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SPECIAL ISSUE ARTICLE

The Gendered Poverty Effects of the COVID-19 Pandemic in Colombia

Jose Cuesta[1] · **Julieth Pico**[1]

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Abstract

Everyone, across borders, race and gender, is affected by the global COVID-19 pandemic—but not equally. In this paper, we examine a burgeoning new literature discussing the employment effects of COVID-19. We explore the extent to which COVID-19 will exacerbate gendered employment disparities, income generation gaps, and, ultimately, poverty gaps, using a simple microsimulation methodology. We test our approach in Colombia, which has implemented an unparalleled number of mitigation measures and has reopened its economy earlier than regional neighbors. We find that COVID-19 increases the poverty headcount to a daunting degree (between 3.0 and 9.1 pp increases). Mitigation measures vary considerably in their individual impact (up to 0.9 pp poverty reduction). A fiscally neutral Universal Basic Income program would cause larger poverty reductions. Importantly, both men and women report similar poverty impacts from the pandemic and mitigation policies, reflecting the magnitude of the downturn, the design of interventions and our own poverty measure.

Keywords COVID-19 · Poverty · Gender · Microsimulations · Colombia

Résumé

La pandémie de COVID-19 affecte tout le monde, indépendemment des frontières, de la race et du sexe, mais pas de la même façon. Dans cet article, nous examinons une nouvelle littérature en plein essor qui traite des effets de la COVID-19 sur l'emploi. Nous analysons dans quelle mesure la COVID-19 va exacerber les disparités d'emploi entre les sexes, les écarts de revenus et, en fin de compte, les écarts de pauvreté, en

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✉ Jose Cuesta
jcuesta@worldbank.org

Julieth Pico
jpicomejia@worldbank.org

[1] World Bank, 1818 H Street NW, Washington, DC 20433, USA

utilisant une simple méthodologie de microsimulation. Nous testons notre approche en Colombie, qui a mis en œuvre un nombre inégalé de mesures d'atténuation et a relancé son économie plus tôt que ses voisins dans la sous-région. Nous constatons que la COVID-19 provoque une redoutable augmentation du nombre de personnes pauvres (entre 3,0 et 9,1 points d'augmentation). L'impact individuel des mesures d'atténuation varie considérablement (jusqu'à 0,9 point de réduction de la pauvreté). Un revenu universel de base correspondant au principe de neutralité fiscale entraînerait une réduction plus importante de la pauvreté. Surtout, hommes et femmes signalent des impacts identiques sur la pauvreté de la pandémie et des politiques d'atténuation, ce qui reflète l'ampleur du ralentissement, la conception des interventions et notre propre mesure de la pauvreté.

JEL Classifications I32 · I14 · H12

Introduction

As of mid-June 2020, the global death toll from COVID-19 had exceeded 369,000, with 6,000,000 confirmed cases (JHU 2020). This is the third largest pandemic in history, behind only the Spanish flu (1918–1919) and the Black Death (1331–1353), which killed 100 million and 75 million people respectively (Jordà et al. 2020). The estimated decline in global GDP growth in 2020 alone attributable to COVID-19, between 3.0 and 5.2%, is unparalleled (IMF 2020; World Bank 2020a, respectively). The pandemic is also expected to push between 71 to 100 million people into extreme poverty (World Bank 2020b).

But COVID-19 does not affect everyone equally. Cases increase starkly with age and underlying medical conditions (JHU 2020). Poor people are more likely to contract COVID-19, with positive testing rising from 35 to 62% moving from the richest to the poorest New York City neighborhoods (Schmitt-Grohe et al. 2020). Across 40 US states, the overall COVID-19 mortality rate for black Americans is 2.4 times higher than the rate for whites (APM Research Lab 2020). Vulnerability to COVID-19 varies according to prevailing inequalities across society and within households.

This article focuses on one such vulnerable population, women, and one of the strongest socioeconomic transmission channels of the pandemic, employment. It does so in a specific country, Colombia. Globally, women are more likely to work in informal and/or low-paid jobs, which are most prone to disruption during public health emergencies (ILO 2020a; Alon et al. 2020) and frequently lack legal and social protections. Furthermore, home-based work is more common among women than men, most notably in developing countries, and an increase of unpaid care-related work at home might negatively impact women especially (ILO 2020a). Closures of schools and daycare centers have also particularly affected working mothers (Alon et al. 2020). In previous downturns, male employment was usually more strongly affected. Women could then find additional jobs and/or increase their working hours to compensate, but this is not possible in this pandemic (Doepke and

Tertilt 2016; Coskun and Dalgic 2020). COVID-19 puts at risk decades of progress towards economic justice and rights for women (CARE 2020).

Our study aims to quantify the extent of gendered employment disparities in Colombia. This is an interesting country case because it showcases the merits and limitations of comprehensive and aggressive COVID-response policies in upper middle income countries harshly affected by the pandemic. Having formally joined the OECD in 2020, Colombia has benefitted from a decade of steady economic growth and poverty and inequality reduction. It displays perhaps the most rapid and firm lockdown in Latin America and the Caribbean region and is among the first regionally to begin reopening the economy. Colombia is also unrivalled regionally in terms of economic reactivation programs. However, COVID-19 initially widened gender inequalities (CPEM 2020). The unemployment rate for women increased to 18.4% between February and April 2020, well above the men's unemployment rate of 11.9% (DANE 2020). Calls to the national gender violence phoneline have more than doubled since lockdown began (CPEM 2020).

This article addresses two questions. One, what are the expected impacts of the COVID-19 lockdown and mitigation policies on poverty in Colombia? Two, to what extent has COVID-19 increased existing gendered poverty gaps in 2020? In section "Literature Review", we provide a concise literature review on the socioeconomic effects of COVID-19. Section "Methodology and Application to Colombia" presents the data and microsimulation methodology used, a method that arguably provides a novel contribution to how such multidisciplinary questions can be analyzed in practice. Section "Results for Colombia" presents the results of the analysis and discusses findings. Section "Conclusions" concludes.

Literature Review

Past pandemics have also had significant, albeit smaller, socioeconomic impacts. Ma et al. (2020) find real GDP fell by 2.6% on average across 210 countries during outbreaks of disease and remained 3.0% below pre-shock levels 5 years later. Barro et al. (2020), using a sample of 42 countries, report even larger GDP impacts for the Spanish flu. Furceri et al (2020) and De Haan and Sturm (2017) show that crises exacerbate inequality by depressing employment for those most vulnerable, such as the less skilled and young people. This increases the Gini coefficient, lifting the income shares of those in higher deciles and lowering the employment-to-population ratio for the less educated. Looking at 175 countries over 1961–2017, Furceri et al (2020) estimate increases to the pre-shock Gini of between 0.75 and 1.25% 5 years after the pandemic.

COVID-19 has already severely disrupted the labor supply and aggregate demand of most affected countries (Alfaro et al. 2020; Baker et al. 2020; Bartik et al. 2020; Fetzer et al. 2020; Carvalho et al. 2020). An estimated 1.25 billion workers, nearly 40% of the global workforce, face high risk of displacement from the pandemic (ILO 2020b). The decline in working hours globally is already equivalent to the loss of 195 million full-time jobs (ILO 2020b). In the US alone, 20 million jobs were reportedly lost by early April (Furceri et al 2020). The monthly impact on jobs is far

more severe than previous major downturns (Hoynes et al. 2012; Christiano et al. 2015; Coibion et al. 2020).

Yet these labor impacts from COVID-19 are uneven within and across countries (Adams-Prassl et al. 2020). Some 18% (US) and 15% (UK) of individuals in a sample of 4000 respondents[1] reported recently having lost their jobs due to the coronavirus outbreak in early April 2020, compared to only 5% in Germany (Adams-Prassl et al. 2020). Across countries, increased ability to work from home and having a permanent, salaried contract significantly reduced the probability of job loss (see also Dingel and Neiman 2020; Adams-Prassl et al. 2020). Actual and potential teleworking rates vary widely, from around a quarter of the workforce in Mexico, Turkey, Italy, Spain, France, Germany, Argentina, and Uruguay, rising to 34% in the US and over 40% in the UK and Sweden (Dingel and Neiman 2020; Boeri et al. 2020; Foschiatti and Gasparini 2020). This rate is around just 13% across 10 developing countries including Argentina. Chile, China, Ghana, Indonesia, Kenya, South Africa, among others (ILO forthcoming).

In the US and UK, women and workers without a college degree are up to 8% more likely to have already lost their jobs. In the US (UK), women can do 42% (41%) of their tasks from home, compared to 53% (46%) for men (Adams-Prassl et al. 2020). However, when controlling for occupation and percentage of tasks that can be done from home, the job loss gap by education disappears, but not for gender. Adams-Prassl et al. (2020) argue that among the population working from home, women spend significantly more time caring for children, an average of an hour per day. Neither gap (gender nor education) is found in Germany.

We found no other study using real-time data to analyze the gendered labor effects of COVID-19. Alon et al. (2020), Dingel and Neiman (2020), Mongey and Weinberg (2020), using pre-lockdown data, discuss the channels through which the current lockdown may affect workers differently. Alon et al. (2020) find that 28% of male workers but only 22% of female workers are employed in highly telecommutable occupations in the US. Boniol et al. (2019) highlight that women make up over 70% of the global health and social care workforce, jobs that increase their likelihood of contracting COVID-19 (CARE 2020). Women are disproportionally employed in the sectors hardest hit by the pandemic, including entertainment, retail, tourism, and smallholder farming, as well as in the informal economy and as migrant workers. Women entrepreneurs face greater adversity in rebuilding their livelihoods, with unfavorable conditions including reduced access to financial services. And gender-based violence is on the rise as women are quarantined with their abusers and households suffer financial stress (Capaldi et al. 2012).

In Colombia, unemployment rose 1.8 percent points (up to 12.6%) in the first week of lockdown alone (that is, March 25 to March 31), while 1.5 million jobs were lost (DANE 2020). Lamprea-Barragan et al. (2020) estimate daily job losses of between 21,000 and 35,000. They conclude that about 10.8% of workers typically worked from home before the pandemic and a total of 37.7% of workers (8.4

[1] Surveys were conducted in the US, UK and Germany, of 4,000 respondents each, two waves for the US and UK, between March 24 and April 14, 2020, and one for Germany, April 9–12, 2020.

million out of 22.3 million) are continuing or could continue productive work without infringing social distancing. The results are similar to those found by Dingel and Neiman (2020) for the United States and for Colombia by Jaramillo et al. (2020). Lamprea-Barragan et al (2020) show that 43.7% of the female population can work from home, compared with 33.5% among men. This is due to the higher proportion of women already working from home. Conversely, men are more likely to start working remotely than women (59.6 vs. 39.4%) during the pandemic.

Methodology and Application to Colombia

We develop an ex-ante simulation exercise using a static microsimulation model to predict poverty in scenarios with and without COVID-19 and provide a cost–benefit analysis of alternative policy interventions. Poverty is measured at the individual level, after an intrahousehold allocation model assigns household incomes to all individuals in a given household (see below). We follow the partial equilibrium analysis developed by van de Walle and Nead (1995) and Lustig (2018) which captures the short-run effects of policies before any potential behavioral response. As a partial equilibrium analysis, we first simulate changes in labor supply attributed to COVID-19 and then assume that labor demand adjusts accordingly. This partial analysis ignores other general equilibrium considerations such as adjustment in prices, financial balances or external trade, to mention some. We still consider second-round effects accruing from social and economic reactivation programs. Mechanically, we use microdata from a random-sample income survey to identify which workers will be economically affected by the lockdown, following a sequential four-step procedure. This sequential procedure ensures that economically affected workers by one criterion are not inconsistently defined as economically unaffected by another criterion. Economically affected workers should not be confused with epidemiologically affected individuals.

In the *first step* we identify the economic sectors necessary to fight the virus: utilities, public administration and defense, human health and social work, and extraterritorial organizations (such as embassies). In the *second step*, we define all workers in essential services as economically unaffected by the pandemic. In Colombia, these services are defined by the Government, consisting of 158 sectors outlined in Decree 457. Sectors we categorize as essential include those related to food production and distribution, the sale of medicines, the production and distribution of gasoline, and news agencies. In the *third step*, we look at the job performed by the worker. If the task can safely be done from home or elsewhere, the worker is categorized as occupationally unaffected. In Colombia, we identify 29 tasks out of a total of 83 that are compatible with lockdown, including teachers and white-collar professionals. Finally, the *fourth step* determines exposure to the pandemic: if the person works on the street, any open space, or in a factory with more than 50 people, even in a non-affected sector, she is classified as economically affected (Fig. 1).

Once we identify workers economically affected by COVID-19, we estimate that their pre-lockdown income will be substantively reduced by 50%. This captures an average of different possible earning losses, including pay cuts, furloughs, and

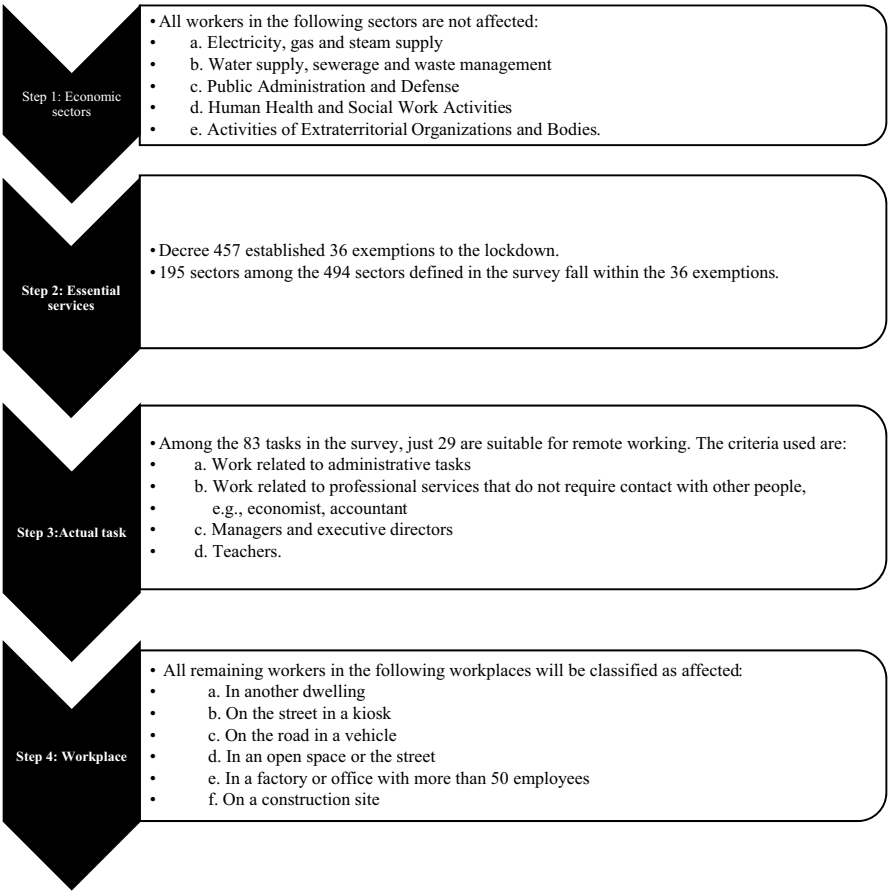


Fig. 1 Steps to identify affected workers and their application to Colombia. Source: Authors using the microdata from *Gran Encuesta Integrada de Hogares,* GEIH, 2018. Note: Information on labor incomes, sector and employment status is collected for individuals age over 10 years of age in rural areas and over 12 years of age in urban areas, coverage of social assistance is collected for all individuals regardless of age

possible informal or side activities during lockdown (call center work, manufacturing/sale of face masks, for example). The pandemic is assumed to last three months, followed by an immediate recovery of pre-lockdown employment and income levels. This is the baseline scenario.

Next, we consider all government measures to mitigate the lockdown's economic and social impact (see description below in the case of Colombia). The final steps in estimating the poverty impact are to generate the distribution of income losses across households, generate a distribution of final household incomes with COVID-19, and compare that income distribution with a no-pandemic counterfactual. The analysis also provides profiles of the newly poor, including their gender.

To do this, we construct distributions of disposable incomes, $\Phi\ (Y)$, for the counterfactual and our simulated scenarios where the lockdown takes place. This allows us to estimate poverty indicators from these distributions, thus assessing the impact of the pandemic, the loss of labor income and the income transfers (or equivalent income transfer) from mitigation and economic recovery interventions. Specifically, our baseline disposable income distribution is defined as:

$$\Phi(Y)_0 = \Sigma_h \theta_h \Sigma_{i,j} (L + P + N + S + H)_{i,j} \tag{1}$$

where $\Phi(Y)_0$ describes the baseline distribution of incomes across Colombian households without the pandemic.[2] The income of household h is the sum of all income sources that each j member provides to the household—labor, L (which includes all sources, from wages and salaries, in-kind payments, self-employed earnings and self-consumption, that is, all market and nonmarket generated incomes); pension income, P; and non-labor market incomes, N (such as remittances and private transfers); and social transfers if received, in cash or in kind, S; finally, we include H, the rent imputation for those households that own their dwelling. Importantly, S, social transfers, during the counterfactual of no-COVID-19, does *not* include any transfer that is expanded or created to mitigate COVID-19.

Furthermore, θ defines the allocation rule within each household h that aggregates all incomes generated by its members. Conceptually, this allocation rule is a vector that transforms the aggregated income generated by household members into individual income allocations to each household member. We follow the widely-used unitary rule (due to the lack of a rigorous alternative; see Browning et al. 2014). Under this cooperative intrahousehold allocation model, all income sources are shared among members according to their needs (on a per capita basis or adjusted by equivalence scales). This is a convenient assumption but not necessarily realistic (Haddad et al. 1997; Brown et al. 2018) and as such our model may somewhat underestimate the pandemic's effects on poverty. In practice, our simulations follow a per capita unitary rule: total household income is divided by the number of members of that household and its per capita value assigned to each member.

When the lockdown is declared, all affected workers see their labor income reduced. The microsimulation exercise considers the four sequential criteria described in Fig. 1 to determine whether an individual's labor condition is impacted. Based on that classification we generate simulated distributions of disposable incomes where the labor income for occupationally affected workers is reduced (to the baseline 50% or any other proportion one might want to simulate, L'), and social transfers and/or economic recovery benefits increase as the result of mitigation interventions. In other words, in simulated scenarios with COVID-19, S' includes all social transfers whose coverage or benefits have been extended and any new transfer created to mitigate the economic effects of COVID-19.

$$\Phi\,(Y)_{sim1} = \Sigma_h \theta_h \Sigma_{i,j} \left(L' + P + N + S' + H \right)_{i,j} \tag{2}$$

[2] The subscript "i" captures each source of income for the household (that is, labor, pension, nonlabor, social transfers and rent incomes); "h" refers to each household in the distribution; and "j" to each household member in a given household.

In the case of Colombia, we simulate the consequences of increasing the payments of existing social programs, as well as the impact of new programs. Among social programs, these include:

(a) Increased payments for social programs: two additional payments of COP 80,000 (USD 21.35)[3] each for current beneficiaries of the Colombia Mayor program; two additional payments averaging COP 145,000 (USD 38.70) each per family in the Más Familias en Acción program; and two additional payments of COP 365,000 (USD 97.43) each per young person in the Jóvenes en Acción program.
(b) VAT refund to 1,000,000 Colombian Families: equivalent to a bi-monthly transfer of COP 75,000 (USD 20.00), starting in April 2020. Beneficiaries are households currently receiving the above social transfers with the lowest scores on the means-tested SISBEN IV methodology and located in the poorest municipalities according to the Multidimensional Poverty Index.
(c) Solidarity income: Two payments[4] of COP 160,000 (USD 42.71) each to all households that are considered poor, and households considered vulnerable according to the SISBEN IV classification, which are not currently part of any social program.
(d) Early childhood feeding program: All children who attended a Colombian Early Childhood Institution (ICBF) community center before the pandemic receive two food baskets during lockdown, whose average value is COP 225,759 (USD 60.26). The benefit accounted for in this exercise is the difference between the value of these food baskets and the value of the food children would have benefited from in the absence of the lockdown.
(e) Delivering food baskets to the most vulnerable population: The government provides food baskets for 178,127 older adults who do not receive any institutional support. The cost of these baskets averages COP 150,000 (USD 40.04) including transport.

The following measures are designed to foster economic recovery, strengthen the ability of firms to avoid layoffs, and provide a line of liquidity to pay their salaries, suppliers, rents and so forth. However, they only benefit formal workers and businesses.

(f) Payroll subsidy: A government transfer made directly to employers for three months, equivalent to an average of COP 351,121 (USD 93.73) per employee per month. Only formal employers with three or more employees are eligible.

[3] We use the nominal conversion rate as of 3,746 Colombian pesos per dollar (exchange rate of June 11, 2020).

[4] At the time of writing, the Government of Colombia is considering a third payment of COP 160,000, with an expected poverty reduction ranging from 0.2 to 0.4 pp. Additionally, the government considered including all workers currently under conditions of unpaid leave or contract suspension. However, we could not include this payment into the simulations as we could not identify those workers using the GEIH household survey.

(g) Credit line: The government acts as guarantor of up to 80% of credit granted to local enterprises. The sum of all the guarantees in the program will not exceed COP 400,000 million pesos (USD 106.78 million) for loans to SMEs and COP 600,000 million (USD 160.17 million) for large companies.
(h) Bonus subsidy: a subsidy to the normal salary bonus (equivalent to half a monthly salary) that all workers receive in June. The government will pay half of this holiday bonus to all formal employees earning less than COP 1,000,000 pesos (USD 266.95) per month.
(i) Suspension of social security contributions: monthly contributions by employees (4% of labor income) and the self-employed (6.4%) into retirement funds are suspended for three months.

The proposed microsimulation exercise allows for the estimation of the impact of COVID-19 (against a counterfactual of no pandemic) and for the specific effect of mitigation policies. In addition, we conduct robustness tests through alternative scenarios related to a gradual recovery (of 3 months), the impact on incomes, and the reopening of the economy before 3 months have passed. In the case of a 3-month gradual recovery (after the 3 months of lockdown), the simulation randomly identifies a third of occupationally impacted workers each month and assigns them their monthly earning levels prior to the pandemic. These alternative scenarios allow us to provide a range of estimated impacts within the large uncertainties associated with COVID-19 on poverty estimates (see Table 1).

We use the *Gran Encuesta Integrada de Hogares* (GEIH) produced by the national statistical office, the *Departamento Administrativo Nacional Estadístico* (DANE). This detailed household income survey microdata is collected monthly and the latest available with corrected incomes is the 2018 wave. This contains 231,128 households, a random sample that is representative nationally, on an urban–rural basis, and for 24 departments and 13 capital cities (DANE 2018). This is the official data used to compute poverty and labor income indicators such as unemployment rates. GEIH collects information on labor incomes, sector and employment status for individuals over 10 years of age in rural areas and over 12 years of age in urban areas, while coverage of social assistance (another critical variable in our simulations), information is collected for all individuals regardless of age.

Results for Colombia

Impacts of COVID-19 on Employment

Out of the 22.44 million workers employed in Colombia pre-COVID-19, some 32% or 7.35 million were occupied in sectors or services considered essential during

Table 1 Simulated scenarios

	Recovery	
	Immediate	Gradual
Labor income loss		
50%	Baseline: Affected workers will see their labor income reduced to 50% compared to their pre-COVID income for 3 months	A third of affected workers will see their income reduced to 50% compared to their pre-COVID labor income for three months, another third will experience the reduction for four months, and for the remaining three, five months
100%	Affected workers will see their labor income reduced to 0 for 3 months	A third of affected workers will see their labor income reduced to 0 for 3 months, another third for 4 months, and for the remaining three, five months

the pandemic or worked on jobs considered unaffected by the pandemic (because of their function or because the workplace facilitated teleworking, working in open spaces, or with sufficient protective measures). This means that 15.09 million workers are occupied in sectors disrupted by the lockdown, 9.09 million of them male and 6.0 million female. The share of impacted male workers (69%) is larger than the share for women (64%). This contrasts with higher pre-COVID-19 unemployment and inactivity rates among women.[5] See Table 2.

66.4% of all female workers in affected sectors were distributed among non-tradable sectors (such as utilities, commerce and administration), compared with 59% in the case of men. Table 12 in Annex disaggregates workers in affected sectors by gender and formality status. It shows that 65% of affected female workers are informal (3.90 million). Table 13 in Annex show that these women disproportionally work alone or in microenterprises with fewer than 10 workers (94% of informal female workers) and earn about 22% of the average salary of women in large formal enterprises (100 workers or more). 5.61 million or 61% of all affected male workers are informal, and only 17% work in microenterprises (earning on average a third of the male worker in large formal enterprises).

Another way to gauge the pandemic's impact is to look at its effects by socioeconomic class. Figure 2 shows the distribution of workers in affected and nonaffected sectors, by gender, across class, namely, the extremely poor (with monthly household per capita incomes below the national extreme poverty line of COP 117,805 (USD 31.44); moderately poor (below the total poverty line of COP 257,433, USD 68.70); the vulnerable (between COP 257,444 and 609,029, USD 162,54); the middle class (between COP 609,030 and 3,045,174 COP, USD 812.70); and the upper

[5] The pre-COVID-19 women's unemployment rate was 12.7% and 7.4% for men. 46.2% of working-age women were inactive, compared with 25.4% for men. Authors' estimates from GEIH 2018.

Table 2 Economically affected workers per economic sector, by gender, Colombia

Economic sector	Affected workers		Non-affected workers		Total
	Male	Female	Male	Female	
Agriculture, fishing, and forestry	1,515,490	418,481	1,492,411	285,387	3,711,769
Mining and quarrying	38,775	8,531	135,744	25,013	208,065
Manufacturing	1,223,173	823,473	254,046	304,588	2,605,281
Electricity, gas and steam supply	0	0	54,258	16,534	70,793
Water supply; sewerage and waste management	0	0	84,600	29,052	113,653
Construction	1,396,354	76,815	15,552	12,598	1,501,320
Wholesale and retail trade; repair of motor vehicles and motorcycles	1,633,661	1,124,961	640,960	855,927	4,255,509
Transportation and Storage	1,308,774	107,038	95,360	24,765	1,535,937
Accommodation and food service activities	437,939	893,811	72,063	168,700	1,572,514
Information and communication	124,125	74,550	66,306	80,575	345,557
Finance and insurance activities	111,749	140,940	19,775	30,328	302,793
Real estate activities	82,330	36,678	126,365	51,691	297,064
Professional, scientific and technical activities	112,543	83,101	202,582	161,283	559,509
Administrative and support service activities	236,434	497,013	45,639	44,022	823,109
Public Administration and defense	0	0	396,426	284,844	681,271
Education	301,439	425,248	50,092	151,307	928,087
Human health and social work activities	0	0	198,728	724,575	923,304
Arts, entertainment and recreation	145,007	112,298	42,303	30,972	330,581
Other service activities	386,117	548,048	29,942	36,854	1,000,962
Activities of households as employers	33,824	629,573	5,451	3,223	672,072
Activities of extraterritorial organizations and bodies	0	0	3,088	1,898	4,987
Total	9,087,733	6,000,557	4,031,700	3,324,146	22,444,136

Source Authors using GEIH 2018

class (above COP 3,045,175 COP). Some 61.3, 69.2, 68.2, 67 and 56.7% of workers in each of the classes are affected, respectively. There are very similar percentages across both sexes and across class. In absolute numbers, the largest group of women in affected sectors belongs to the middle class (almost 1.5 million), closely followed by vulnerable women (over 1.2 million). Some 482,000 women occupied in affected sectors are extremely poor, while some 150,000 belong to the upper class (see Fig. 2).

In the baseline scenario, about 3 million women also see their socioeconomic class downgrade following the pandemic, roughly half in a transition from the vulnerable to poor classes and the other half from the middle class to vulnerable class.

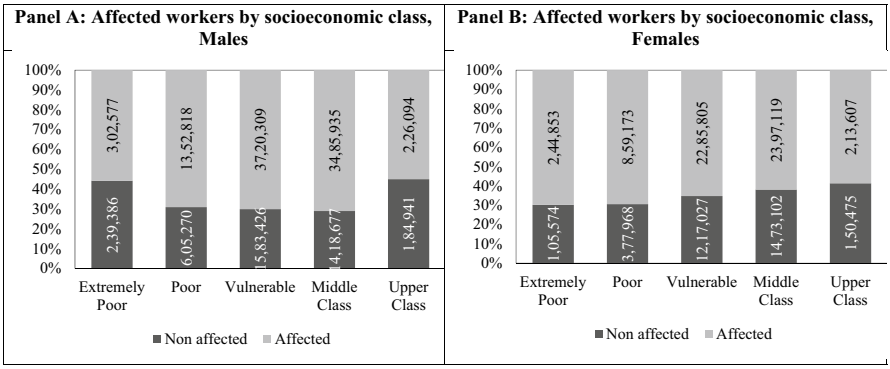


Fig. 2 Workers in sectors affected by COVID-19, by socioeconomic class and gender, Colombia

Similarly, over 3 million occupied men before COVID-19 see their socioeconomic status drop. See Table 3.

Impacts of COVID-19 on Poverty

The impact of COVID-19 without any mitigation measures ranges between increases of 3.0 to 9.1 percentage points (pp) in headcount poverty rates. This means that between 1.5 to 4.4 million additional people become poor as a result of COVID-19. The baseline scenario—of a three-month lockdown; 50% drop in labor incomes among impacted workers, immediate recovery after COVID-19, and no mitigation policies—reports increases in extreme poverty of 0.9 pp, and of 3.0 pp in total poverty (see Table 4 below). Allowing for a larger income loss of 100% of pre-COVID-19 labor incomes will increase the extreme and total poverty headcount by 2.1 pp and 6.4 pp respectively. Allowing for a gradual recovery of three months will increase the extreme and total poverty headcount by 1.3 and 4.1 pp respectively, assuming a 50% income loss. This rises to an increase of 3.5 and 9.1 pp in the extreme and total poverty headcount respectively if the income loss reaches 100%. See Table 4. Table 14 in Annex shows that the aggregated poverty reduction effects are larger in urban areas than in rural areas, this being true for women and men across all simulated scenarios.

There are no sizeable differences in the impacts of COVID-19 between men and women. For both women and men, we observe an increase in total poverty of 3.0 pp on the baseline and 4.1 pp in the gradual recovery case (see Table 5 below). This leads to higher poverty headcount rates for women than men after factoring in COVID-19 impacts. However, this small difference (disaggregated by sex) reflects that: (i) poverty is measured at the household level and (ii) the ratio of males to females is roughly 50/50 in all households (Munoz et al. 2020).

In the baseline scenario, some 1 pp more formal female workers will become poor with respect to the counterfactual of no COVID-19. However, this effect is 3.08 pp among informal female workers. This disparity is not changed when assuming a gradual recovery. COVID-19 increases extreme poverty between 0.8 and

Table 3 Socioeconomic class transitions due to COVID-19 by gender, Colombia

Panel A: Socioeconomic class transition due to COVID-19, Males				
	Simulation (baseline scenario)			
	Poor	Vulnerable	Middle class	Upper class
Pre-COVID				
Poor	6,297,947	0	0	0
Vulnerable	720,854	8,836,168	0	0
Middle class	1,878	661,248	6,786,427	0
Upper Class	0	0	50,374	521,196
Panel B: Socioeconomic class transition due to COVID-19, Females				
	Simulation (baseline scenario)			
	Poor	Vulnerable	Middle class	Upper class
Pre-COVID				
Poor	6,774,645	0	0	0
Vulnerable	734,260	8,963,520	0	0
Middle class	224	649,027	6,802,223	0
Upper class	0	0	49,752	540,806

Source Authors' simulations using GEIH 2018

Note Extreme poverty defined as monthly household per capita incomes below the national extreme poverty line of COP 117,805 (USD 31.44); moderately poor (below the total poverty line of COP 257,433, USD 68.70); the vulnerable (between COP 257,444 and 609,029, USD 162,54); the middle class (between COP 609,030 and COP 3,045, 174, USD 812.70); and the upper class (above COP 3,045,175)

1.2 pp, depending on the length of recovery (See Table 6). These effects are only slightly lower than for informal and formal male workers (see Table 15 in Annex).

About 50.4% of the newly poor are women (Table 7). The newly poor are mostly individuals from vulnerable households (prior to COVID-19) that cannot continue to work and earn an income. The profile of the newly poor also includes over six years of education; 80% are informal workers and most belong to urban households with more than four members. About two thirds have less than secondary education. Three quarters are informal workers and over 40% used to work in agriculture, manufacturing and retail. A third are concentrated in Bogotá, Antioquia and Valle del Cauca.

The Poverty Effects of Mitigation Policies

Mitigation policies are expected to substantively reverse initial poverty increases. All measures combined reduce the total poverty headcount by 2.16 pp with respect to the baseline of a 3-month lockdown, immediate recovery and 50% income loss per impacted worker (See Table 8). The impact of each measure varies. Más Familias en Acción and Solidarity Income reduce poverty by between 0.3 and 0.8 pp each.

Table 4 The impacts of COVID-19 on extreme and total poverty (at baseline and in scenarios involving no policies), Colombia

	No COVID-19 counterfactual	Baseline scenario with COVID	Larger income loss impact	Gradual recovery	
		50% income loss; immediate recovery	100% income loss; immediate recovery	50% income loss	100% income loss
Extreme poverty headcount rate	7.2	8.1	9.3	8.5	10.7
Impact on extreme poverty headcount rate		+0.9	+2.1	+1.3	+3.5
Number of new extreme poor	3,508,285*	415,166	1,001,457	602,100	1,656,607
Total poverty headcount rate	27.0	30.0	33.4	31.1	36.1
Impact on total poverty headcount rate		+3.0	+6.4	+4.1	+9.1
Number of new total poor	13,072,592*	1,457,215	3,105,649	1,981,653	4,428,811

Source Authors' simulations using GEIH 2018

Note (*) the pre-COVID-19 number of extreme and total poor is assumed to remain constant through 2020

Extreme poverty headcount is defined as the percentage of people with per capita income below the national extreme poverty line of COP 117,805 (USD 31.44); and total poverty as below the total poverty line of COP 257,433 (USD 68.70)

Table 5 Gender impacts of COVID-19 on poverty, Colombia

	No COVID-19 counterfactual		Baseline: immediate recovery (50% income loss)		Gradual recovery (50% income loss)	
	Female	Male	Female	Male	Female	Male
Extreme poverty headcount rate	7.5	7.0	8.4	7.8	8.8	8.2
Impact on extreme poverty headcount rate			+0.9	+0.8	+1.3	+1.2
Number of new extreme poor	1,840,557*	1,667,728*	211,634	203,532	303,319	294,144
Total poverty headcount rate	27.6	26.4	30.6	29.4	31.7	30.5
Impact on total poverty headcount rate			+3.0	+3.0	+4.1	+4.1
Number of new total poor	6,774,646*	6,297,947*	734,484	722,732	1,003,075	985,737

Source Authors' simulations using GEIH 2018

Note (*) the pre-COVID-19 number of extreme and total poor is assumed to remain constant through 2020

Extreme poverty headcount is defined as the percentage of people with per capita income below the national extreme poverty line of COP 117,805 (USD 31.44); and total poverty as below the total poverty line of COP 257,433 (USD 68.70)

Table 6 Impacts of COVID-19 on poverty on females, by formality, Colombia

	No COVID-19 counterfactual		Baseline: Immediate recovery (50% income loss)		Gradual recovery (50% income loss)	
	Female		Female		Female	
	Formal	Informal	Formal	Informal	Formal	Informal
Extreme poverty headcount rate	0.21	6.02	0.25	6.84	0.26	7.24
Impact on extreme poverty headcount rate			+0.04	+0.82	+0.05	+1.22
Number of new extreme poor	7,609*	343,154*	1,444	46,945	1,903	69,308
Total poverty headcount rate	2.52	26.26	3.51	29.33	3.91	30.59
Impact on total poverty headcount rate			+0.99	+3.08	+1.39	+4.34
Number of new total poor	91,471*	1,496,583*	35,787	175,365	50,404	247,284

Source Authors' simulations using GEIH 2018

Note (*) the pre-COVID-19 number of extreme and total poor is assumed to remain constant through 2020

A worker is considered informal if (s)he does not contribute to a pension fund. A worker is considered formal if (s)he contributes to a pension fund

Extreme poverty headcount is defined as the percentage of people with per capita income below the national extreme poverty line of COP 117,805 (USD 31.44); and total poverty as below the total poverty line of COP 257,433 (USD 68.70)

Table 7 Socioeconomic characteristics of the newly poor in Colombia

	Characteristics of the newly poor (After COVID)
Individual characteristics	
Age (years)	26.2
Female (%)	50.4
Years of education	6.4
Household head characteristics	
Age (years)	43.8
Female household head (%)	29.6
Years of education	7.2
Household characteristics	
Household size	4.1
Living in urban areas (%)	81.6
Dependency ratio (%)	61.4
Education, individuals (%)	
Non-educated	7.36
Education level: Basic primary	37.31
Education level: basic secondary	23.74
Education level: middle school	23.26
Education level: higher education	8.31
Labor market, individuals (%)	
Formal	21.27
Informal	78.73
Top three employment sector pre-COVID (%)	
Agriculture, Fishing, and Forestry	15.1
Manufacturing	12.2
Wholesale and retail trade	20.0
Top three departments (%)	
Bogotá	13.32
Antioquia	12.53
Valle del Cauca	8.89

Source Authors' simulations using GEIH 2018

Food baskets and ICBF programs have a less marked impact, mostly as a result of their limited duration and the size of the compensation. The overall impact of the compensation package remains 2.16 pp when the income loss is 100% with immediate recovery; 2.23 pp when the recovery is assumed to be gradual with income loses at 50%; and 2.20 pp with gradual recovery and 100% income loss.

Figure 3 describes both the total effect and the contribution of each social mitigation effect to poverty reduction. It shows that the Solidarity Income payments remain the largest contributors to poverty reduction among women, while food baskets and

cash transfers are the smallest. These results hold for extreme poverty as well (see Table 16 in Annex).

Figure 4 reports the total effects of the economic recovery measures; an overall poverty reduction of 0.86 points, comprised of 0.04 points from credit lines and guarantees, 0.65 points from payroll subsidies, 0.06 points from bonus subsidies and 0.11 from the suspension of retirement contributions. These transfers contribute to poverty reduction among women in virtually the same magnitude as for men.

We assess the efficiency of all mitigation interventions based on their cost effectiveness. We estimate first the fiscal cost needed for each intervention to deliver a 1 pp reduction in poverty (equivalent to 483,905 people). Then, we report the number of women lifted of out poverty during COVID-19 that can be traced directly to each intervention in a best- and worst-case scenario (based on length of recovery and impact on earnings, see Table 9). In the best case, Solidary Income and food baskets require the least fiscal resources (COP 1.2 billion or USD 0.32 million each) to bring the poverty headcount down by 1 pp. The VAT refund and the Early Childhood Feeding Program are similarly efficient, requiring less than COP 2 billion or USD 0.53 million to reduce poverty by 1 pp. The three current cash transfer programs, Más Familias en Acción, Adulto Mayor and Jóvenes en Acción, require an expansion of COP 2 billion or more each to deliver a 1 pp poverty reduction.

All social interventions require fewer (additional) resources than economic recovery programs to reach a 1 pp poverty reduction. In fact, the most costly interventions (to reduce poverty by 1 pp) are the credit lines and suspension of social security contributions. At around COP 13 billion or USD 3.47 million each, in the best case scenario, they are close to ten times more expensive than the most effective interventions in achieving a 1 pp poverty reduction. This is explained by their large cost and the fact that they only benefit formal workers. Payroll subsidies are the most costly program of all in fiscal terms economic and social measures considered. In the simulations considered, payroll subsidies are transferred to all firms regardless of whether they have lost revenue, as per Decree 457. By reaching the largest number of beneficiaries possible, their impact on poverty reduction is lowered.[6]

The intervention that brings the most women out of poverty is the payroll subsidy, followed by Solidarity Income, each of which bring 150,000 or more women out of poverty (see Table 9). By contrast, the Jóvenes en Acción and food basket interventions only bring fewer than 5000 women out of poverty each.

Gradual Reopening

Decree 636 of May 6, 2020 detailed the sectors allowed to reopen first because they contribute a large share to GDP and territories allowed to reopen first based on their lower numbers of COVID-19 cases. Municipal mayors within selected departments

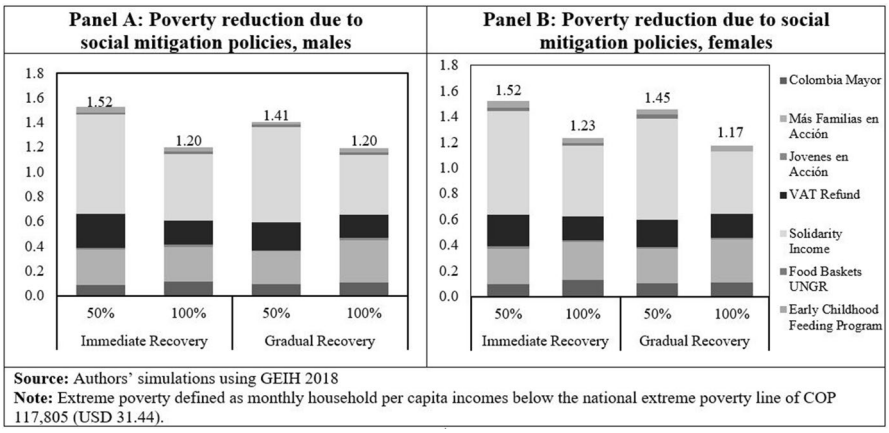
[6] We simulate a payroll subsidy that replaces a substantive share of payrolls (40%) of a large population of beneficiaries (formal workers).

Table 8 The poverty reduction effects of COVID-19 compensation policies in Colombia

	No COVID-19 counterfactual	Baseline: immediate recovery and 50% income loss	Immediate recovery and 100% income loss	Gradual recovery and 50% income loss	Gradual recovery and 100% income loss
Extreme poverty headcount rate	7.2	6.8	7.7	7.1	8.9
Reduction in extreme poverty headcount rate		− 1.35	− 1.62	− 1.43	− 1.86
Number of people exiting extreme poverty		650,907	783,116	695,706	900,128
Total poverty rate	27.0	27.9	31.3	28.9	34.0
Impact on total poverty headcount rate		− 2.16	− 2.16	− 2.23	− 2.20
Number of people exiting total poverty		1,042,557	1,044,747	1,080,540	1,061,428

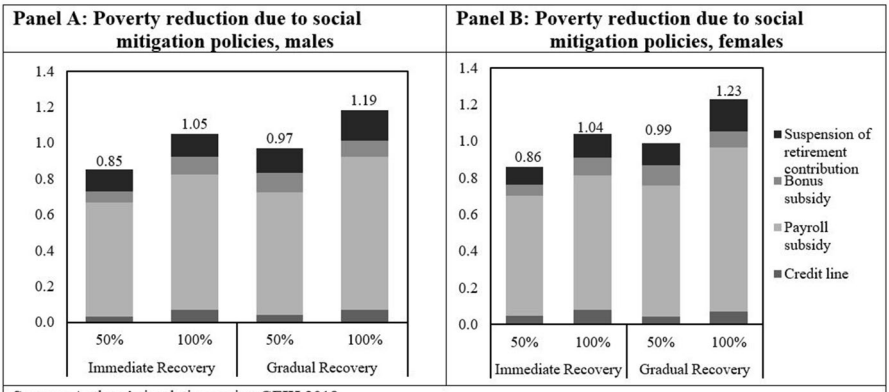
Source Authors' simulations using GEIH 2018

Extreme poverty headcount is defined as the percentage of people with per capita income below the national extreme poverty line of COP 117,805 (USD 31.44); and total poverty as below the total poverty line of COP 257,433 (USD 68.70)



Source: Authors' simulations using GEIH 2018
Note: Extreme poverty defined as monthly household per capita incomes below the national extreme poverty line of COP 117,805 (USD 31.44).

Fig. 3 Poverty reduction due to COVID-19-specific social mitigation policies by intervention and gender, Colombia



Source: Authors' simulations using GEIH 2018
Note: Extreme poverty defined as monthly household per capita incomes below the national extreme poverty line of COP 117,805 (USD 31.44).

Fig. 4 Poverty reduction due to COVID-19-specific economic recovery policies by intervention and gender, Colombia

were given discretion over whether or not they reopen. A second phase of reopening was envisioned 1 month after this.

In our simulations, we consider two phases of reopening, separated by a month. In the first month, we allow economic sectors and territories ready to reopen to return to pre-COVID-19 levels of economic activity. The remaining sectors open a month later. For simplicity, we consider that all municipalities in a reopened department choose to open in the first month. Table 10 shows that poverty reduction accelerates when the economy reopens and regains normal activity. This additional reduction in the first month varies between 1.27 and 2.39 pp, according to the immediate or gradual recovery scenario respectively.

Table 9 Cost benefit analysis of mitigation interventions and impact on female poverty in Colombia

Mitigation interventions	Total cost (millions COP) of current intervention (A)	Actual poverty reduction of intervention (best and worst cases. pp) (B)	Cost for a 1 pp poverty reduction (COP billions) ($C=A/B$)	Number of women brought out of poverty
Más Familias en acción	589,506	[0.27; 0.34]	[1,749; 2,216]	[65,183; 81,189]
Colombia Mayor	205,796	[0.10; 0.12]	[1,701; 2,144]	[23,098; 32,011]
Jóvenes en acción	67,985	[0.01; 0.02]	[3,777; 5,230]	[3,446; 4,230]
VAT Refund	374,965	[0.19; 0.22]	[1,744; 2,027]	[44,719; 60,933]
Solidarity Income	959,796	[0.49; 0.80]	[1,194; 1,979]	[119,305; 197,768]
Food Baskets UNGR	22,762	[0.02; 0.03]	[910; 1,186]	[4,942; 7,431]
Early Childhood Feeding Program	108,123	[0.03; 0.05]	[2,253; 3,379]	[9,757; 12,963]
Credit line	1,000,000	[0.05; 0.07]	[13,514; 22,222]	[10,948; 19,129]
Payroll subsidy	5,309,077	[0.65; 0.87]	[6,077; 8,193]	[161,646; 219,254]
Bonus subsidy	381,699	[0.06; 0.11]	[3,534; 6,638]	[13,682; 26,410]
Suspension of retirement contribution	2,199,447	[0.13; 0.17]	[12,728; 17,224]	[24,768; 42,779]

Source Authors' simulations using GEIH 2018

Note pp, "percentage point"; Exchange rate, USD 1.0 = COP 3,746.9

In absolute numbers, this reduction implies that between 631,735 and 1.19 million people are lifted from poverty more quickly (See Table 10). If the remaining sectors and territories are allowed to fully reopen the following month, the reduction increases, reaching 1.66 to 4.36 pp, or 818,193 to 2.14 million people. Both scenarios, however, assume that no dramatic second wave or renewed lockdown measures follow the lifting of the lockdown.

We found that the effects on poverty reduction by gender are virtually the same in the baseline scenario. When the gradual recovery scenario is considered, on average, the numbers of men lifted from poverty exceed those of women by between 0.15 and 0.2 pp, which implies that the re-opening will lead to between 10,000 and 36,000 more men exiting poverty than women.

An Alternative Mitigation Strategy: Universal Basic Income

Here we simulate an alternative mitigation policy: a universal basic income (UBI). The advantages and disadvantages of UBI have been widely discussed: Aiyar (2017), Arnold (2018), Banerjee et al. (2019), Bardhan (2017), Calnitsk (2017), Coady and Prady (2018). Drèze (2017), Francese and Prady (2018), Hanna and Olken (2018), Lowrey (2018), Piketty (2016), Ravallion (2018), and Yang (2018).

Universality removes exclusion and inclusion errors, stigma affecting beneficiaries, and transaction costs (Gentilini et al. 2020). However, UBI programs are very costly and may produce negative distributional considerations (for example, if financed by reducing existing progressive social spending). In practical terms, only Iran and Mongolia to date have implemented a (short-lived) national UBI program (see Tabatabai 2012; Yeung and Howes 2015, respectively).

To contribute to the discussion on UBI in some academic and governmental circles in Colombia, we here simulate the effect of a fully-fledged UBI in the context of COVID-19. We estimate the impact on poverty reduction of an alternative UBI that would provide a flat, unconditional, annual and universal cash transfer worth COP 231,846 (USD 61.89) per person. This results from dividing the cost of all existing mitigation packages, COP 11,219 billion (USD 2.99 billion), equally between the entire population.

The results, reported in Table 11, show that UBI reduces the poverty headcount by more (3.58 pp) than the full set of current programs combined (2.16 pp), in the baseline scenario of 50% income reduction and immediate recovery. The gap is similar in other scenarios.

When looking at beneficiaries by gender, the UBI increases the number of women taken out of poverty compared with the current package. Similarly, the number of beneficiaries is also larger for UBI (24.5 million women and 23.9 million men, compared to 14.7 million women and 15.3 million men benefitting by the current mitigation package).

Conclusions

Women worldwide are more exposed to the negative consequences of COVID-19. Under lockdown, they are more exposed to gender-based violence and their already-disproportional share of domestic and care activities is increased. They

Table 10 The effects on poverty of an early selective reopening of the economy, by gender, Colombia

	Reopening as per Decree 636, first month, compared with:		Reopening as per Decree 636, two months of reopening, compared with:	
	BASELINE: Immediate recovery (100% loss)	Gradual Recovery (100% loss)	BASELINE: Immediate recovery (100% loss)	Gradual recovery (100% loss)
Panel A: National				
Total poverty rate	32.1	33.7	31.7	31.7
Impact on total poverty headcount rate	− 1.27	− 2.39	− 1.66	− 4.36
Number of people exiting total poverty	631,735	1,186,796	818,193	2,141,356
Panel B: Males				
Total poverty rate	31.5	33.1	31.1	31.1
Impact on total poverty headcount rate	− 1.33	− 2.56	− 1.71	− 4.5
Number of people exiting total poverty	318,023	611,874	408,817	1,075,362
Panel C: Females				
Total poverty rate	32.7	34.3	32.3	32.3
Impact on total poverty headcount rate	− 1.28	− 2.35	− 1.67	− 4.35
Number of people exiting total poverty	313,711	574,922	409,376	1,065,994

Source Authors' simulations using GEIH 2018

Note Extreme poverty headcount is defined as the percentage of people with per capita income below the national extreme poverty line of COP 117,805 (USD 31.44); and total poverty as below the total poverty line of COP 257,433 (USD 68.70)

disproportionally work in precarious jobs, and in sectors highly exposed to COVID-19.

It should be therefore expected that women will fare worse than men in terms of labor from COVID-19. We review this proposition by seeking to understand the poverty impact of the pandemic, the impact of mitigating interventions and, ultimately, if COVID-19 increases the existing welfare gap between men and women through the labor and income-generation channel.

Admittedly, the focus of the analysis is narrow. We focus on a single country, Colombia. We define impact in terms of poverty headcount rates and numbers. We define labor-market impacts in terms of employment impacts alone. We narrowly define labor as paid and waged. We focus solely on monetary poverty. We assume that household members share their earnings equally. We assume that waged labor is not possible under lockdown so incomes are not generated. These decisions make our simulations traceable and capable of meaningful comparisons by gender. A complete labor assessment of COVID-19 would incorporate the use of household savings, the value of non-waged labor at home, earnings from new activities during the lockdown, and other wellbeing dimensions such as food security and nutrition. Thanks to telephone surveys monitoring the effects of COVID-19 in Colombia and globally (see IPSOS, Sistemas Integrales and World Bank, forthcoming), some of these issues will become more visible.

Nevertheless, three conclusions stand out for Colombia. First, the impact of the lockdown on poverty is a striking increase of 3.0 to 9.1 pp, or 1.5 to 4.4 million people. Second, the current set of mitigation policies reverses this poverty surge by between 2.16 and 2.23 pp at a cost of COP 11,219 billion (USD 2.99 billion). Broadly speaking, the Solidarity Income payment and the payroll subsidy have the largest impact on poverty. But this is better explained by their large budget rather than high efficiency. In fact, using the total budget currently spent on mitigating COVID-19 on a UBI program would reduce poverty by a further 1.5 pp (around 3.7 pp in total).

Third, there are no large differences by gender when it comes to the impact of the pandemic and mitigation interventions on poverty headcounts in Colombia. Women fare very similarly to men in terms of the share of occupied workers affected; the share of the newly poor; and the number of people that benefit from mitigation polices. Three reasons contribute to these results. None of the interventions are designed specifically for women. The lockdown has such a sweeping economic effect that women and men are affected equally. Finally, the measurement of poverty takes place at the household level, with optimistic assumptions about sharing resources.

These results should not be taken as lessening the importance of a gendered perspective when designing COVID-19 responses in Colombia or elsewhere, which should also go beyond employment considerations alone. Truly gendered policies during the pandemic should consider not only labor supply—and wage—gaps but also that caregiving demands are even greater during the pandemic; gender-based

Table 11 The effects on poverty of an UBI in Colombia

	BASELINE: 50% income loss; immediate recovery	100% income loss; immediate recovery	50% income loss; gradual recovery	100% income loss; gradual recovery
Panel A: Existing mitigation measures				
Total poverty rate	27.9	31.3	28.9	34.0
Impact on total poverty headcount rate	−2.16	−2.16	−2.23	−2.20
Number of people exiting total poverty rate	1,042,557	1,044,747	1,080,540	1,061,428
Number of total people benefited	30,030,245	29,898,240	29,943,400	29,882,393
Number of men benefited	15,258,426	15,172,771	15,203,229	15,162,155
Number of women benefited	14,771,820	14,725,470	14,740,171	14,720,238
Panel B: Universal Basic Income (UBI)				
Total poverty rate	26.5	29.9	27.5	32.5
Impact on total poverty headcount rate	−3.58	−3.51	−3.57	−3.72
Number of people exiting total poverty rate	1,732,760	1,701,836	1,729,083	1,800,755
Number of total people benefited	48,390,548	48,390,548	48,390,548	48,390,548
Number of men benefited	23,876,091	23,876,091	23,876,091	23,876,091
Number of women benefited	24,514,457	24,514,457	24,514,457	24,514,457

Source Authors' simulations using GEIH 2018

Note Extreme poverty headcount is defined as the percentage of people with per capita income below the national extreme poverty line of COP 117,805 (USD 31.44); and total poverty as below the total poverty line of COP 257,433, USD 68.70

violence rises; or that women are among the most exposed workers in pandemic frontline. In other words, women are more exposed to the pandemic in other dimensions and are critical to responding to its impacts effectively. We should continue to work towards closing gendered welfare gaps, even during the COVID-19 pandemic, in Colombia and elsewhere.

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Compliance with Ethical Standards

Conflict of interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

Annexure

See Tables 12, 13, 14, 15, and 16.

Table 12 Workers by sector, gender and formality status in Colombia

Economic sector	Affected workers				Non-affected workers				Total
	Male		Female		Male		Female		
	Formal	Informal	Formal	Informal	Formal	Informal	Formal	Informal	
Agriculture, Fishing, and Forestry	288,622	1,226,868	61,206	357,275	75,801	1,416,610	12,166	273,222	3,711,769
Mining and quarrying	37,035	1,741	8,301	230	57,169	78,575	4,234	20,779	208,065
Manufacturing	695,560	527,613	342,131	481,342	105,075	148,971	68,013	236,576	2,605,281
Electricity, gas and steam supply	0	0	0	0	51,708	2,550	13,609	2,925	70,793
Water supply; sewerage and waste management	0	0	0	0	63,524	21,076	19,086	9,967	113,653
Construction	443,222	953,131	62,625	14,190	12,857	2,695	11,191	1,408	1,501,320
Wholesale and retail trade; repair of motor vehicles and motorcycles	523,832	1,109,828	327,690	797,271	195,464	445,496	191,185	664,743	4,255,509
Transportation and Storage	451,334	857,440	72,640	34,397	29,028	66,332	15,351	9,414	1,535,937
Accommodation and food service activities	116,982	320,957	133,483	760,328	14,715	57,349	23,853	144,847	1,572,514
Information and communication	108,908	15,217	61,478	13,071	37,280	29,027	18,833	61,743	345,557
Finance and insurance activities	88,244	23,506	130,880	10,060	14,804	4,971	24,324	6,005	302,793
Real estate activities	64,019	18,311	28,737	7,941	111,646	14,719	39,582	12,109	297,064
Professional, scientific and technical activities	79,856	32,687	68,976	14,124	118,572	84,011	99,368	61,915	559,509
Administrative and support service activities	154,761	81,674	153,661	343,352	21,813	23,826	21,584	22,439	823,109
Public Administration and defense	0	0	0	0	389,679	6,748	276,089	8,756	681,271
Education	273,673	27,766	387,943	37,305	33,561	16,531	88,199	63,109	928,087
Human health and social work activities	0	0	0	0	177,064	21,664	570,185	154,391	923,304
Arts, entertainment and recreation	52,756	92,252	52,975	59,323	18,555	23,749	10,335	20,637	330,581
Other service activities	76,112	310,005	79,631	468,417	13,497	16,445	17,315	19,539	1,000,962
Activities of households as employers	16,309	17,515	126,429	503,144	995	4,457	259	2,964	672,072
Activities of extraterritorial organizations and bodies	0	0	0	0	2,594	495	1,883	15	4,987
Total	3,471,222	5,616,511	2,098,786	3,901,771	1,545,403	2,486,297	1,526,644	1,797,502	22,444,136

Source Authors' simulations using GEIH 2018

Note A worker is considered informal if (s)he does not contribute to a pension fund. A worker is considered formal if (s)he contributes to a pension fund

Table 13 Distribution of workers in affected sectors by company size and formality, by gender, Colombia

Company size	Male		Female	
	Formal	Informal	Formal	Informal
Panel A: Number of workers				
Microenterprise or alone (up to 10 workers)	817,634	5,273,023	388,661	3,680,694
Small enterprise (11–50 workers)	481,292	227,716	163,909	107,856
Medium enterprise (51—100 workers)	247,195	28,031	156,267	17,118
Large enterprise (more than 100 workers)	1,920,801	92,041	1,387,395	98,657
Panel B: Average monthly salary				
Microenterprise or alone (up to 10 workers)	1,298,943	683,996	1,046,492	435,371
Small enterprise (11–50 workers)	1,303,422	889,064	1,301,687	715,328
Medium enterprise (51–100 workers)	1,554,388	965,891	1,862,226	698,583
Large enterprise (more than 100 workers)	1,969,054	1,089,170	1,976,312	726,784

Source Authors' simulations using GEIH 2018

Note A worker is considered informal if (s)he does not contribute to a pension fund. A worker is considered formal if (s)he contributes to a pension fund

Table 14 Impacts on poverty by geographic area and gender, Colombia

	No COVID-19 counterfactual poverty rates		Immediate recovery (50% income loss)		Gradual recovery (50% income loss)	
	Urban	Rural	Urban	Rural	Urban	Rural
Panel A: National						
Total Poverty headcount rate	24.4	36.1	27.5	38.7	28.7	39.5
Impact on total poverty headcount rate			+3.1	+2.6	+4.3	+3.4
Number of the newly poor	9,123,741*	3,948,851*	1,169,202	288,014	1,601,452	380,201
Panel B: Males						
Total Poverty headcount rate	23.8	34.5	27.0	37.0	28.1	37.8
Impact on total poverty headcount rate			+3.2	+2.5	+4.3	+3.3
Number of the newly poor	4,302,170*	1,995,777*	577,305	105,427	787,696	191,632
Panel C: Females						
Total Poverty headcount rate	24.9	37.8	28.0	40.6	29.1	41.5

Table 14 (continued)

	No COVID-19 counterfactual poverty rates		Immediate recovery (50% income loss)		Gradual recovery (50% income loss)	
	Urban	Rural	Urban	Rural	Urban	Rural
Impact on total poverty headcount rate			+3.1	+2.8	+4.2	+3.7
Number of the newly poor	4,821,572*	1,953,074*	591,896	142,587	813,755	188,570

Source Authors' simulations using GEIH 2018

Note Total poverty headcount is defined as the percentage of people with per capita income below the national poverty line of COP 257,433 (USD 68.70)

Table 15 Impacts of COVID-19 on poverty on males, by formality, Colombia

	No COVID-19 counterfactual		Baseline: Immediate recovery (50% income loss;)		Gradual recovery (50% income loss)	
	Male		Male		Male	
	Formal	Informal	Formal	Informal	Formal	Informal
Extreme poverty headcount rate	0.21	6.56	0.25	7.62	0.30	8.04
Impact on extreme poverty headcount rate			+0.05	+1.06	+0.10	+1.48
Number of new extreme poor	10,334*	532,390*	2,305	85,707	4,795	120,085
Total Poverty headcount rate	4.96	27.77	6.74	31.32	7.47	32.53
Impact on total poverty headcount rate			+1.78	+3.55	+2.51	+4.76
Number of new total poor	248,860*	2,253,688*	89,365	287,968	126,021	385,883

Source Authors' simulations using GEIH 2018

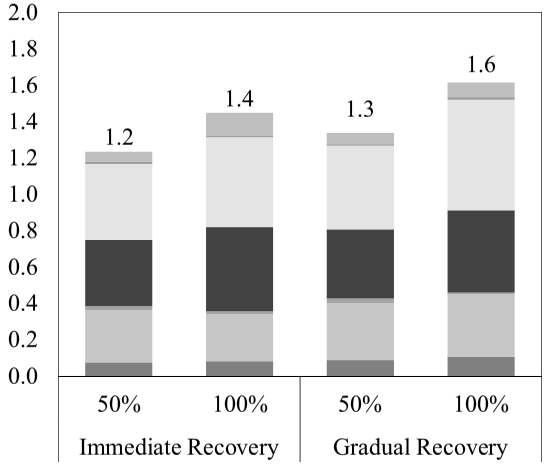
Note (*) pre-COVID-19 number of extreme and total poor

A worker is considered informal if (s)he does not contribute to a pension fund. A worker is considered formal if (s)he contributes to a pension fund

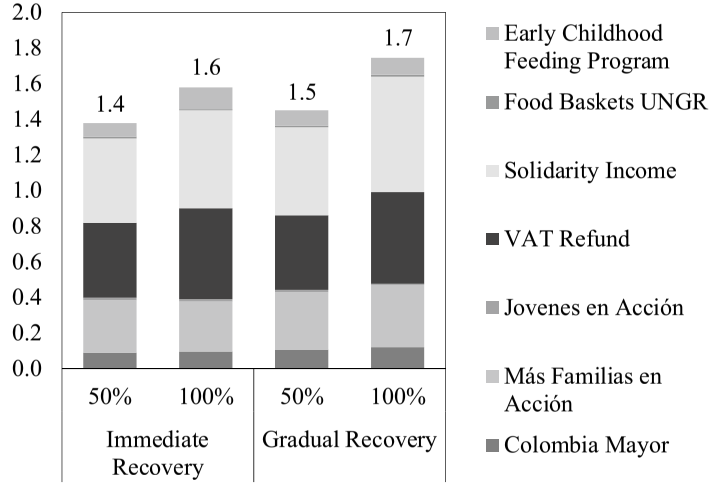
Extreme poverty headcount is defined as the percentage of people with per capita income below the national extreme poverty line of COP 117,805 (USD 31.44); and total poverty as below the total poverty line of COP 257,433 (USD 68.70)

Table 16 Extreme poverty reduction due to COVID-19-specific social mitigation policies by intervention and gender in Colombia

Panel A: Reduction on extreme poverty due to social mitigation policies, Males



Panel B: Reduction on extreme poverty due to social mitigation policies, Females



Source Authors' simulations using GEIH 2018

Note Extreme poverty headcount is defined as the percentage of people with per capita income below the national extreme poverty line of COP 117,805 (USD 31.44)

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