unemployment insurance in Ecuador because, according to Jara, Montesdeoca and Tasseva (2022), it would have had a very limited effect (and simulating it would involve a series of assumptions). In addition to strengthening unemployment insurance, it was found that in Chile and Ecuador, most of the recipients of unemployment insurance up to 2020 had been men (ECLAC, 2022a). This is probably related to the overrepresentation of women who are own-account workers and their lower rates of labour market participation, associated partly with the burden of unpaid work and caregiving. It is therefore important to persevere with efforts to encompass own-account workers in instruments of this type, and also to strengthen non-contributory social protection.

In this regard, the results presented here showed that non-contributory transfers can have positive effects in cushioning women's income losses. However, women sometimes access these resources not as individuals in their own right, but as operational beneficiaries. This reinforces their role as women-mothers and the main caregivers (Bidegain, Scuro and Vaca-Trigo, 2020). Owing to the weaknesses of the region's social protection systems that were revealed during the pandemic (ECLAC, 2022a), the challenge is to construct universal systems that include non-contributory instruments and, from a gender perspective, help close inequality gaps and consider the need to promote a fair social organization of care in their design and implementation. Non-contributory social protection is crucially important in countries that have segmented labour markets and gender segregation. Other measures that make it easier for women to enter the labour market, such as comprehensive care policies and systems, will make it possible to balance the components of contributory and non-contributory social protection as their entry progresses.

In relation to social information systems and recipient registries, Berner and Van Hemelryck (2020) noted that, although the countries carried out mass sweeps to register and identify as many households as possible during the pandemic, these efforts will be insufficient in the future because they were costly. Accordingly, thought should be given to designing universal target registers that allow for the entry of those who have traditionally been excluded from them, such as informal workers. These authors note that achieving broader coverage requires progress to be made in connecting the registers with other administrative databases or in making them interoperable. Among much other information, social information systems should have administrative data on personal incomes, to verify the eligibility of transfers and bank data to facilitate payment processes. The data in the systems should also be kept up to date, to facilitate the implementation of benefits that require rapid identification of the target population. The authors also recommend having information transfer channels in place to enable validation cross-checking, as usually occurs, for example, with tax records to verify income received.

As noted in this document, the main social assistance programmes did not provide automatic stabilization. For Colombia and Ecuador, Jara and others (2024a) hypothesized that proxy means-testing methods could explain this. In these countries, eligibility was not assessed relative to income but with respect to a composite welfare index based on housing and household data. According to Berner and Van Hemelryck (2020) several analyses call these methods into question, in particular because the composition of income is very dynamic. Thus, the recommendations made in the previous paragraph could also facilitate the inclusion of updated incomes in means testing, to enhance the automatic stabilization provided by the main social programmes. It is also crucial to consider individuals as the unit of analysis alongside households, and thus be able to take gender relations within households into account.

In terms of future lines of research, a first possibility relates to the aforementioned joint progressive and gender inequality-alleviating impact of personal taxes and transfers. It is important to bear in mind that the impact of the tax and transfer system, including indirect taxes (of non-progressive design), could generate a different result in terms of "consumable" income (that is, including indirect taxes and subsidies, as proposed by Lustig, 2023, for example). Future research could therefore include indirect taxes in its analysis. This would pose several methodological challenges, such as: including expenditure data from household budget surveys in income surveys (for example, via statistical matching) to simulate indirect taxes; considering the high rates of evasion of these taxes and informality in the region (Bachas, Gadenne, and Jensen, 2024); approximating expenditure at the individual level (as, for example, in Ambel, Tesfaye and Yonis, 2022); and, in the case of studying the counterfactual situation without these taxes, taking account of the impact of VAT exemptions on the production chain (Lustig, 2023).

A second avenue for future research would be to include the gender inequality dimension in the use of time. This would also entail including data from time-use surveys in income surveys, as done by Masterson and others (2022), via statistical matching.

Lastly, it is important to relate the recommendations presented here to the region's three development traps, as identified by ECLAC: low, volatile, exclusive and unsustainable economic growth; high inequality and low mobility and social cohesion; and weak institutional capacities and ineffective governance (Salazar-Xirinachs, 2023). Given the overlap between socioeconomic and gender inequality, progress in making tax systems more progressive in the region's countries is crucial. On the expenditure side, additional efforts are needed to consolidate universal social protection systems that, from a gender and rights-based approach, blend contributory and non-contributory instruments and help promote a fair organization of care. This has the potential to contribute to overcoming the traps of high inequality and low growth, and to cushion shocks in crisis situations. To this end, it is also necessary to strengthen institutional capacities to promote taxation that contributes to achieving gender equality and ensuring women's rights.

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## **Annex A1**

**Table A1.1**  
Average marginal effects on probability of having positive labour income in second quarter of 2020<sup>a</sup>

Variables	(1)	(2)	(3)
	Bolivia (Plurinational State of)	Colombia	Ecuador
Sex = 1, Male	0.12*** (0.01)	0.14*** (0.01)	0.13*** (0.01)
Age = 2, 21–30 years	0.24*** (0.01)	0.16*** (0.01)	0.19*** (0.02)
Age = 3, 31–40 years	0.41*** (0.01)	0.19*** (0.02)	0.26*** (0.02)
Age = 4, 41–50 years	0.42*** (0.02)	0.17*** (0.02)	0.25*** (0.02)
Age = 5, 51–60 years	0.37*** (0.02)	0.11*** (0.02)	0.18*** (0.02)
Age = 6, 60 years or older	0.07*** (0.02)	-0.04*** (0.02)	-0.02 (0.02)
Head of household = 1	0.22*** (0.01)	0.09*** (0.01)	0.19*** (0.01)
Education attained = 1, Primary	0.01 (0.02)	0.01 (0.02)	0.07*** (0.02)
Education attained = 2, Lower secondary school	0.02 (0.02)	0.03 (0.02)	
Education attained = 3, Upper secondary school	0.02* (0.01)	0.08*** (0.02)	0.09*** (0.02)
Education attained = 4, Post-secondary	0.05*** (0.01)		0.09*** (0.03)
Education attained = 5, Tertiary	0.02* (0.01)	0.19*** (0.02)	0.16*** (0.02)
Rurality = 1, Rural		0.30*** (0.01)	0.07*** (0.01)
Number of observations	24 312	48 008	26 692
Pseudo R-squared	0.174	0.175	0.128

Source: Prepared by the authors, on the basis of data from the Continuous Employment Survey, Great Integrated Household Survey and National Survey of Employment, Unemployment and Underemployment.

<sup>a</sup> Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. As the Great Integrated Household Survey does not include its sample variables, the household is considered as the primary sampling unit and the region as the stratum. The models also include the variable region and interactions between sex and age, rurality and region.

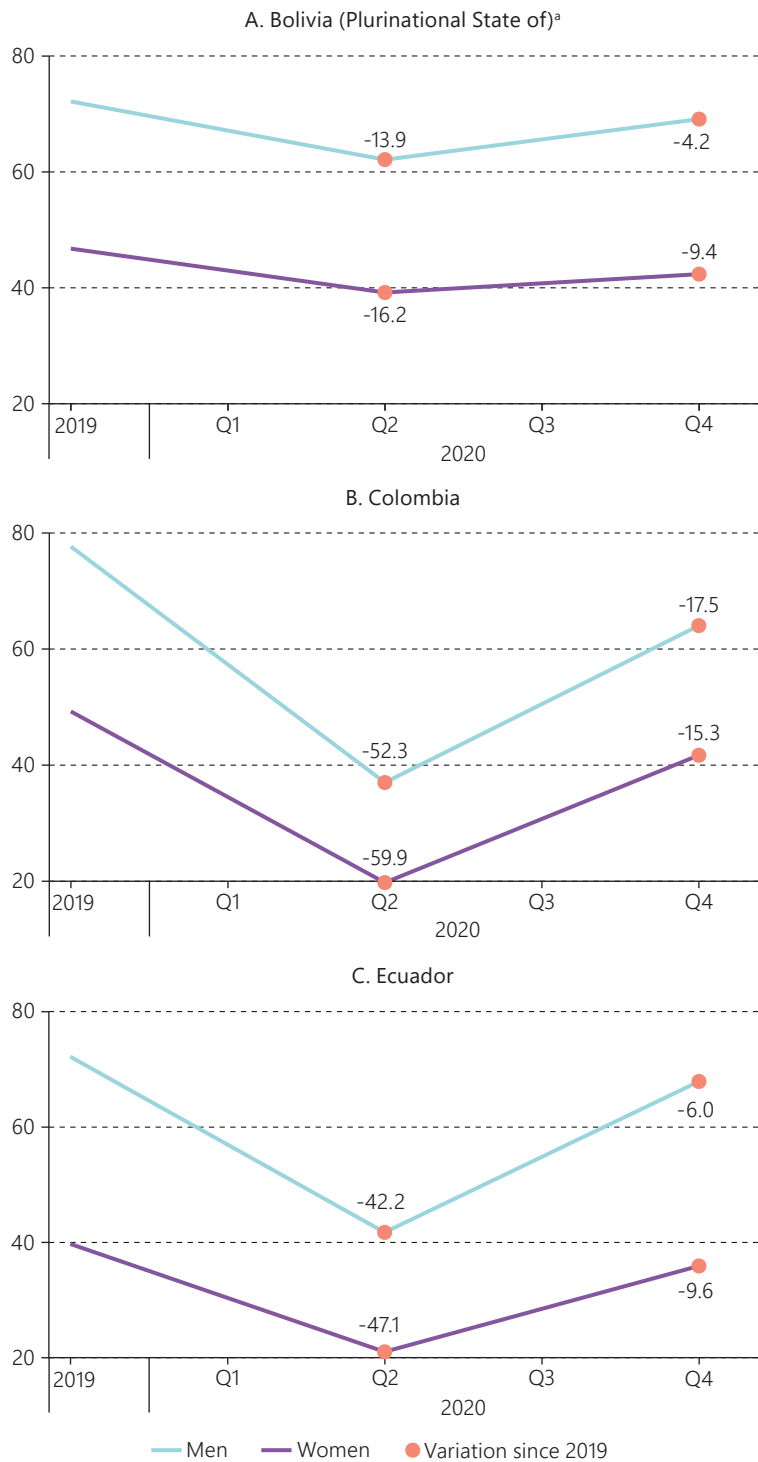
**Table A1.2**  
Average marginal effects on probability of having positive labour income in fourth quarter of 2020<sup>a</sup>

Variables	(1)	(2)	(3)
	Bolivia (Plurinational State of)	Colombia	Ecuador
Sex = 1, Male	0.15*** (0.01)	0.23*** (0.00)	0.23*** (0.01)
Age = 2, 21–30 years	0.22*** (0.01)	0.21*** (0.01)	0.24*** (0.02)
Age = 3, 31–40 years	0.37*** (0.01)	0.28*** (0.01)	0.35*** (0.02)
Age = 4, 41–50 years	0.39*** (0.02)	0.26*** (0.01)	0.34*** (0.02)
Age = 5, 51–60 years	0.32*** (0.02)	0.17*** (0.01)	0.26*** (0.02)
Age = 6, 60 years or older	0.03** (0.02)	-0.14*** (0.01)	-0.00 (0.02)
Head of household = 1	0.21*** (0.01)	0.15*** (0.00)	0.24*** (0.01)
Education attained = 1, Primary	0.00 (0.02)	0.06*** (0.01)	0.04 (0.02)
Education attained = 2, Lower secondary school	0.02 (0.01)	0.06*** (0.01)	
Education attained = 3, Upper secondary school	0.02* (0.01)	0.09*** (0.01)	0.05** (0.02)
Education attained = 4, Post-secondary	0.03*** (0.01)		0.13*** (0.04)
Education attained = 5, Tertiary	-0.01 (0.01)	0.10*** (0.01)	0.08*** (0.02)
Rurality = 1, Rural		0.00 (0.01)	-0.05*** (0.01)
Number of observations	29 450	135 101	21 661
Pseudo R-squared	0.177	0.166	0.207

Source: Prepared by the authors, on the basis of data from the Continuous Employment Survey, Great Integrated Household Survey and National Survey of Employment, Unemployment and Underemployment.

<sup>a</sup> Standard errors in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. As the Great Integrated Household Survey does not include its sample variables, the household is considered as the primary sampling unit and the region as the stratum. The models also include the variable region and interactions between sex and age, rurality and region.

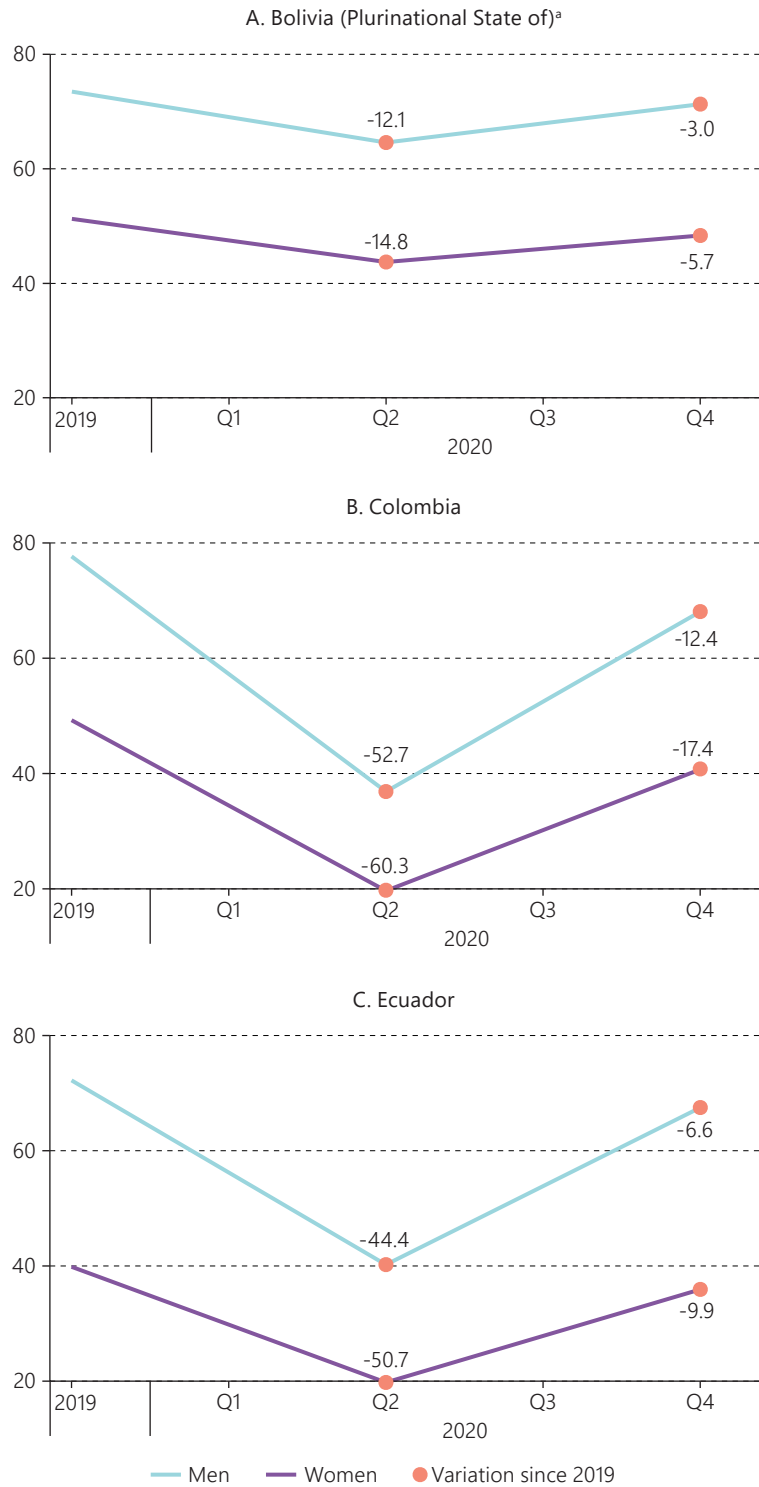
**Figure A1.1**  
**Nowcasting of rates of women and men aged 17 years and older earning a labour income in each quarter,**  
**2019–fourth quarter of 2020**  
*(Percentages)*



Source: Prepared by the authors, on the basis of data from the Household Survey for 2019; for 2020, data obtained via nowcasting applying 2020 versions from the Continuous Employment Survey, the Great Integrated Household Survey and the National Survey of Employment, Unemployment and Underemployment.

<sup>a</sup> In the case of the Plurinational State of Bolivia, only data from urban areas are included to make them comparable with those of figure A1.2.

**Figure A1.2**  
**Observed rates of women and men aged 17 years and older earning a labour income in each quarter, 2019–fourth quarter of 2020**  
*(Percentages)*



Source: Prepared by the authors, on the basis of data from the Continuous Employment Survey, Great Integrated Household Survey and National Survey of Employment, Unemployment and Underemployment.

<sup>a</sup> In the case of the Plurinational State of Bolivia in 2020, the Continuous Employment Survey only included urban data, so only urban data were selected in 2019.



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