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Lasting Scars: The Unequal Impacts of Unemployment in Latin America

Guillermo Alves¹ | Joaquín Varvasino²

¹Economista Principal. Dirección de Investigaciones Socioeconómicas. CAF - Banco de Desarrollo de América Latina galves@caf.com

²Estudiante de Doctorado, Universidad Pompeu Fabra. joaquinvarvasino@hotmail.com

We study the impact of the unemployment rate at the time of labor market entrance on the labor outcomes of individuals of different social origin in 18 Latin American countries. Higher unemployment increases the probability of being unemployed, decreases the likelihood of being a firm owner, and increases the chances of being a self-employed farmer. These effects persist even ten years after the start of the labor career and differ depending on the social origin of individuals. The effects on the chances of being unemployed are only observed for individuals of lower social origin. Higher unemployment rates at the beginning of their careers also make these individuals much less likely to have their own business compared to those of higher social origin. In contrast, the effect of early unemployment rates on the increased likelihood of being a farmer is more pronounced among individuals of high social origin.

KEYWORDS

social origin, unemployment, scarring effect, Latin America

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Cicatrices Profundas: Los impactos desiguales del desempleo en América Latina

Guillermo Alves¹ | Joaquín Varvasino²

¹Economista Principal. Dirección de Investigaciones Socioeconómicas. CAF - Banco de Desarrollo de América Latina galves@caf.com

²Estudiante de Doctorado, Universidad Pompeu Fabra. joaquinvarvasino@hotmail.com

Este trabajo analiza los impactos del desempleo al momento de comenzar la carrera laboral sobre los resultados laborales de corto, mediano y largo plazo de los latinoamericanos según su origen socioeconómico. Con datos de Latinobarómetro para 18 países, se encuentran impactos negativos sobre la probabilidad de estar desempleado y de ser dueño de un negocio no agropecuario y un impacto al alza sobre la probabilidad de trabajar como dueño de un negocio agropecuario. Estos efectos persisten hasta luego de 10 años de comenzada la carrera laboral y son muy diferentes según el origen socioeconómico de los individuos. Los impactos negativos sobre el desempleo se observan solo en individuos de origen socioeconómico bajo y el impacto en la probabilidad de ser dueño de un negocio no agropecuario son más intensos en estos individuos en comparación con los de origen más alto. El impacto en la mayor probabilidad de trabajar en un negocio rural, en cambio, es más pronunciado entre los individuos de origen socioeconómico más alto.

KEYWORDS

Desempleo, Desigualdad, Origen social, Movilidad

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1 | INTRODUCTION

An extensive empirical literature shows that labor market entrants fare worse during recessions and that entering the labor market during a recession has negative consequences in the medium and long term. Those scarring effects could be particularly pronounced among workers from less-advantaged socio-economic origins. There is evidence for developed countries that those from less advantaged family backgrounds who graduate in a recession are more likely to become unemployed, work part-time, and earn less than students from more advantaged families (Bailey and Dynarski, 2011; Crawford, 2014; Macmillan et al., 2015; Oreopoulos et al., 2012; Kaila et al., 2021; Del Bono and Morando, 2021).

Scarring effects could be quantitatively more important and qualitatively different in developing countries compared to developed ones (Naidoo et al., 2015; Petreski et al., 2017; Berniell et al., 2022). Quantitatively, macroeconomic instability and weaker social protection systems could make scarring effects more pronounced. This is especially relevant for Latin America, given the region's history of frequent macroeconomic crises and high inequality. Qualitatively, earlier stages of development are characterized by lower urbanization and limited financial markets, and this opens the scope of outcomes that can subject to scarring effects, including urban-rural migration decisions and business ownership.

This paper studies scarring effects in Latin America with an emphasis on differences in the socioeconomic origin of individuals. The data comes from Latinobarómetro, an annual survey that covered 18 countries between 1998 and 2018, collecting around 20,000 observations each year. Critically for the objectives of our study, the survey includes information on the level of education of workers' parents and on the year in which individuals finished their formal education. We take that year as the time in which individuals begin their labor market careers.

Our methodology is similar to the one used in the previous literature on scarring effects and consists in exploiting the variation in the unemployment faced by different cohorts (Kahn, 2010; Schwandt and von Wachter, 2020; Arellano-Bover, 2020). We pool the data on all countries and years and include country-year fixed effects to exploit within-country variation across cohorts. We further control for individuals' age, gender, level of education, and by the education level of their parents. The identifying variation thus comes from different cohorts within each country facing heterogeneous unemployment conditions when they enter the labor market. Using unemployment data starting in 1991, we can estimate effects up to more than 20 years after individuals began their labor market careers.

In terms of results, we provide the first evidence for developing countries on the persistent negative effects of initial unemployment conditions on subsequent unemployment. Importantly, we only observe these effects for individuals of low social origin. An increase of a standard deviation in the unemployment rate leads to a 1.5 higher probability of unemployment 1 to 10 years later. This magnitude amounts to around 10% of the average youth unemployment in this period. The impact falls to 0.9 percentage points after ten years but stays statistically significant.

We further find persistent effects of unemployment on two variables that could hamper structural transformation. First, high unemployment at the beginning of the labor market career lowers the probability that individuals become business owners, but only among those of low social origin. This finding highlights a potentially negative interaction between inequality and development, which could be related to limited financial systems restricting the access to credit of individuals with low wealth. Second, we find that initial unemployment increases the chances that individuals from all backgrounds stay as farmers instead of migrating to cities. A plausible hypothesis behind this finding is that higher unemployment, an inherently urban phenomenon, decreases the attractiveness of urban occupations, thus

delaying transitions from rural to urban activities. The effects are larger for individuals from a high social origin, who may have a higher opportunity cost of rural-urban migration related, for instance, to owning rural land.

The paper expands on the literature on the scarring effects of macroeconomic events at the beginning of the labor market career. There is plenty of documentation analyzing the long-term decline associated with entering the labor market during a recession (Oreopoulos et al., 2012; Von Wachter, 2020). There is much less evidence on scarring effects in developing countries, including Latin America (González-Velosa et al., 2012; Berniell et al., 2022). The paper also contributes to a small but growing literature on heterogeneous scarring effect by social origin (Del Bono and Morando, 2021; Kaila et al., 2021). As noted above, this literature is almost entirely focused on developing countries (Petreski et al., 2017).

The remainder of the paper is structured as follows. Section 2 explains the data sources and the empirical methodology. Section 3 presents descriptive statistics on the main variables and Section 4 the main results. Section 5 concludes.

2 | DATA AND EMPIRICAL STRATEGY

2.1 | Data

The main source of data in the paper is the Latinobarómetro survey. From this dataset, we obtain individuals' information such as age, sex, education, and labor variables such as participation, unemployment, and type of occupation (professional, employee, self-employed farmer, self-employed informal worker, or owner). We focus on individuals who were between 18 to 55 years old from 1998 to 2018 in Argentina, Brazil, Bolivia, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, and Venezuela. Our main independent variable is the national youth unemployment rate. We take this variable from the database of the International Labor Organization (ILO). ILO provides the unemployment rate for 15-24 years olds separately by gender.

Latinobarómetro has two variables that are not common in other databases, and this makes it the best data source for our objectives. First, the survey asks individuals about how old they were in their final year of formal education. We use this question to define the starting point of individuals' labor market careers. This implies assuming the person enters the labor market the same year she finishes studying. Second, Latinobarómetro has information on the maximum level of education reached by an individual's parents, which is our measure of individuals' social origin.

The variable that captures the final year of education has a set of issues that we address in several ways. A first issue is that some individuals give a year that is not reasonable given their age and level of schooling. We fix this by building a set of plausible intervals for each level of schooling and then requiring that the final value of the variable falls within the corresponding interval. If the answer falls outside the interval, we assign the minimum of the interval when it falls below and the maximum when it falls above. These intervals are [16;20] for individuals with incomplete or complete secondary, [17;25] for individuals with incomplete superior studies, and [18;28] for superior education completed. For those with less than complete primary, we define 16 years old as the starting age of their labor careers. The second issue are the missing values in this variable. In those cases, we assign the median age of school completion in the country and education level of the individual. For example, if an Argentinian who finished his tertiary education does not answer the question, we assign him 25, which is the median age among Argentinians with tertiary education. This replacement then depends on the country and the level of education obtained by the

individual.

In total, around 45% of the population had an odd or missing answer in the variable indicating year of education. Thus, the two imputations described in the previous paragraph are a first-order feature of our methodology. In Section 4.2.4, we show that our results are robust to alternative imputation decisions on the odd and missing values. In Table A1, we show the minimum, mean, and maximum age of entering the labor market for each level of education after implementing all the imputations.

2.2 | Empirical Strategy

The empirical strategy consists in estimating the following equation:

$$Y_{ict} = \alpha + \beta * UR_{ic}^0 + \gamma * X_{ict} + \delta_{ct} + \epsilon_{ict} \quad (1)$$

Where Y_{ict} is the labor outcome of individual i in country c at the time the survey was conducted t . UR_{ic}^0 is the youth rate of unemployment at the time the individual finished her education and X_{ict} is a set of binary variables indicating sex, potential years of experience, seven levels of education, and the same seven levels of education for the maximum reached by her parents. δ_{it} are country-year fixed effects. Errors ϵ_{ict} are clustered at the country-year level to account for serial correlation coming from contemporary shocks to each country's labor market. The Y_{ict} outcomes are binary variables indicating unemployment, being a business owner, and being a farmer.

The paper's main objective is to analyze the heterogeneous impact of macroeconomic events depending on the socio-economic origin of the individual, as proxied by her parents' education. We thus estimate the following equation interacting the unemployment rate with a single binary variable summarizing parental level of education:

$$Y_{ict} = \alpha + \sum_j \beta_j * [UR_{ic}^0 * ParentEducation_{ict}] + \gamma * X_{ict} + \delta_{ct} + \epsilon_{ict} \quad (2)$$

Across the paper, we define low level of education as having reached, at most, incomplete secondary school.

3 | DESCRIPTIVE STATISTICS

Table A2 presents some summary statistics on the youth unemployment rate, our independent variable. The table shows a huge variation in unemployment rates both within and between countries and between men and women. Argentina had some of the most extreme unemployment rates in our period of analysis, with minimums of 14.2 and 14.9 and maximums of 40.1 and 45.9, for men and women respectively. The range of unemployment rates for this country then was 25.9 for men and 31.0 for women. The average range between minimum and maximum across all countries in the dataset is 12.1 for men and 15.3 for women. The lowest unemployment rates were observed in Bolivia, with 2.5 for men and 4.5 for women. In general, unemployment rates are higher for women than men, except for El Salvador and Perú. The average difference between men's and women's unemployment is five percentage points.

Table A3 presents some descriptive statistics about our sample population. The sample features slightly more men than women and an average age of 37.5 years. In terms of

education, around 60% of the sample has a low level, with Chile and Peru having the lowest shares of individuals with low education. In terms of parental education, the average share with low level reaches almost 80%. This is consistent with the huge expansion in education achievement in the region occurred in the last few decades (CAF, 2022). The countries with less educated parents are Guatemala, El Salvador, and Honduras, and the countries with a lower share of low-educated parents are Chile and Peru.

A final piece of descriptive evidence is in Table A4, which shows the differences in labor outcomes between individuals of different socioeconomic origins. Differences are almost inexistent in labor participation, unemployment rate, and employment rate. However, there are huge differences in occupations between workers of low and high social origin. For instance, the probability of being a professional is 1.9% for workers of low social origin versus 7.1% for those from a high position. Having educated parents also decreases the chances of being a farmer (from 8.6% to 1.2%) and an informal worker (from 34.1% to 20.4%), compared with those with less educated parents.

4 | RESULTS

Table A5 presents the paper's main results. These results are the impacts of the unemployment rate at the time of individuals' entrance into the labor market on their unemployment, probability of being a business owner, and probability of being a farmer. These three effects are, in turn, calculated for the short (1 to 5 years), medium (6 to 10 years), and long run (more than years). Most importantly, we estimate these effects separately for individuals of low and high social origin.

Starting with the effects on unemployment, downturns cause a delayed entry to employment, which may have long-term effects on employment or earnings. The long-term effect might result from skill atrophy, negative effects on motivation, or stigma effects from employers (Borland, 2020). Consistent with the previous literature, we effectively find a scarring effect on unemployment. However, we only observe it for those of low social origin. Specifically, an additional percentage point of the unemployment rate at the time of entrance to the labor market increases the probability that those of lower origin are unemployed by 0.2 points in the short and medium run and by 0.1 points in the long run.

In terms of the probability of being a business owner, two main hypotheses are susceptible to being tested, and the two point in opposite directions. The first hypothesis claims that distressed labor markets push some to pursue entrepreneurship by reducing the opportunity cost of engaging in entrepreneurial activities (Hacamo and Kleiner, 2022). The second hypothesis states that economic downturns make it more difficult to access the financial sources needed to start a business, thus reducing business creation among individuals who faced a recession at the start of their labor market careers.

In Table A5 we find evidence of the second hypothesis. In Latin America, higher unemployment at the beginning of the labor career decreases the probability of individuals becoming business owners later on. This result is the opposite of Hacamo and Kleiner (2022), who find that graduating from college during high unemployment increases entry to entrepreneurship. Although our negative effects seem to hold for individuals of both low and high social origin, the effects are stronger among the former. In terms of their time structure, the effects show a convex curve. They are always negative but more pronounced in the medium than in the short and long term.

In terms of the probability of being a farmer, the marginal agents taking these decisions are those living in rural areas or small towns. For those, the decision to be a farmer is closely tied to moving or not to a city to find a better-paying job. When the unemployment rate

increases at the time of entering the labor market, the potential benefit of moving to the city decreases, and some individuals could decide to stay in the countryside to work in jobs like a farmer. The results in Table A5 indicate that this story could hold in Latin America but its intensity depends on the social origin of individuals. Higher unemployment at the time of labor market entrance increases the probability of being a farmer in the short, medium, and long run for individuals of both low and high social origins but it is much stronger among the latter. The magnitudes of these effects are immense. On average, a five-point increase in the unemployment rate causes an increase in the probability of being a farmer by 119%. The fact that these effects persist in the long run is consistent with the hypothesis that unemployment makes workers take a lifelong decision to stay in the countryside and not move to the city.

4.1 | Mechanisms

Parents may affect the labor outcomes of their offspring by a variety of mechanisms. One prominent mechanism which we can test for is the role of human capital transmission. We indirectly test for this by looking at the effects of the unemployment rate on our three outcomes separately for individuals with low and high level of education. If the intergenerational transmission of human capital in the form of higher education attainment is the main mechanism, we should see no effects for those individuals who achieved a high level of formal education and had parents with low level of education.

Tables A6, A7 and A8 estimate the same regression as Table A5, but conditioning on individuals' education. We observe that the impact of the unemployment rate at the time of entrance into the labor market is higher for low-educated individuals, and this difference is statistically significant. This result aligns with the hypothesis that human capital can make you resilient to scarring effects. Besides that, we find that having highly educated parents is important for both low and highly-educated individuals. This means that the scarring effect is larger for low-educated individuals, but parental education alleviates the scarring effect for all individuals despite their education level. This suggests that alternative mechanisms, such as the role of recommendations and social networks, play a role beyond human capital transmission.

Table A7 shows a similar pattern for the probability of being an owner. The effect is only significant in educated individuals and parental education matters independently of the education level reached by the individual. This result is consistent with the low social origin conditioning individuals' chances of acquiring the capital needed to start a business.

In terms of the probability of being a farmer, our results above could be explained by differences in the opportunity cost of rural-urban migration between low and high status individuals, for example due to differences in land endowments. For those well-off, the possibility of benefiting from their family's rural properties could make rural life relatively more desirable, while those from a rural low-status background may not have much to lose by leaving their rural town. Importantly, in Table A8 we find that the biggest scarring effect applies to low-educated individuals from high social origin. The effect on low-educated individuals is 0.189 among those of low social origin and 0.456 among those of high social origin. These low-educated individuals from high-social origin are probably the ones that face the highest relative opportunity cost of moving in contexts of high unemployment.

4.2 | Robustness

4.2.1 | Multiple Hypothesis Testing

Table A5 presents results for three different outcome variables, three periods, and two types of individuals. If we tested the hypotheses that the coefficients are equal to zero one by one, there would be a high probability of one or more false rejections. Even beyond those three outcomes, we explored impacts on other labor market results, such as participation rate, informality, and employment as a professional. We thus implement standard tests to adjust for multiple testing. All the coefficients shown in Table A5 survive the joint test of all the multiple hypotheses. We also find robust effects on the labor participation of women, as reported by [Berniell et al. \(2022\)](#). These results on multiple hypotheses testing are available from the authors upon request.

4.2.2 | Migration

A causal interpretation of the coefficient estimates requires that the unemployment rate at labor market entry does not affect any other determinant of our variables of interest. One of the potential threats to internal validity is migration: individuals may respond to labor market conditions by moving to a different labor market. As explained by [Von Wachter \(2020\)](#), individuals may respond to adverse labor market conditions by moving to a different local labor market. This concern is less serious for a country-level design as ours than for within-country designs. Nevertheless, we run a robustness exercise to check for this issue.

Latinobarómetro asks between 2007 and 2017 about citizenship status. For this subset of years we can thus estimate a regression including only individuals that are citizens of the country they live in. Although some long-term migrants could be citizens, this exercise excludes both short and medium-term migrants. Even among long-term migrants, some of them may not choose or not have all the prerequisites to apply for citizenship. Table A9 shows that the main results are robust to excluding non-citizens.

4.2.3 | Endogeneity of entrance age

Another threat to our results refers to the potential impact of the unemployment rate on the age of school completion, which we assume is also the age of entry into the labor market. Individuals who face a higher unemployment rate could advance or delay the decision to enter the labor market. If this happened, the unemployment rate at the time of entry would not be orthogonal to the unobserved determinants of each outcome, thus biasing our results.

We address this issue by first directly testing if the unemployment rate affects the age of school completion in our sample. We do it by estimating our main equation with the age of school completion as the outcome and the unemployment rate computed at 18 years old for every individual. As shown by [Berniell et al. \(2022\)](#), this is the age in which the big jump occurs in terms of participation in Latin America. In Table A10 we observe no effect of the unemployment rate on the age of finished education.

A second step we take to address these concerns is to control for a rich set of dummies capturing the maximum level of formal education attained by the individual. Finally, we further perform an additional robustness check following [Arellano-Bover \(2020\)](#). We repeat our main regression by using the school-entrance age and mandatory school duration in each country to obtain a “theoretical” graduation year for each cohort. This is, we replace the information of graduation year given by the individual with a proxy graduation year. Table A11 presents these results, which are similar to our main results in Table A5.

4.2.4 | School Completion Year Robustness

As explained in the data section, our variable on school completion year suffers from a series of limitations that we address with a set of imputations and corrections. We test if our results are robust to these methodological decisions. In a first specification, we replace the missing answers with the median age of school completion in his country and education level but we do not change answers when they falls outside of our pre-specified ranges. In a second specification, we do the opposite, thus editing the observations that fall outside our range but not modifying the missing values. The results from these robustness exercises are presented in [A12](#) and shows coefficients with the same sign and magnitude as our main specification.

4.2.5 | Cell-based Robustness

A final robustness exercise implements the common cell-based approach used by several other papers in the scarring effects literature ([Von Wachter, 2020](#); [Arellano-Bover, 2020](#); [Berniell et al., 2022](#)). This approach consists of collapsing the data by country, cohort of graduation, and calendar year, instead of using individual-level data. The results of implementing this cell-based approach in our context are shown in [Table A13](#) and are very similar to our individual-level results.

5 | CONCLUDING REMARKS

A growing literature in economics examines the impact of adverse macroeconomic events experienced in the past on different present outcomes of individuals. This paper provides new evidence on these types of effects, focusing on how they differ by socio-economic status. Using data from Latinobarómetro between 1998 and 2018, we find the presence of a scarring effect in the probability of being unemployed, the probability of being an owner of a firm, and the probability of being a self-employed farmer. The scarring effect on the probability of being a farmer is higher in individuals of high social origin, and the scarring effect on unemployment and the probability of being an owner only affects individuals with low educated parents. All of these effects persist even 10 years after individuals entered the labor market.

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A. APPENDIX OF TABLES AND FIGURES

TABLE A1 Average age of school completion

	Unedited			Edited		
	Min	Mean	Max	Min	Mean	Max
	Male	Female	Total	Male	Female	Total
Illiterate	17.8	16.7	17.2	16.0	16.0	16.0
Basic Incomplete	13.2	12.7	12.9	16.0	16.0	16.0
Basic Complete	14.3	14.0	14.2	16.0	16.0	16.0
Secondary Incomplete	17.1	16.9	17.0	17.2	17.1	17.1
Secondary Complete	19.0	18.8	18.9	18.3	18.2	18.22
Higher Educ. Incomplete	21.5	21.0	21.3	20.8	20.6	20.7
Higher Educ. Complete	24.4	23.9	24.2	23.9	23.3	23.6
Total	17.5	17.0	17.3	18.0	17.7	17.9

Source: Latinobarómetro.

TABLE A2 Unemployment Rate. 1991-2018

	Male			Female		
	Min	Mean	Max	Min	Mean	Max
Argentina	14.2	22.9	40.1	14.9	29.3	45.9
Bolivia	2.5	4.8	6.7	4.5	7.3	8.6
Brazil	9.9	14.7	25.7	14.0	22.0	33.2
Chile	9.2	16.5	23.5	11.5	22.8	31.5
Colombia	10.3	17.6	31.0	20.9	28.5	44.5
Costa Rica	6.9	13.9	28.4	9.5	20.1	36.8
Dominican Rep.	6.9	9.3	12.2	15.8	20.6	27.2
Ecuador	6.4	7.9	10.7	7.9	11.7	14.1
El Salvador	7.7	11.9	18.0	7.2	10.3	12.9
Guatemala	3.6	4.2	5.4	5.0	6.4	10.1
Honduras	4.2	6.3	9.3	6.1	11.6	21.2
Mexico	3.1	6.7	9.5	5.9	9.1	15.7
Nicaragua	5.4	9.3	11.2	9.2	13.4	16.8
Panama	4.9	6.5	10.4	8.4	11.0	17.5
Paraguay	7.2	10.7	13.2	11.6	17.9	22.6
Peru	5.4	8.1	9.7	6.1	8.1	9.6
Uruguay	14.9	21.1	34.1	22.0	30.3	46.0
Venezuela	11.4	15.2	23.4	11.2	21.4	35.8
Mean	7.4	11.5	17.9	10.7	16.8	25.0

Notes: Unemployment rate of individuals between 14 to 25 years old. Source: World Bank.

TABLE A3 Descriptive Statistics by country. 1998-2018

Country	Sex	Age	% Low	
			Low Educated	Educated Parent
Argentina	47.8	39.3	50.7	73.4
Bolivia	49.3	36.6	55.4	77.8
Brazil	48.0	38.7	67.1	86.4
Chile	45.5	39.8	38.9	61.9
Colombia	47.6	37.2	55.2	79.9
Costa Rica	48.9	37.2	71.4	82.6
Ecuador	49.3	37.3	53.8	79.0
El Salvador	48.0	37.2	71.1	87.8
Guatemala	48.7	35.8	78.8	90.8
Honduras	48.6	35.9	78.3	89.1
Mexico	48.9	37.2	54.9	74.7
Nicaragua	48.8	35.4	77.1	84.9
Panama	49.7	37.9	55.0	76.3
Paraguay	49.6	37.1	59.1	83.8
Peru	49.2	36.6	38.6	61.5
Dominican Rep.	49.7	36.8	68.5	81.0
Uruguay	46.4	40.2	66.4	79.8
Venezuela	47.8	37.7	52.4	77.1
Total	48.4	37.5	59.6	78.8

Notes: Low education is integrated by illiterate individuals, incomplete primary, complete primary and incomplete secondary.
Source: Latinobarómetro.

TABLE A4 Occupation Rate, Labor Supply and Unemployment by educational level of parents. 1998-2018

	Parent Education		
	Low	High	Total
Labor Participation	67.97	67.43	67.17
Unemployment Rate	9.66	9.50	9.58
Employment Rate	61.47	61.13	61.09
Prob. of being Professional	1.89	7.12	3.16
Prob. of being Employee	42.13	59.00	45.84
Prob. of being Owner	13.29	12.25	13.52
Prob. of being Farmer	8.58	1.16	6.46
Prob. of being Informal Worker	34.08	20.45	30.99

Notes: Low education is integrated by illiterate individuals, incomplete primary, complete primary and incomplete secondary.
High education consists of complete secondary, incomplete tertiary and complete tertiary studies. Source: Latinobarómetro.

TABLE A5 Effect of unemployment at the beginning of labor career on the probability of unemployment, being a business owner, and being a farmer

	Years	Unemployment	Business Owner	Farmer
<u>Low origin</u>				
	1-5	0.19*** (0.05)	-0.12*** (0.03)	0.10*** (0.03)
	6-10	0.18*** (0.04)	-0.16*** (0.03)	0.08*** (0.03)
	10+	0.11*** (0.04)	-0.09** (0.04)	0.07** (0.03)
<u>High origin</u>				
	1-5	-0.03 (0.05)	-0.04 (0.04)	0.27*** (0.03)
	6-10	0.01 (0.04)	-0.10** (0.04)	0.27*** (0.03)
	10+	-0.02 (0.04)	-0.02 (0.05)	0.29*** (0.03)
P-values low = high				
	1-5	0,00	0,02	0,06
	6-10	0,00	0,04	0,00
	10+	0,00	0,09	0,00
Observations		85920	75489	75489

Notes: The table shows coefficients β and the corresponding 95% confidence interval from OLS. Robust standard errors in parentheses. The set of controls consists of age, gender, own education, country fixed effects, calendar year fixed effect, experience fixed effects and parent education. Own education is a set of dummies of the following categories: "Analphabetic", "Incomplete Primary", "Complete Primary", "Incomplete Secondary", "Complete Secondary", "Incomplete Tertiary" and "Complete Tertiary". Parent education is a variable that shows the maximum educational level of the individual's parents, and takes two possible values: Low Education and High education. Low education is integrated by alphabets, incomplete primary, complete primary and incomplete secondary. High education consists of complete secondary, incomplete tertiary and complete tertiary studies. The asterisks indicate the statistical significance of the coefficient: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ Source: Latinobarómetro

TABLE A6 Impact of unemployment rate at the time of entrance on unemployment, conditioned on individual's education

	(1)	(2)	(3)	(4)
	Unemployment	Unemployment	Unemployment	Unemployment
Unemployment Rate Parent Education Low			0.155*** (0.0548)	0.144*** (0.0436)
Unemployment Rate Parent Education High			0.0831 (0.0795)	0.0139 (0.0420)
Unemployment Rate	0.143*** (0.0536)	0.0840** (0.0397)		
Observations	39,211	46,709	39,211	46,709
Individual Education	Low	High	Low	High
Test Low=High			0.306	0.000

Notes: The table shows coefficients β and the corresponding 95% confidence interval from OLS. Robust standard errors in parentheses. The set of controls consists of age, gender, own education, country fixed effects, calendar year fixed effect, experience fixed effects and parent education. Own education is a set of dummies of the following categories: "Analphabet", "Incomplete Primary", "Complete Primary", "Incomplete Secondary", "Complete Secondary", "Incomplete Tertiary" and "Complete Tertiary". Parent education is a variable that shows the maximum educational level of the individual's parents, and takes two possible values: Low Education and High education. Low education is integrated by alphabets, incomplete primary, complete primary and incomplete secondary. High education consists of complete secondary, incomplete tertiary and complete tertiary studies. The asterisks indicate the statistical significance of the coefficient: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ Source: Latinobarómetro

TABLE A7 Impact of unemployment rate at the time of entrance on the probability of being an owner, conditioned on individual's education

	(1)	(2)	(3)	(4)
	Owner	Owner	Owner	Owner
Unemployment Rate Parent Education Low			-0.085***	-0.136***
			(0.0486)	(0.0398)
Unemployment Rate Parent Education High			0.0148	-0.0557
			(0.0731)	(0.0392)
Unemployment Rate	-0.0689	-0.098**		
	(0.0582)	(0.0433)		
Observations	33,751	41,738	33,751	41,738
Individual Education	Low	High	Low	High
Test Low=High			0.097	0.017

Notes: The table shows coefficients β and the corresponding 95% confidence interval from OLS. Robust standard errors in parentheses. The set of controls consists of age, gender, own education, country fixed effects, calendar year fixed effect, experience fixed effects and parent education. Own education is a set of dummies of the following categories: "Analphabets", "Incomplete Primary", "Complete Primary", "Incomplete Secondary", "Complete Secondary", "Incomplete Tertiary" and "Complete Tertiary". Parent education is a variable that shows the maximum educational level of the individual's parents, and takes two possible values: Low Education and High education. Low education is integrated by alphabets, incomplete primary, complete primary and incomplete secondary. High education consists of complete secondary, incomplete tertiary and complete tertiary studies. The asterisks indicate the statistical significance of the coefficient: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ *Source:* Latinobarómetro

TABLE A8 Impact of unemployment rate at the time of entrance on the probability of being a farmer, conditioned on individual's education

	(1)	(2)	(3)	(4)
	Farmer	Farmer	Farmer	Farmer
Unemployment Rate Parent Education Low			0.189***	-0.001
			(0.0466)	(0.0166)
Unemployment Rate Parent Education High			0.456***	0.093***
			(0.0542)	(0.0180)
Unemployment Rate	0.233**	0.043**		
	(0.108)	(0.0214)		
Observations	33,751	41,738	33,751	41,738
Individual Education	Low	High	Low	High
Test Low=High			0.000	0.000

Notes: The table shows coefficients β and the corresponding 95% confidence interval from OLS. Robust standard errors in parentheses. The set of controls consists of age, gender, own education, country fixed effects, calendar year fixed effect, experience fixed effects and parent education. Own education is a set of dummies of the following categories: "Analphabetic", "Incomplete Primary", "Complete Primary", "Incomplete Secondary", "Complete Secondary", "Incomplete Tertiary" and "Complete Tertiary". Parent education is a variable that shows the maximum educational level of the individual's parents, and takes two possible values: Low Education and High education. Low education is integrated by alphabets, incomplete primary, complete primary and incomplete secondary. High education consists of complete secondary, incomplete tertiary and complete tertiary studies. The asterisks indicate the statistical significance of the coefficient: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ *Source:* Latinobarómetro

TABLE A9 Impact of unemployment rate at the time of entrance interacted with parents' education, filtered by migration status

	(1)	(2)	(3)
	Unemployed	Owner	SE - Farmer
Unemployment Rate Parent Education Low	0.172*** (0.0421)	-0.163*** (0.0461)	0.0945*** (0.0316)
Unemployment Rate Parent Education High	-0.0278 (0.0932)	-0.0906* (0.0116)	0.318*** (0.0564)
Observations	50,565	45,012	45,012
Test Low=High	0.000	0.075	0.000

Notes: The table shows coefficients β and the corresponding 95% confidence interval from OLS. Robust standard errors in parentheses. The set of controls consists of age, gender, own education, country fixed effects, calendar year fixed effect, experience fixed effects and parent education. Own education is a set of dummies of the following categories: "Analphabet", "Incomplete Primary", "Complete Primary", "Incomplete Secondary", "Complete Secondary", "Incomplete Tertiary" and "Complete Tertiary". Parent education is a variable that shows the maximum educational level of the individual's parents, and takes two possible values: Low Education and High education. Low education is integrated by analphabets, incomplete primary, complete primary and incomplete secondary. High education consists of complete secondary, incomplete tertiary and complete tertiary studies. The asterisks indicate the statistical significance of the coefficient: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ *Source:* Latinobarómetro

TABLE A10 Impact of unemployment rate at the time of entrance to the age of finished education

	(1)	(2)	(3)
Unemployment Rate	-0.0003 (0.0027)	-0.001 (0.0031)	0.002 (0.0028)
Observations	108,322	76,572	31,750
Group	All	Low Education	High Education

Notes: The table shows coefficients β and the corresponding 95% confidence interval from OLS. Robust standard errors in parentheses. The set of controls consists of age, gender, own education, country fixed effects, calendar year fixed effect, experience fixed effects and parent education. Own education is a set of dummies of the following categories: "Analphabet", "Incomplete Primary", "Complete Primary", "Incomplete Secondary", "Complete Secondary", "Incomplete Tertiary" and "Complete Tertiary". Parent education is a variable that shows the maximum educational level of the individual's parents, and takes two possible values: Low Education and High education. Low education is integrated by analphabets, incomplete primary, complete primary and incomplete secondary. High education consists of complete secondary, incomplete tertiary and complete tertiary studies. The asterisks indicate the statistical significance of the coefficient: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source: Latinobarómetro

TABLE A 11 Impact of unemployment rate at the time of entrance interacted with parents' education

	(1)	(2)	(3)
	Unemployed	Owner	Farmer
Unemployment Rate Parent Education Low	0.169*** (0.0305)	-0.089*** (0.0326)	0.0704*** (0.0236)
Unemployment Rate Parent Education High	-0.002 (0.0399)	-0.031 (0.0386)	0.286*** (0.0268)
Observations	82,548	72,604	72,604
Test Low=High	0.000	0.068	0.000

Notes: The table shows coefficients β and the corresponding 95% confidence interval from OLS. Robust standard errors in parentheses. The set of controls consists of age, gender, own education, country fixed effects, calendar year fixed effect, experience fixed effects and parent education. Own education is a set of dummies of the following categories: "Analphabetic", "Incomplete Primary", "Complete Primary", "Incomplete Secondary", "Complete Secondary", "Incomplete Tertiary" and "Complete Tertiary". Parent education is a variable that shows the maximum educational level of the individual's parents, and takes two possible values: Low Education and High education. Low education is integrated by alphabets, incomplete primary, complete primary and incomplete secondary. High education consists of complete secondary, incomplete tertiary and complete tertiary studies. The asterisks indicate the statistical significance of the coefficient: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

In this specification, we use the school-entrance age and school duration to proxy graduation year to calculate the year of entrance to the labor market.

Source: Latinobarómetro

TABLE A 12 Impact of unemployment rate at the time of entrance

	(1)	(2)	(3)
	Unemployed	Owner	SE - Farmer
Unemployment Rate /a	0.0529 (0.0336)	-0.068** (0.0311)	0.147*** (0.0232)
Unemployment Rate /b	0.108*** (0.0336)	-0.096*** (0.0321)	0.126*** (0.0212)

Notes: The table shows coefficients β and the corresponding 95% confidence interval from OLS. Robust standard errors in parentheses. The set of controls consists of age, gender, own education, country fixed effects, calendar year fixed effect, experience fixed effects and parent education. Own education is a set of dummies of the following categories: "Analphabetic", "Incomplete Primary", "Complete Primary", "Incomplete Secondary", "Complete Secondary", "Incomplete Tertiary" and "Complete Tertiary". Parent education is a variable that shows the maximum educational level of the individual's parents, and takes two possible values: Low Education and High education. Low education is integrated by alphabets, incomplete primary, complete primary and incomplete secondary. High education consists of complete secondary, incomplete tertiary and complete tertiary studies. The asterisks indicate the statistical significance of the coefficient: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

/a In this specification we replace the missing answers with the median age of school completion in his country and education level, but we do not create bounds of possible answers when the observation is odd.

/b In this specification we edit the odd observations with bounds of possible answers but we do not modify the missing information with the median age of school completion in his country and education level.

Source: Latinobarómetro

TABLE A13 Impact of unemployment rate at the time of entrance interacted with parents' education, cell-based regression

	(1)	(2)	(3)
	Unemployed	Owner	SE - Farmer
Unemployment Rate Parent Education Low	0.155*** (0.0364)	-0.120*** (0.0345)	0.0394* (0.0209)
Unemployment Rate Parent Education High	-0.0356 (0.0384)	-0.0393 (0.0375)	0.259*** (0.0237)
Observations	61,637	58,029	58,029
Test Low=High	0.000	0.009	0.122

Notes: The table shows coefficients β and the corresponding 95% confidence interval from OLS. Robust standard errors in parentheses. The set of controls consists of age, gender, own education, country fixed effects, calendar year fixed effect, experience fixed effects and parent education. Own education is a set of dummies of the following categories: "Analphabetic", "Incomplete Primary", "Complete Primary", "Incomplete Secondary", "Complete Secondary", "Incomplete Tertiary" and "Complete Tertiary". Parent education is a variable that shows the maximum educational level of the individual's parents, and takes two possible values: Low Education and High education. Low education is integrated by alphabets, incomplete primary, complete primary and incomplete secondary. High education consists of complete secondary, incomplete tertiary and complete tertiary studies. The asterisks indicate the statistical significance of the coefficient: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ *Source:* Latinobarómetro