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Informal Households
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Evidence from Latin America

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The Challenge of Protecting Informal Households during the COVID-19 Pandemic: Evidence from Latin America

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Abstract

Latin American countries introduced rapid emergency measures to sustain the income of informal workers and their families during shelter-in-place orders to contain COVID-19. The effectiveness of these measures is limited. The coverage and replacement rates of usual labor income are high among the first quintile of the population but fairly low in the second and third quintiles, where a substantial fraction of households are informal and have limited ability to telework. If governments plan to extend lockdown measures or reintroduce them in the future, they might need to consider broader income transfers for the lower-middle class.

Keywords: COVID-19, social insurance, informality, Latin America.
JEL: O15, O17, I38

1 Introduction

Governments around the world are taking measures to contain the spread of the new strain of coronavirus that causes COVID-19, prioritizing in almost all cases some form of social isolation or distancing. But the economic costs are not the same for everyone. The disease lays bare societies' inequalities, inflicting greater economic costs on the less economically fortunate across countries (Galasso 2020; Mongey, Pilossoph, and Weinberg 2020a). Latin America is no exception, where working at home is a luxury that most people cannot afford (Dingel and Neiman 2020; Delaporte and Peña 2020; Hatayama, Viollaz, and Winkler 2020). Data from online surveys show that, in every country of the region, the incidence of the lockdown on job losses has been heavily concentrated in the bottom half of the distribution (Bottan, Hoffmann, and Vera-Cossio 2020). Moreover, high levels of labor informality mean that large sections of the population are excluded from government safety nets.

To overcome the income losses among the most vulnerable households and workers, governments across the region have put in place a series of emergency social assistance programs.[1] Among the 10 countries considered in this study, 33 ad hoc programs were launched between March and the end of May of 2020.[2] Some of the programs are extensions of existing policies, most notably conditional and unconditional cash transfers that expanded considerably during the first decade of the 2000s (Levy and Schady 2013). However, pre-existing programs have two limitations to reach all households at risk during the lockdown. First, they have well-known coverage limitations, even among the poor (Robles, Rubio and Stampini 2019). Second, the programs target the structurally poor and are not designed to mitigate temporary income shocks. Thus, many informal workers who are above the poverty line in normal times but would be severely affected by income losses during the lockdown

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[1] Governments put in place a much larger set of emergency measures (from soft credits to formal firms to adjustments to monetary policy). This paper evaluates the potential impact of the programs that target poor households and workers engaged in informal activities, which we broadly label as emergency social assistance programs.

[2] For data availability reasons, the analysis focuses on Argentina, Bolivia, Brazil, Chile, Colombia, the Dominican Republic, Ecuador, El Salvador, Peru, and Uruguay. These countries cover 60 percent of the population in Latin America.

are not eligible. To overcome these limitations, new programs targeting specific groups (e.g., self-employed, and unemployed who are not eligible for unemployment benefits) were added to the set of emergency measures.

This paper provides an ex-ante evaluation of the potential coverage and generosity of the COVID-19 emergency social assistance programs in 10 Latin American countries. The analysis maps the eligibility criteria of each program to the latest wave of nationally representative household surveys. We derive the coverage of the emergency programs across the income quintiles of each country's income distribution and a measure of the potential replacement rate that compares the total transfer that each household may receive as a share of its regular labor income.

We find that the potential coverage of the proposed emergency measures varies substantially by country, but in general it is fairly high among the poorest households that are in the first quintile of the income distribution, ranging from 68 percent in Chile to 100 percent (full potential coverage) in Brazil and Peru. Something similar happens with the replacement rate of potentially foregone labor incomes. With the exception of Uruguay, which introduced only selective lockdown in key sectors of economic activity and among vulnerable populations, the share of households with replacement rates below 25 percent in the first quintile of each country's income distribution does not exceed 20 percent. A different picture emerges in the second and third quintiles, which in all cases except Brazil and El Salvador present much lower replacement rates.

The paper makes two main contributions to the literature. First, Latin America was a pioneer in the development of conditional cash transfer (CCT) programs. By now they are ubiquitous and have rapidly expanded to the rest of the world (Fiszbein et al. 2009). These programs provide income support to households and, at the same time, introduce incentives for attending school and demanding health services. Many studies analyze the effects of CCT programs on labor supply, human capital, and welfare (to name but a few, Gertler 2004; Attanasio, Fitzsimons, and Gomez 2005; Barham and Maluccio 2009; Paxson

and Schady 2010) as well as features of their design (e.g., Attanasio, Oppedisano, and Vera-Hernández 2015; Dodlova, Giolbas, and Lay 2017). Our paper is the first to show the suitability of these programs to respond to an unexpected crisis. It shows that the existing safety nets have the potential to be expanded in times of crisis to make transfers more generous for those who are structurally poor. At the same time, the paper demonstrates the limitations of those safety nets to reach those who might fall into poverty temporarily. By doing so, it highlights the need for the region to develop a more robust system of automatic stabilizers that deal with the temporarily poor (e.g., unemployment insurance) that also accommodates the large existing informal economy (Alvarez-Parra and Sanchez 2009; Bosch and Esteban-Petrel 2013).

Second, this study contributes to the new literature on government responses to the COVID-19 crisis. Much of this literature focuses on developed countries (e.g., Faria-e-Castro 2020). The analysis in this paper has implications for the feasibility of sustaining a prolonged lockdown of economic activity in Latin America. But even beyond the initial lockdown period, strong social distancing may be sustained before a vaccine or viable cure becomes widely available. Self-enforcement and risk awareness have been key drivers of limited human interactions during the first wave of the pandemic (Maloney and Taskin 2020), suggesting that social distancing will continue independently of government interventions. In this context, labor demand in occupations and sectors that require high physical proximity (like retail, hotels, restaurants, and many personal services) may be substantially dampened even after the lockdown is lifted. Because these occupations and sectors are intensive in low-skilled labor (Mongey, Pilossoph, and Weinberg 2020b), they fundamentally employ informal workers in Latin America (Hatayama, Viollaz, and Winkler 2020). The challenges to sustain the incomes of these workers and their families highlighted here will be sustained over time.

The rest of the paper is organized as follows. Section 2 outlines the problem of implementing effective social distancing measures in economies with high rates of informality, such as those in Latin America. Section 3 describes the emergency social assistance pro-

grams in place in each country and how they were mapped to identify potential beneficiaries in household surveys. Section 4 discusses the potential coverage and replacement rate of the emergency measures. Section 5 concludes.

2   Social Distancing in an Informal Economy

Most of Latin America implemented strict social distancing policies relatively early during the pandemic. By mid-March, the 10 countries under analysis in this paper had fewer than 100 COVID-19 cases (Roser et al. 2020). Five days later, all 10 countries had closed their schools and a week later, there were strict lockdown measures in effect that required all non essential businesses to close temporarily and their populations to stay home, in many cases under strict penalties (Hale et al. 2020). The impacts of this widespread supply-side shock translated rapidly into a reduction of labor demand. Firm exits and job destruction amplified the initial effects of the lockdown, aggravating the recession (Guerreri et al. 2020).

In developing countries, the inability to telework combined with the high prevalence of labor informality imposes a limit to social distancing policies. Delaporte and Peña (2020) find that, for the sample of 10 countries used in this study, only 6.2 percent of individuals in the first quintile of the income distribution can work from home. The possibility of teleworking is also limited for individuals in the second and third quintiles (8.4 and 10.9 percent, respectively).

The limits on individuals teleworking are related to the task contents of their jobs, sector of economic activity, size and sophistication of employers, and formality status. Across occupations, only managers, professionals, technicians, and clerical workers are more amenable to teleworking. Across industries, it is only in finance, insurance, real estate and social services that the share of individuals who can telework exceeds 45 percent. Overall, only 6.7 percent of the informal workers are estimated to be able to work from home (Delaporte and Peña 2020).

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At the same time, informal workers have very little space to face unexpected income losses. They have limited access to sick leave or unemployment benefits (Goni, Lopez, and Serven 2011), they have on average negative savings (Bebkzuk et al. 2015), and they have precarious access to health benefits. In the 10 countries under analysis, 41 percent of workers in the first and second quintile of the income distribution are self-employed. These workers most likely live hand-to-mouth.

Table 1: Percentage of Households without Formal Workers, by Country and Income Quintile

	Q1	Q2	Q3	Q4	Q5
Argentina	74	44	29	23	19
Bolivia	97	86	75	61	47
Brazil	67	31	19	14	9
Chile	46	24	16	14	11
Colombia	94	70	44	34	17
Dominican Republic	69	51	43	41	32
Ecuador	83	63	48	34	20
El Salvador	94	72	54	45	34
Peru	99	87	68	51	38
Uruguay	51	18	8	4	2
LAC	77	55	40	32	23

Note: Unweighted average for LAC. Data are from 2018 household surveys from Inter-American Development Bank–Harmonized Surveys for LAC, except Chile (2017). Income quintiles are calculated at the household level using monetary labor income per capita. LAC = Latin America and the Caribbean.

The severity of the problem is even greater considering assortative mating (Ganguli, Hausmann, and Viarengo 2014). Table 1 shows the share of informal households. That is, those in which no household member holds a formal job (defined as one where social security is being paid). On average, three in four households in the first quintile and more than half in the second quintile of the income distribution are fully informal. These shares decline for high-income households. This pattern is consistent across countries in the region, but the share of informal households declines with the level of development. Among the second quintile of each country's labor income distribution, more than 70 percent of the households

in Bolivia, Colombia, El Salvador, and Peru are fully informal. By contrast, the shares are 24 and 18 percent in Chile and Uruguay, respectively.

This highlights an additional cost that informality imposes when households face generalized and unexpected income losses. In a context of sudden crisis, full household informality severely limits the possibility of consumption smoothing through within-household risk-sharing mechanisms (as found by Pruitt, and Turner 2020). This limited within-household risk sharing is also observed in other developing regions (Dercon and Krishnan 2000; Robinson 2012).

Recognizing that social distancing would not be feasible without some sort of income support program, countries in Latin America moved swiftly to compensate households for their potential lost income.

3 Approximating Government Emergency Social Assistance Programs

Our analysis is based on two main sources of data. First, we collected and coded COVID-19 emergency assistance measures that were identified primarily through official government websites that track policy responses. The information in these websites has sometimes been incomplete or updated with some delay. To complete and validate this information, we used three sources. First, the main newspapers in each country were scraped, searching for specific keywords.[3] Second, we checked the "Weekly policymakers response against COVID-19 database" put together by the COVID-19 Policy Measures Team at the Inter-American Development Bank. Third, we checked the "ACAPS COVID-19: Government Measures Dataset". All sources are included in Table A1 in the Appendix. Our second source of data

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[3]We searched newspaper websites for the words "subsidy," "transfer," "coronavirus," and "aid" (in Spanish or Portuguese).

is harmonized household surveys from 2018[4] that were used to match the descriptions of the programs to household or individual characteristics in the survey.[5]

Table 2 shows a detailed view of the policies implemented by the 10 countries. The transfers are identified by the name the country gave them (e.g., Bono Universal in Bolivia) or by the beneficiaries targeted for the cash transfer. We identified the details of each policy (as described in the law or government announcement), targeted beneficiaries (households or individuals), amount and frequency of cash transfers, and eligibility criteria. A total of 33 programs were put in place in the 10 countries.

In 19 programs the identification of potential beneficiaries in the surveys is straightforward. This is the case for programs that expanded existing policies whose beneficiaries were already identifiable in the surveys, such as Familias en Accion in Colombia. Another 12 policies were reasonably approximated with survey respondents' characteristics. The details of the mapping between programs and household survey characteristics are provided in the Appendix.[6]

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[4]Except in Chile, where the National Socio-Economic Characterization Survey (CASEN) is bi-annual and the latest available wave was 2017.

[5]See Table A2 in the Appendix for a full list of the surveys used.

[6]We matched all programs except two in Argentina that target pregnant women, a characteristic we cannot observe in the surveys.

Table 2: Emergency Social Assistance Measures

Country	Policy	Beneficiary description	Transfer Level	Pre-existent social program
Argentina	1	Retirees, pensioners, and noncontributory pension beneficiaries receiving up to ARS$18,892 for their monthly pension	Individual	Yes
	2	Beneficiaries of Universal Child Allowance (AUH)	Household	Yes
	3	Per pregnant female at the household (AUE)	Individual	Yes
	4	Tarjeta Alimentar - for parents of children affiliated to AUH who are not over age 6 years	Household	Yes
	5	Tarjeta Alimentar - for pregnant women in their third trimester or more who have the AUE benefit	Household	Yes
	6	Ingreso familiar de emergencia - transfer for households with a household head between 18 and 65 who works in domestic service, is an informal worker, is a *monostributista social* (categories A and B), or households receiving AUH or Progresar social programs; household must not have a formal source of labor income or receive any pensions	Household	No
Bolivia	7	Bono Familia - transfer per child enrolled in school (does not include tertiary level)	Individual	No
	8	Bono Universal - for adults between ages 18 and 60 who do not receive any other government transfers (for retirement, widowhood, disability or meritorious), nor wages from public or private institutions, nor pensions or rents	Individual	No
	9	Canasta Familiar - transfer for older adults who receive Renta Dignidad but no other rent or pension; mothers who receive the Juana Azurduy transfer; or people with disability who receive the disability bonus	Individual	Yes
Brazil	10	Transfer for households with a single mother as household head, or with individuals whose main source of income comes from being informal workers or self-employed; unemployed; or microentrepeneurs; these households must not be beneficiaries of Bolsa Familia; their total income must not be more than R$3,135 or total per capita income above R$522.5	Household	No
	11	Beneficiaries of Bolsa Familia who do not receive other benefits; their total income must not be more than R$3,135 or total per capita income above R$522.5	Household	Yes
Colombia	12	Beneficiaries of Familias en Accion	Individual	Yes
	13	Beneficiaries of Jovenes en accion	Individual	Yes
	14	Beneficiaries of Colombia Mayor	Individual	Yes
	15	Ingreso Solidario - Households under extreme poverty, poverty, or economic vulnerability that do not receive any social program (Familias en accion, Jovenes en accion, Colombia Mayor) but belong to SISBEN	Household	No
Chile	16	Ingreso Familiar de Emergencia - transfer for households whose source of income is mainly from informal sources. The amount depends on the number of people in the household and decreases according to the percentage of income that is formal; pensioners from Pension Solidaria de la Vejez receive a smaller amount of aid	Household	No
	17	Bono Invierno - transfer for older adults who do not receive more than one pension or whose amount received is less than CLP$166,191 and who are retired from specific institutions (Instituto de Prevension Social, Instituto de Seguridad Laboral, Direccion de Prevision de Carabineros de Chile, Caja de Prevision de la Defensa Nacional, among others) or if they are beneficiaries of the program Pension Basica Solidaria de Vejez	Individual	Yes
	18	Bono de Emergencia COVID 19 - this transfer aims at households with individuals receiving Subsidio Familiar (SUF), households in the Sistema de Seguridades y Oportunidades database, households who belong to the 60% most vulnerable according to the Registro Social de Hogares database, and households who do not have a formal income through employment or pension and do not have any SUF beneficiaries	Household	Yes
El Salvador	19	Transfer for informal employees and self-employed workers with low social economic resources	Household	No
Ecuador	20	Transfer for affiliates to the unpaid work regime or self-employed; or affiliates to the Seguro Social Campesino, with income less than US$400 and who are not registered to the contributive social security and are not registered as dependents; individuals must not be beneficiaries of any other programs of the government	Individual	Yes
	21	Transfer for people not included in the previous subgroup whose income is lower than $400 and are below the poverty line	individual	No
Peru	22	Bono Quedate en Casa - Transfer for urban households below poverty line, who are not beneficiaries of Pension 65 or Juntos	Household	No
	23	Bono Independiente - transfer for households with main income source coming from self-employment and not in poverty; households cannot be beneficiaries of the Juntos, Pension 65, or Contigo programs; none of the household members can be registered as dependent workers of the public or private sector; household members cannot have income over PEN$1,200 and cannot be part of any local or central government	Household	No
	24	Bono Rural - transfer for rural households below poverty line, who are not beneficiaries of Pension 65 or Juntos	Households	No
	25	Bono Familiar Universal - transfer for households in poverty and extreme poverty; beneficiaries of the Juntos, Pension 65, or Contigo programs, and households above the poverty line and having no members registered as dependent workers of the public or private sector; none of the household members can have income greater than PEN $3,000; and only households who have not received previous transfers from COVID-19 aid (Policies (22) to (24)) can receive this transfer	Household	Yes
Dominican Republic	26	Beneficiaries of the Solidaridad social Comer es Primero program	Household	Yes
	27	Transfer for households who do not have any Solidaridad program Comer es Primero benefits and are under poverty and vulnerability according to SIUBEN	Household	No
	28	Additional transfer for groups in Policies (28) and (29) whose household head is vulnerable (age 60+ years)	Household	Yes
Uruguay	29	Extra transfer for Tarjeta Uruguay Social beneficiaries	Household	Yes
	30	Transfer for adults who are 65+ years and still working in the private sector (sickness benefit due to quarantine measures)	Individual	No
	31	Beneficiaries of Plan Equidad	Household	Yes
	32	Transfer for food purchases for informal and self-employed workers, with no other social program benefits and who do not have social security	Individual	No
	33	Transfer for a certain type of taxpayers (monotributistas sociales del MIDES)	Indiviidual	No

Using the household surveys, we then calculated potential coverage and replacement rates by household labor income quintile in each country. To approximate the replacement rates, we uniformly updated household labor incomes in the surveys to 2020 prices. Hence, our analysis shows the generosity of the intended programs as a percentage of the regular earnings of the households in each income quintile.[7]

Our estimates should be interpreted as an upper bound of the actual coverage and replacement rates in each country for two reasons. First, we focus on potential rather than actual beneficiaries. Implementing these programs with complex eligibility criteria during a pandemic is challenging. And so is the ability to receive aid in a region where less than 40 percent of the population has a bank account and bancarization is particularly low among households in the bottom half of the distribution (Demirgüç-Kunt et al. 2018). Despite these limitations, governments are innovating to expand the reach of the programs. For example, beneficiaries of several emergency programs in Colombia can opt to be enrolled in mobile wallet platforms and bank accounts to receive the aid. Yet, there is no doubt that some targeted families will end up not receiving aid.

Second, to calculate the replacement rate, we obtained the monthly stipend from all programs as a ratio of the regular monthly labor income of the household. At the time when we finished this paper (May 31), complete or soft lockdown measures were still in effect in the main cities of all the countries considered, except Uruguay. Our monthly stipends are calculated taking into account the projected duration of the lockdown. If governments were to decide to extend them without expanding the aid, the monthly stipends will decline.

4 Coverage and Generosity of the Transfers

Figure 1 summarizes the main results of the paper. It shows two indicators of the potential coverage of emergency transfers, measured as the share of households that are expected to receive them. One measure includes only emergency transfers that are extensions of programs

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[7]Households whose labor income was zero or negative in the survey are excluded from the analysis.

that existed before the COVID-19 crisis, and the other considers all emergency transfers. The third line shows the generosity of the emergency programs combined, calculated as the median emergency transfer received by households as a proportion of their regular monthly household labor income. The three measures are computed by quintile of the household labor income distribution of each country and averaged across the 10 countries.

Figure 1: COVID-19 Emergency Social Assistance Programs in LAC. Coverage and Replacement Rates
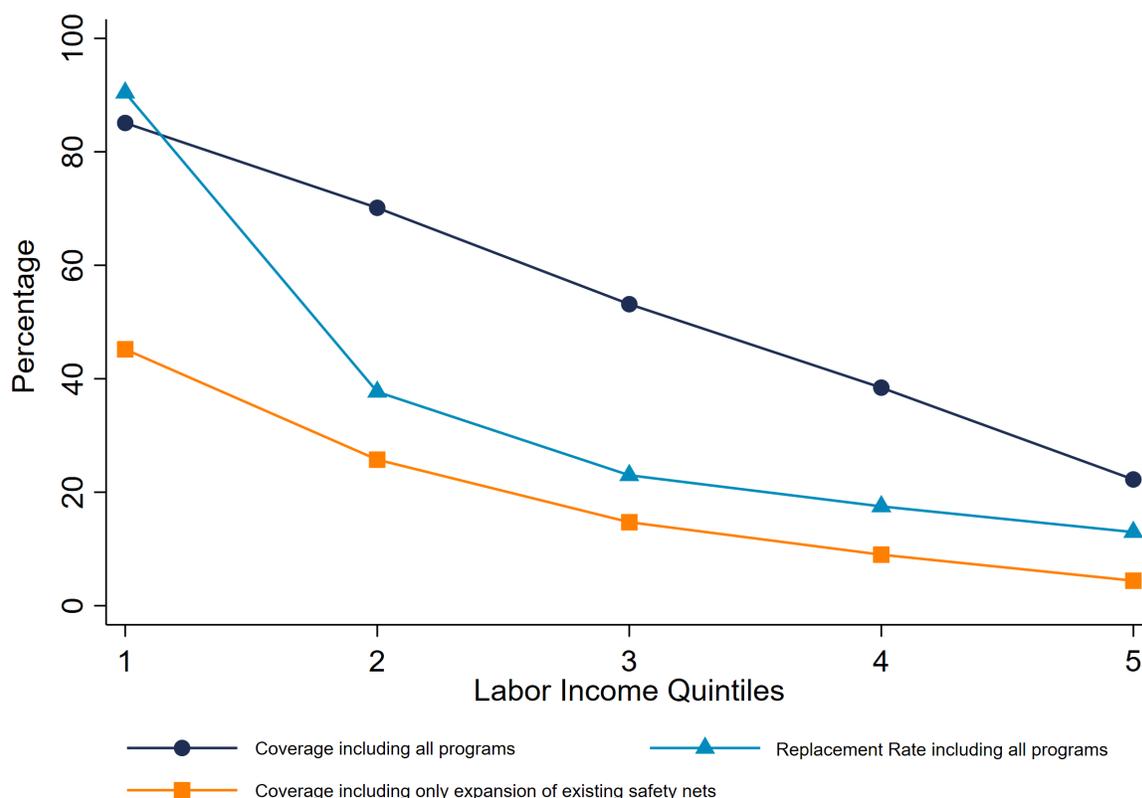
Note: Unweighted average for LAC. (i) Coverage is defined as the percentage of household receiving the aid (ii) Replacement Rate is the median of the monthly monetary transfer over the monthly monetary labor income for the targeted households. LAC average for coverage including only expansion of existing safety nets does not include El Salvador

The emergency transfers have the potential to reach a high proportion of households in the first quintile, but coverage drops linearly with income quintile. This leaves a substantial fraction of households in the second and third quintiles uncovered, although these quintiles have a high concentration of fully informal households (see Table 1), uncovered. The high coverage in the first quintile, potentially reaching 85 percent of households, hinges on the

set of ad-hoc measures introduced by the governments in the region. If governments were to rely only on the expansion of existing social programs, the coverage would have dropped to 45 percent.[8] The extension of the ad-hoc programs also shows potential leakages. Up to 22 percent of the households in the fifth quintile could become beneficiaries of one of these emergency social assistance programs.

Table 3: Percentage of Targeted Households by Type of Monetary Transfer, Country and Income Quintiles

	A. Preexisting social programs					B. All transfers				
	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
Argentina	66	48	35	21	7	71	53	42	29	15
Bolivia	50	28	24	22	16	93	94	90	81	50
Brazil	80	23	0	0	0	100	97	68	21	4
Chile	32	20	12	7	4	68	43	30	20	7
Colombia	38	23	12	5	1	88	55	12	5	1
Dominican Republic	39	30	23	17	9	84	49	23	17	9
Ecuador	5	6	3	2	1	54	44	41	35	17
El Salvador	0	0	0	0	0	96	83	80	76	64
Peru	46	23	9	3	1	100	93	71	50	26
Uruguay	51	31	13	4	1	97	90	74	51	29
LAC	45	26	15	9	4	85	70	53	38	22

Note: LAC = Latin America and the Caribbean. Unweighted average for LAC. 2018 household surveys from IDB-Harmonized Surveys for LAC, except Chile (2017). Income quintiles are calculated at the household level using the distribution of monetary labor income per capita in each country. Panel A shows the percentage of targeted households receiving monetary transfers if countries only used preexistent social programs. The LAC average in panel A does not include El Salvador. Panel B shows the percentage of targeted households including all the policies implemented. The LAC average in panel B includes all 10 countries.

Moving to the detailed country results, Table 3 shows the share of households in each quintile of the income distribution of each country that was expected to receive an emergency social assistance transfer. Panel A considers the emergency transfers that were allocated to households via preexisting social programs. On average, 45 percent of the households in the first income quintile received an emergency transfer through the preexisting infrastructure of the social safety net, but this varies substantially across countries, with coverages as low as

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[8]This excludes El Salvador, which opted not to rely on its CCT program to cover the income losses of the COVID-19 lockdown measures.

5 percent in Ecuador and as much as 80 percent in Brazil. This is not surprising, given the low coverage of safety nets in the region. Robles, Rubio, and Stampini (2019) report that on average CCT programs in Latin America cover about 43 percent of households below the poverty line who have children. Similarly, noncontributory pension programs cover about 46 percent of the elderly who are under the poverty line.[9] Interestingly, Robles, Rubio, and Stampini (2019) report that among the CCT and non-contributory pension programs in the region the country with the lowest coverage is El Salvador, reaching as little as 11 percent of poor households with children and 9.4 of the elderly who are poor. El Salvador is the only country among those considered in this study that has not used targeting of its preexisting safety net to provide emergency transfers during the COVID-19 pandemic.

Being aware of the coverage limitations of preexisting social assistance programs, governments around the region expanded the eligibility criteria with a set of ad-hoc measures. Table 3, panel B, shows the coverage of all emergency transfers lumped together, which reaches more than 90 percent of the households in the first quintile in five of the 10 countries. Coverage drops in most countries for households in the second or third quintiles. Yet, in Bolivia, Brazil, El Salvador, Peru, and Uruguay it reaches on average 84 percent of the second and third quintiles, which allowed the emergency transfers to reach the lower-middle class.

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[9]The reasons for low coverage are many. Some of the programs are small due to fiscal constraints; targeting is based on proxy-means testing, which is imperfect; lack of connection or distrust of social services; and inability to comply with the eligibility criteria or conditionalities.

Table 4: Replacement Rate of COVID-19 Emergency Social Assistance by Country and Income Quintile

	A. Median					B. Less than 25%				
	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
Argentina	60	24	15	10	6	15	52	93	100	100
Bolivia	97	22	12	7	4	5	58	95	100	100
Brazil	164	79	57	55	57	0	0	0	0	0
Chile	97	46	28	18	5	19	40	44	93	100
Colombia	61	27	9	5	3	15	46	99	100	100
Dominican Republic	41	21	13	10	7	19	60	84	89	99
Ecuador	79	28	12	8	5	4	46	84	92	100
El Salvador	189	101	67	50	32	0	0	1	4	30
Peru	100	23	14	10	9	4	56	84	89	100
Uruguay	18	6	3	2	1	63	94	94	94	87
LAC	90	38	23	17	13	14	45	68	76	82

Note: LAC = Latin America and the Caribbean. Unweighted average for LAC. Data are from 2018 household surveys from IDB-Harmonized Surveys for LAC, except Chile (2017). Income quintiles are calculated at the household level using monetary labor income per capita. The replacement rate is defined as total monthly transfer divided by regular monthly labor income in the household. Non-targeted households by the emergency programs and households with zero or negative regular labor income are excluded. Panel A shows the median of the replacement rate over the monetary labor income for targeted households. Panel B shows the percentage of targeted households for which the replacement rate is less than 25%.

Table 4 assesses the ability of the emergency transfers to replace potential labor income losses. Panel A shows the median replacement rate, and panel B shows the share of households for which the emergency transfer would replace less than 25 percent of their pre-COVID-19 income. Non-targeted households by the emergency programs and households with zero or negative regular labor income are excluded in the calculations.

The replacement rate is very high in the first quintile of all countries, in some cases more than compensating for the potential labor income loss. Notable exceptions are Uruguay (potential replacement rate of 18 percent) and the Dominican Republic (41 percent). Similarly, except in Uruguay, the share of households in the first quintile of the earnings distribution with a replacement rate below 25 percent is less than 20 percent.

However, the transfers replace a small share of the potential income losses of households in the second and third quintile. Brazil and El Salvador are the only exceptions. In the other eight countries, the median replacement rate does not reach 50 percent among households in

the second quintile, and it is below 30 percent in the third quintile. The emergency programs also leave a substantial share of households with replacement rates below 25 percent. More than 50 percent of the households are below this threshold in the second quintile in the same eight countries, and more than 80 percent in the third quintile would receive a transfer that replaced less than 25 percent of their labor income if this becomes zero during the lockdown. Having adopted social distancing measures later than most of the countries in the group, Brazil is an outlier. The two programs included in the emergency social assistance measures have a median replacement rate that is up to 57 percent of regular labor income in the richest quintile, leaving no household with a potential transfer that would cover less than 25 percent of its regular labor income. Potential beneficiaries in Brazil in all quintiles of the distribution would greatly benefit from the transfers.

5   Conclusion

Latin American governments have taken aggressive steps to save lives by ordering shelter-in-place regimes to stop the propagation of COVID-19. In most cases, they have swiftly implemented compensation programs to sustain incomes and facilitate stay-at-home orders. This paper highlights the strengths and limitations of these emergency programs by analyzing their potential coverage and generosity in 10 Latin American countries.

The proposed emergency measures do a good job in general in targeting the most vulnerable households: those in the first quintile of the country's labor income distribution. However, the coverage and replacement rates in the second and third quintiles are much more limited. With the notable exceptions of Brazil and El Salvador, emergency social assistance programs as currently formulated cannot replace the potentially foregone incomes of a large fraction of families in the informal workforce that are forced to shelter in place and cannot work. This insufficient compensation limits the ability of governments to sustain extended lockdown periods, and it may limit the ability to enforce another wave of lockdowns

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due to contagion surges.

The government responses to the COVID-19 crisis highlight structural problems in the region: the fragmented and insufficient coverage of social protection systems. These limitations complicate the delivery of income support to informal workers who are not sufficiently poor to benefit from social assistance but lack other automatic stabilizers, such as unemployment insurance, that could alleviate the impact of temporary shocks.

The full impact of the shortcomings of the social protection systems during the course of the current outbreak is still unknown. Latin America needs to think seriously about reforms that would provide more effective and agile assistance to those falling through the cracks in times of crisis. Doing so would make the region more resilient.

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Appendix

Identifying COVID-19 Emergency Measures and Matching them to Household Surveys

We used several websites and news sources to identify the policies put in place in each country. Policies were identified primarily through official government websites that track countries' COVID-19 policy responses. Table A1 offers a full list of these websites. Sometimes the information in these websites is incomplete or updated with a delay. All the information was cross-checked with several sources. The main newspapers in each country were scraped, searching for the following keywords: "subsidy", "transfer", "coronavirus", "bonus", and "aid". We also checked policy makers' weekly response against the COVID-19 database put together by the COVID-19 Policy Measures Team at the Inter-American Development Bank (IDB). The last source for double checking and obtaining updates was the ACAPS COVID-19: Government Measures Dataset. All the sources are included in Table A1.

Table 2 in the main text presents a detailed view of the policies implemented by the 10 countries in our sample. We gathered information related to the beneficiaries (households or individuals), the amount and frequency of the emergency cash transfers and the eligibility criteria. Given the heterogeneity in the measures taken by governments concerning the implementation date, frequency (unique lump sum or monthly) and lockdown duration, our analysis focuses on a one-month time span.

To have a standardized measure across countries, we pro-rated the monetary amount to fit as a monthly transfer. We calculated the number of days the lockdown lasted, or is expected to last according to the information available by May 31. We take into account that some countries did not implement a total quarantine, and in these cases, we define it as the period when some sectors or capitals had stay-at-home orders. Then, for each policy, we divided the total cash transfer over the approximated months under lockdown. For example, in Peru the cash aid was a unique lump sum equivalent to PEN\$760 and the quarantine is expected to last approximately 3.5 months (it started mid March and is expected to last until the end of June). This means that, for Peru, the monthly monetary transfer is equivalent to approximately PEN\$217. In those countries where the transfer was designed as monthly and fits with the lockdown time estimated -such as Brazil, El Salvador, Uruguay and Ecuador- we used the amount as it was given by the governments, assuming the payment to all beneficiaries started with the quarantines.

Second, we identified the households beneficiaries using the variables from the 2018 household surveys harmonized by the IDB for all countries (except Chile, where the household survey is bi-annual and the latest available wave was 2017) [10]. To match the eligibility criteria with the surveys, we transformed the income variables to 2020 prices by multiplying them by the official inflation rates in 2019 and up to April 2020 for each country (for Chile, we added the 2018 inflation rate). As our analysis focuses on measuring the coverage and

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[10]See Table A2 for a full list of the surveys used.

generosity of the emergency measures, we worked with the usual labor income obtained by the household. Hence, we restricted the analysis to a sample of households with a monetary labor income per capita greater than zero, equivalent to 80 percent of the households.

To identify the policies' beneficiaries, we assessed whether this could be done directly using the household's survey variables or a set of variables and some assumptions that could help us approximate the targeted population. Table **??** shows that 19 policies in the 10 countries in our sample could be directly identified by specific questions in the survey. This is the case for most programs that target pre-existing social programs (such as Juntos or Pension 65 in Peru) or very specific segments of the population (like Bono Familia in Bolivia, which targets primary and secondary school students). For the other 12 policies, we made some assumptions to simulate, as close as possible, the potential households receiving the aid. To approximate the targeted households, we assumed that the complete eligible population for the regular cash transfer program was also the complete beneficiary population for the emergency transfer. A list of assumptions for each country are explained in the following list. Two policies for pregnant women in Argentina were not included, since we could not identify this population in the survey.

- *Argentina.* We approximated Policies (2), (4) and (6), since the survey does not have a variable to identify them directly. Policies (2) and (4) aim at Asignacion Universal por Hijo (AUH) beneficiaries, which is a program for unemployed; informal economy workers with incomes less than a minimum wage; a special category of taxpayers (monotributistas sociales); domestic service workers; and beneficiaries of Hacemos Futuro, Manos a la Obra, and Ministry of Labor (Secretaria de Gobierno de Trabajo) programs. All beneficiaries must have at least one child younger than 18 years. We were able to map most of all the conditions, except, due to lack of taxpayer data, we could not identify the specific taxpayers (monotributistas), instead we proxied it by including the self-employed. The household survey did not have variables to identify whether they participated in any of the Ministry of Labor programs.

  Policy (6), Ingreso Familiar de Emergencia, targets informal, domestic service and *monotributista social* in categories A-B household heads without unemployment aid or who have a dependent source of income in the household. As we could not identify the taxpayer criteria, we proxied it by including self-employed household heads earning less than ARS$26,092 per month. This aid is automatically given for AUH and PROGRE-SAR beneficiaries. As we could not identify the latter beneficiaries using the survey, we proxied it by assuming that all individuals who are elegible for PROGRESAR are beneficiaries. Hence, we include any household with at least one member between ages 18 and 24, who is unoccupied and with a household monthly total income less than three times the minimum wage, and who are enrolled in an educational program.

- *Brazil.* We made assumptions for policies (10) and (11). Policy (10) was aimed to help self-employed and informal workers who cannot work during the social distancing restrictions, especially informal households who are not part of Bolsa Familia. We assumed that all households that have at least one of the target beneficiaries re-

ceive R$1,200. Further, we approximated households with a single female household head and at least one child and households whose household head works as an informal worker, is self-employed, or is an employer in a firm with 0-5 workers (microentrepreneurs). All households that are beneficiaries of this program must have total incomes less than R$3,135.

Policy (11) targets Bolsa Familia Beneficiaries. The government gave them the option to receive R$1,200 if it was higher than their usual transfer. Therefore, we assumed that both Bolsa Familia beneficiaries and informal households receive R$1,200. We could not identify Bolsa Familia beneficiaries directly from the survey. Therefore, we approximated it with households under extreme poverty and households below the 2018 poverty line who have at least one child between 0 and 17 years.

— *Colombia.* Policy (15) targets three segments of the population. We identified the first two segment using the 2018 national poverty and extreme poverty lines to approximate them. We excluded the third segment, households under economic vulnerability in the SISBEN, as we could not identify them using survey data.

— *Chile.* The design of Policies (16 - 18) uses country-specific indexes or indicators, such as Registro Social de Hogares (RSH) and the Indicador Socioeconomico de Emergencia (ISE) to target vulnerable households. We do not have access to both indicators. However, since RSH is calculated using the total household income adjusted by the number of household members and other indicators, we used total income per capita to proxy the policy coverage. We cannot aproximate the ISE indicator.

Policy (16) established three subgroups of beneficiaries receiving differential monthly aid according to their vulnerability level and number of household members. The first two subgroups were a three-month aid program, which targets 90% of the most vulnerable households. We approximated it by including households below the 90th percentile of total income per capita. They also used as a criteria the 60% and 40% most vulnerable according to the ISE. As we could not observe it in the data or approximate it, we excluded this condition. The first subgroup received 100% of the cash aid, as it is also aimed for households without formal workers. The second subgroup received 50% of the benefit, as it is aimed at households with mainly informal income and income less than the aid they would receive if they were in the first subgroup. To avoid using an arbitrary criterion of mainly income, in the second subgroup, we considered households with at least one formal and one informal worker. Lastly, the third subgroup targets for the 80% most vulnerable households with at least one older adult benefitting from the Pension Basica Solidaria Vejez. The survey allowed us to identify the last two conditions but not the first, which we approximated using total income per capita. Furthermore, for all three subgroups, the transfer amount decreased each month, meaning that the first monthly transfer will be the highest of the whole. Hence, we used the amount given during the first month.

Policy (17), Bono Invierno, was a unique transfer allocated to retired people. The

variables in the survey data allow us to identify some of the beneficiaries directly, but there are some who are excluded for lack of data.

For policy (18), the Covid- 19 emergency bonus, we used the survey to directly identify the beneficiaries of Asignacion Familiar program (SUF) and those who are part of the SSyOO database. Nonetheless, we approximated the 60% most vulnerable households according to the RSH database by including all households earning below the 60th percentile of the total income per capita.

— *El Salvador.* Policy (19) is designed to aid informal households and to cover at least 70% of the workers. Hence, we approximated informality as individuals without pension benefits or who were not affiliated to social security and, to reach the 70% objective, we also included in our proxy formal self-employed workers.

— *Ecuador.* Policy (20) has several subgroups of beneficiaries such as Seguro Social Campesino beneficiaries and affiliated to the unpaid work regimen. We were able to identify the first group but not the latter. Therefore, we approximated it by including all people working as nonremunerated and assumed everyone is under this regime. We also included self-employed workers as it has been stated that this is one of the policy objectives. Accordingly, following the policy design, we restricted the beneficiaries to have a labor income less than US$400, and not receive other government transfers, such as Bono de Desarrollo Humano or disability transfers and exclude those who are not contributing to social security. We restricted the sample of beneficiaries to be individuals of 18+ years.

— *Dominican Republic.* Policy (27) was a transfer intended for vulnerable and poor households according to SIUBEN (country-specific targeting indicator). We approximated the potential beneficiaries using the 2018 national poverty line. We could not approximate the vulnerable households in SIUBEN, as we did not have access to this indicator.

— *Uruguay.* For Policies (29) and (31) the survey had specific variables for directly identifying the beneficiaries. In Policy (29), we identify Tarjeta Uruguay Social beneficiaries and assign the current 2020 amount according to the number of children in the household. Nonetheless, as we could not identify whether there is a pregnant woman in the household, we only assigned the extra transfer of UYU$292 per child in the household and exclude the pregnant women benefits. Policy (31), Plan Equidad, is a conditional cash transfer program. The amount given depends on the number of eligible beneficiaries in the household and educational level, among others. The household survey allowed us to identify the targeted households but not the amount received. To avoid trying to approximate the amount each household receives, as it depends on a list of variables (for example, if the first beneficiary in the household was pregnant or was a child under five years old; information we do not have), we relied on the amount already stated in the survey but we approximated it to 2020 prices with the inflation rates of 2019 and up to April 2020.

Once all the groups of beneficiaries were identified, to compute the replacement rate, we obtained the total COVID-19 monthly monetary transfer at the household level by adding all

the individual and household transfers received and divided it by the total monthly monetary labor income.

Table A1: Covid-19 policies sources

Sources

1. Government web pages and newspapers

https://www.argentina.gob.ar/coronavirus/medidas-gobierno (Argentina)
https://www.argentina.gob.ar/economia/medidas-economicas-COVID19/ingresofamiliardeemergencia (Argentina)
https://www.boliviasegura.gob.bo/normativa.php (Bolivia)
https://id.presidencia.gov.co/especiales/200317-medidas-enfrentar-coronavirus/index.html (Colombia)
https://coronaviruscolombia.gov.co/Covid19/acciones/acciones-de-economia.html (Colombia)
https://www.chileatiende.gob.cl/fichas/77255-bono-de-emergencia-covid-19 (Chile)
https://www.gob.pe/busquedas?contenido[]=noticias&institucion[]=presidencia&reason=sheet&sheet=1 (Peru)
https://www.gub.uy/ministerio-salud-publica/coronavirus (Uruguay)
https://www.economiayfinanzas.gob.bo/ (Bolivia)
https://calendariobolsafamilia2020.net/quem-tem-direito-ao-bolsa-familia-2020/amp/ (Brazil)
https://www.elsalvador.com/noticias/negocios/el-salario-minimo-actual-solo-alcanza-para-cubrir-un-42-del-costo-de-la-vida-en-el-salvador/673786/2020/ (El Salvador)
https://www.prensalibre.com/internacional/coronavirus-el-salvador-ordena-cuarentena-de-30-dias-y-dara-subsidio-de-us300-a-los-mas-necesitados/ (El Salvador)
https://www.presidencia.gob.sv/presidente-nayib-bukele-confirma-la-entrega-del-subsidio-de-300-a-750000-familias/ (El Salvador)
https://www.elsalvador.com/eldiariodehoy/cuarentena-domiciliar-gobierno-bono/698888/2020/ (El Salvador)
https://www.eluniverso.com/sites/default/files/archivos/2020/04/decreto_ejecutivo_no._1026_20200324171450_20200324171526_20200324191332-1026-certificado_compressed.pdf (Ecuador)
https://www.produccion.gob.ec/wp-content/uploads/2020/03/Decreto_Ejecutivo_no._1022_20200227194449_compressed1.pdf (Ecuador)
https://www.gub.uy/ministerio-desarrollo-social/comunicacion/comunicados/beneficios-otorgados-monotributistas-sociales-mides (Uruguay)
https://www.180.com.uy/articulo/83151_aprobaron-subsidio-de-6779-pesos-por-dos-meses-a-monotributistas-del-mides (Uruguay)
https://ladiaria.com.uy/articulo/2020/4/coronavirus-gobierno-dara-1200-a-las-personas-que-no-reciben-ninguna-prestacion/ (Uruguay)
https://www.meganoticias.cl/dato-util/299030-bono-covid-19-coronavirus-pago-solo-con-el-rut-cuenta-rut-bancoestado.html (Chile)
https://ingresosolidario.dnp.gov.co/ (Colombia)
https://www.inclusion.gob.ec/gobierno-nacional-entregara-bono-de-contingencia-a-400-mil-familias-por-la-emergencia-sanitaria/
https://www.eluniverso.com/sites/default/files/archivos/2020/04/decreto$_e$jecutivo$_n$o.$_1$026$_2$0200324171450$_2$0200324171526$_2$0200324191332 $- 1026 - certificado_c ompressed.pdf$
https://www.elcomercio.com/actualidad/coronavirus-covid-bono-emergencia-sanitaria.html
https://boliviaemprende.com/noticias/decreto-supremo-n-4215-bono-universal
https://www.periodicobolivia.com.bo/el-plazo-para-cobrar-la-canasta-familiar-de-bs-400-es-de-tres-meses/
https://libero.pe/ocio/1553756-bono-universal-bolivia-covid-19-beneficiario-bs-500-son-requisitos-bono-familia-carnet-identidad-fecha-link-bancos
https://www.opinion.com.bo/articulo/cochabamba/quienes-como-cobra-bono-canasta-familiar-hoy/20200402221439759940.html

2. Newspapers

El Comercio
El Tiempo
El Universo
El Peruano
El Observador
El Deber
La Nacion
La Republica
ElSalvador.com
El Desconcierto
Diario Financiero
Infobae
El Clarin
Valor Investe - Globo Noticias
Agencia Brasil

3. General datasets and publications

ACAPS COVID-19 Dataset (URL: https://data.humdata.org/dataset/acaps-covid19-government-measures-dataset)
Americas Society Council of the Americas Where is the Coronavirus in Latin America? from May 21, 2020 (https://www.as-coa.org/articles/where-coronavirus-latin-america)
IADB COVID-19 policy Measures by the Covid-19 policy Measures Team
https://www.ey.com/es_cr/tax/medidas-especiales-covid-19

4. Inflation data

https://rpp.pe/economia/economia/inei-peru-registro-una-inflacion-de-19-en-2019-noticia-1237290 (Peru)
Instituto Nacional de Estadistica Informatica (INEI - Peru)
Banco Central de Bolivia (Bolivia)
Banco de la Republica (Colombia)
Instituto Nacional de Estadistica (Bolivia)
Instituto Nacional de Estadistica (Uruguay)
Instituto Nacional de Estadistica y Censos (Ecuador)
Instituto Nacional de Estadistica y Censos (Argentina)
Instituto Brasileiro de Geografia e Estatistica (Brazil)
Banco Central (Dominican Republic)
Banco Central de Reserva (El Salvador)
Instituto Nacional de Estadistica (Chile)

Table A2: Household Surveys and Year by Country studied

Country	Household survey	Year
Argentina	Encuesta Permanente de Hogares (EPH)	2018
Bolivia	Encuesta Continua de Hogares (ECH)	2018
Brazil	Pesquisa Nacional por Amostra de Domiciolios (PNAD)	2018
Chile	Encuesta de Caracterizacion Socioeconomica Nacional (CASEN)	2017
Colombia	Gran Encuesta Integrada de Hogares (GEIH)	2018
Dominican Republic	Encuesta Nacional de Hogares - Fuerza de Trabajo (ENHFT)	2018
Ecuador	Encuesta Nacional de Empleo, Desempleo y Subempleo (ENEMDU)	2018
Peru	Encuesta Nacional de Hogares sobre Condiciones de Vida y Pobreza (ENAHO)	2018
El Salvador	Encuesta de Hogares de Propositos Multiples (EHPM)	2018
Uruguay	Encuesta Continua de Hogares (ECH)	2018