Youth Labor Market Prospects in Times of Economic Recession in Brazil

By
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The article examines young people's labor market prospects in Brazil during the most recent economic recession (2014–2017). We draw on data from the Continuous National Household Sample Survey (PNAD Continua), between 2012 and 2017, to estimate both average labor market indicators over time and proportional hazard models of unemployment and underemployment. We find that youths' labor market prospects declined considerably over the period, and, as in many countries during economic downturns, young people were more affected than adults. The analysis shows that gender, race, and education impact the hazards of unemployment and underemployment among young Brazilians. Kaplan-Meier curves show that differences between white and African Brazilian youth, as well as between college-educated youth and high school graduates (or less), increased between 2016 and 2017, when economic activity was at its worst level.

Keywords: youth; labor market; economic recession; proportional hazard models; Brazil

A growing body of research, especially in developed economies, has shown that economic downturns tend to have a disproportional effect on youths' ability to keep or find a job, increasing their unemployment and underemployment levels at higher rates than those observed for adult workers (Bell and Blanchflower 2011; International Labour Organization [ILO] 2015; Mont'Alvao, Mortimer, and Johnson 2017). Little is known,

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however, about how young people fare in the labor market in developing economies and how economic downturns affect their work trajectories (Mont'Alvao and Johnson 2016). In this article, we examine how young people in Brazil, one of the largest developing countries, have navigated the labor market over the last few years, paying special attention to the effects of the most recent economic recession between 2014 and 2017.

The Brazilian labor market experienced major improvements during the first few years of the twenty-first century: consistent gross domestic product (GDP) growth, declining levels of unemployment and informality, along with rising wages, especially for the unskilled workers, leading to a decline in overall inequality (Kerstenetzky and Machado 2016; Firpo and Pieri 2018). For young workers, between 2001 and 2012, unemployment levels declined from 14.4 percent to 10.6 percent, and underemployment levels declined from 55.5 percent to 39.9 percent, according to data from the National Household Sample Survey (Pesquisa Nacional por Amostra Domiciliar or PNAD).[1] While these improvements created more favorable conditions for young people to transition to the labor market, including for those without advanced degrees, youth unemployment rates were 15 percent in 2012, compared to 6 percent for the whole labor force.

Since the onset of the recession, the GDP contracted approximately 8 percent; and overall unemployment rates jumped from 7 percent to historically high levels of 14 percent in 2017 (Firpo and Pieri 2018), affecting approximately 14 million workers. While this increasing precariousness in the labor market affected workers of all ages, little attention has been paid to young people's labor market trajectories during this recessionary period. In this article, we attempt to fill this gap by examining trends in labor market prospects for young people in Brazil during the most recent recession. Keeping in mind that labor market trajectories are defined by the interaction between individual characteristics and the local labor market structure (Sorensen 1974), the next two sections of this article discuss, respectively, how recessionary labor market conditions, and individual characteristics, such as skills and demographics, have influenced youths' labor market outcomes. We then discuss the longitudinal structure of our data and how they can contribute to a better understanding of labor market trajectories during economic recessions.

The Impact of Recessions on Young People's Labor Market Outcomes

While economic recessions may affect other important indicators of the transition to adulthood, such as living arrangements, access to higher education, and family formation (Crosnoe 2014; Mont'Alvao, Mortimer, and Johnson 2017), most research on the consequences of economic downturns for young people has focused on labor market outcomes.

Recessions affect labor market prospects and outcomes for all workers, but young people are usually the hardest hit. Young workers are more vulnerable

because they are still building their human capital and skills set and are more likely to hold temporary jobs in vulnerable industries. Studies have shown that, on average, their unemployment rates are three times higher than the rates for adult workers (ILO 2015), and the disproportional effect of economic downturns tends to widen this gap, leading to higher levels of unemployment, underemployment, informality, and idleness (or NEET; not in education, employment, or training) for them (Bell and Blanchflower 2011).

These negative effects of recessions on young people's socioeconomic outcomes may last even longer than the duration of the recession itself. By increasing their unemployment and underemployment spells, recessions hinder the acquisition of work experience and, consequently, the formation of human capital, which, in turn, have long-term consequences on employment patterns and earnings (Scarpetta, Sonnet, and Manfredi 2010). Studies in the United States, Japan, and Canada (Genda, Kondo, and Ohta 2010; Oreopoulos, von Wachter, and Heisz 2012), for example, found that youths who either graduated or entered the labor market during recessions had higher unemployment rates and lower wages 10 years later.

While recessions affect youth in all countries, differences in institutional arrangements may moderate their effects. The most important institutional arrangement that can moderate the effect of recessions on youth employment prospects is the link between the educational system and the labor market. In countries where the vocational component of education is stronger, such as in Germany, Austria, and the Netherlands, these structured links between the educational system and the labor market tend to buffer the negative effects of recession and lead to better employment prospects than in countries where these links are weak (Christopoulou and Ryan 2009; Green and Pensiero 2017).

Brazilian youth usually face a rough transition between school and the world of work, especially due to the lack of institutionalized bridges between the educational system and the labor market. Their ability to find and secure jobs is limited, leading to higher rates of unemployment and underemployment (informality) than for adult workers (Gonzalez 2009; Corseuil et al. 2014).

Inequalities in Young People's Outcomes in the Brazilian Labor Market

The informal sector has occupied a substantial proportion of the Brazilian and Latin American labor forces since at least the 1960s (see Portes and Schauffler [1993] for a discussion of competing theories on the emergence of informality in the region), and the careers of many young workers are permanently linked to this sector. Inequalities in educational pathways are important determinants of these trajectories. Cardoso (2016) points out that dropping out of school is a common characteristic of many informal self-employed workers in Brazil and that their careers can be summarized in a series of standardized steps: from school dropout to the first precarious job, then to adjustment of occupational

expectations, then to more precarious jobs, to self-employed. In turn, longer spells of underemployment and unemployment, especially for unskilled youths, have led to scarring effects in future wages (Cruces, Ham, and Viollaz 2012) and hindered their labor market trajectories in the long term (Corseuil, Franca, and Poloponsky 2016).

In general, unemployment, informality, and participation in the NEET group ("not in education, employment, or training") have been consistently higher for African Brazilians, women, and low-skilled youth (Matijascic and Silva 2016; Courseuil and Franca 2016). These inequalities have persisted, even though considerable improvements were observed during the first decade of this century, when the overall quality of the occupations held by young people improved considerably, unemployment and underemployment slowed down, and earnings increased for youth from all socioeconomic backgrounds and racial groups (Courseuil and Franca 2016). One important factor that contributed to these improvements was the expansion of higher education enrollments, as the proportion of youth between 18 and 24 years old pursuing college education more than doubled over the last 15 years—from 9 percent in 2001 to almost 20 percent currently, according to data from the National Household Sample Survey (PNAD).

Little is known, however, about how economic downturns have impacted youth prospects in the Brazilian labor market, especially regarding the period between 2014 and 2017, during which a new cycle of economic hardship imposed serious obstacles to Brazilian workers. Research in developed economies has shown that low-skilled youths are the hardest hit during periods of economic hardship (Mills and Blossfeld 2009; Christopoulou and Ryan 2009) and that a college education has a protective power for both privileged young workers and underprivileged young workers (Curry 2019).

Racial inequalities in youths occupational prospects also intensify during recessions, as young black workers (Hoynes, Miller, and Schaller 2012), especially young black women (Dozier 2012), face harder conditions to keep or find a job. Findings from experimental studies (Krosch and Amodio 2014), as well as national sample surveys (Johnston and Lordan 2014), show that during times of economic recession there is an increase in racial bias, which affects the allocation of resources for different racial groups, affecting black workers' prospects negatively. While studies in Brazil, as noted previously, indicate the existence of racial inequalities among young workers in the labor market, no research has shown whether economic cycles can inflate racial bias in the Brazilian labor market. We address this issue by relying in longitudinal data, discussed in the next section, to examine the trajectories of young workers in Brazil during the most recent recession.

Data Source

We draw upon data from the Continuous National Household Sample Survey (PNAD Continua), which collects information on labor market outcomes, as well as demographic and educational indicators, from more than two hundred

thousand households across the country, every trimester, since 2012. The survey is carried out by the Brazilian Institute of Geography and Statistics (IBGE) and combines a cross-sectional structure with a panel structure. Each household is interviewed once every trimester, for five trimesters, and is, simultaneously, part of the cross-sectional sample of the country population for each trimester, as well as part of a specific panel.

This complex structure allows us to estimate both average labor market indicators over time and statistical models for longitudinal data. We use two analytical samples. To depict trends in unemployment and underemployment indicators, our first sample comprises all youth in each trimester, between the first trimester of 2012 and third trimester of 2017. For the purposes of this article, we define young people as those between 18 and 29 years old.[2] This group comprises, approximately 11 percent of the population during the study period.

The second sample comprises only a panel of young people in the labor force interviewed by PNAD between the first trimester of 2016 and the first trimester of 2017. We chose this panel because economic activity and employment levels reached their worst indicators during this period, and we want to understand whether the worsening of the labor market conditions led to increasing inequalities in the hazards of unemployment and underemployment. Our samples comprise approximately 15,400 participants between 18 and 24 years old, and 11,300 participants between 25 and 29 years old, who were part of the labor force during the period of the study.

Measures

Here, we describe the variables used in our analyses.

Unemployment. This is a dichotomous variable coded 0 for those employed and 1 for those unemployed at each wave of data collection.

Underemployment. Defined as the lack of formal links (social security, retirement contributions, and other benefits, etc.) between employer and employee, this is also a dichotomous variable coded 0 for those formally employed and 1 for those informally employed at each wave of data collection.

Long-term unemployment. A dichotomous variable (0 = no, 1 = yes) indicating whether the unemployment spell, at the moment of the interview, was equal or more than 12 consecutive months (OECD 2007).

Participation in the labor force. A dichotomous variable (0 = no, 1 = yes) representing workers who are engaged in the labor market, either employed or unemployed.

Giving up on job search. This variable (0 = no, 1 = yes) indicates a worker who gave up on looking for jobs after long spells of unemployment.

Occupational status index. We use the International Socio-Economic Index (ISEI) of occupational status developed by Ganzeboom, De Graaf, and Treiman (1992), which ranges from a score of 10 to a score of 90, with higher scores indicating higher occupational status.

Work hours. The variable indicates the total number of hours worked per week.

Gender. This variable is coded as 0 for young men and 1 for young women.

Race. This variable is coded 0 for white youth and 1 for African Brazilian (black and brown) youth.

Age. We include binary variables for each age group as a control in our models.

Education. This is a dichotomous variable coded 0 for youth who achieved high school or less at the moment of the interview, and 1 for those who are enrolled or have graduated from college.

Geographical location. Used mostly as control variables, area is coded 0 for nonmetropolitan cities and 1 for metropolitan areas; and region of the country is a categorical variable coded 1 for north, 2 for northeast, 3 for southeast, 4 for south, and 5 for midwest.

Analytical Strategy

We present two sets of analyses. In the first, we analyze descriptive trends in labor market outcomes for both young workers (18–29) and adult workers (30–65). Sample sizes for these estimates range from 354,000 observations in the first trimester of 2012 to 364,000 participants in the third trimester of 2017, including both young and adult workers. Although the number of observations has a slight increase during the period, the proportion of young people in the whole population declines from 18.4 percent to 17.2 percent, as an expression of changes in the demographic composition of the Brazilian population. Analyses of this sample take into account expansion weights provided by the IBGE.

In the second set of analyses, proportional hazards models estimate the effects of race, gender, educational background, and geographical context (metropolitan areas and regions of the country) on the hazard of unemployment (model 1) and underemployment (model 2) for young workers. This class of models, also known as "survival analysis" or "event history analysis" (Allison 2014), measures the probability that an event of interest (usually called "failure") will occur during the time of the study. These models are widely used in epidemiological studies but can also be applied to a variety of social phenomena (Blossfeld, Hamerle, and Mayer 1989/2014), including the study of labor market trajectories (see, for example, Flinn and Heckman 1983; Blossfeld and Hamerle 1989). We use a Cox

proportional hazards model, a semiparametric model. Our goal is to understand inequalities in the hazards of unemployment and underemployment among youth, and this class of models allows us to estimate average effects over time for each predictor. We also use Kaplan-Meier estimators to visualize how our predictors affect labor market trajectories over time. These curves illustrate the cumulative proportion of young workers who continued ("survived") in the labor market during the period of the study. All models were estimated using the Stata *stcox* and *sts graph* commands, for the Cox models and the Kaplan-Meier curves, respectively (StataCorp LP 2013).

Because our dataset has multiple records for each individual (one for each trimester), the error structure is not independent; therefore, we use robust standard errors to account for this issue. Because of the complex nature of the data, many participants do not have information for all five waves of data collection, either because they did not participate in all waves or because they were not engaged in the labor force at some point of the study. In fact, 36 percent of the sample have five records, 14 percent have four records, and 50 percent have three or fewer records.

Findings

Descriptive statistics

Table 1 shows the descriptive statistics for the variables used in the survival models, separately by age group. The means of our dependent variables, unemployment and underemployment, indicate that approximately 42 percent of youth between 18 and 24 years old became unemployed at least once during the period, and 56 percent held informal jobs. For youth between 25 and 29 years old, the means are 26 percent and 48 percent, respectively.

The gender and racial compositions of the two samples are 46 percent and 47 percent of women, and 74 percent and 71 percent of nonwhites, respectively. Approximately 25 percent of those between 18 and 24 years old are either enrolled or have graduated from college; while among those between 25 and 29 years old, this proportion is 29 percent. More than 30 percent of young people, in both age groups, reside in metropolitan areas. Mean ages are 21 and 27, respectively.

Trends in youth labor market outcomes

As previously discussed, during the first decade of the twenty-first century, labor market prospects improved considerably for young workers in Brazil, when unemployment and underemployment rates reached their lowest marks ever, and their earnings increased substantially (Courseuil and Franca 2016). The recession, which started in late 2014, however, led to a reversal in this trend. Figures 1a through 1d show variations in unemployment, long-term unemployment, participation in the labor force, and giving up on job search, for youth and adults

TABLE 1
Descriptive Statistics

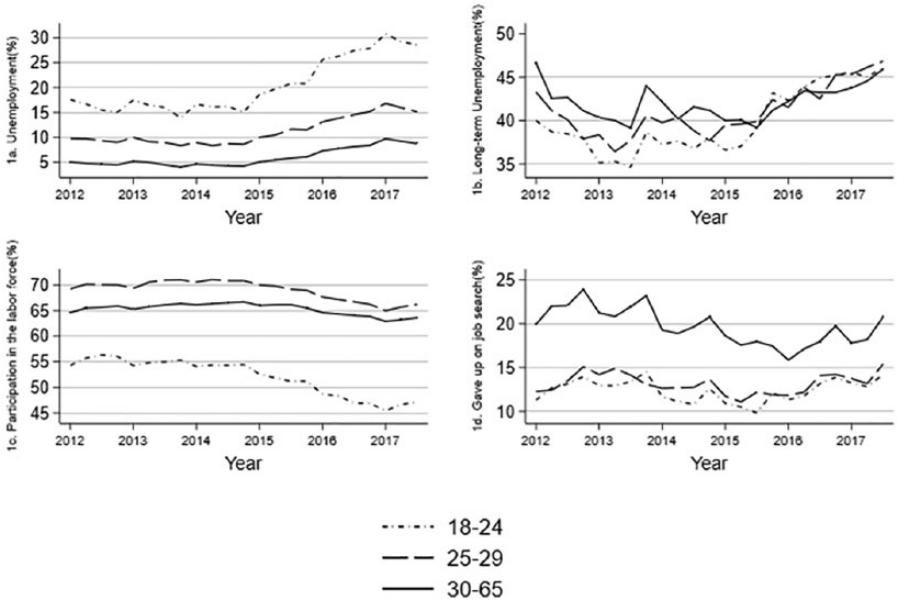
18–24 Years Old	Mean/Proportion	*SD*	Min.	Max.
Unemployment (yes = 1)	0.42	—	0	1
Underemployment (yes = 1)	0.56	—	0	1
Gender (women = 1)	0.46	—	0	1
Race (nonwhite = 1)	0.74	—	0	1
Education (college = 1)	0.25	—	0	1
Area (metropolitan = 1)	0.34	—	0	1
Region	2.77	—	1	5
Age	21.40	2.01	18	24
N		15,377		
25–29 Years Old	Mean	*SD*	Min.	Max.
Unemployment (yes = 1)	0.26	—	0	1
Underemployment (yes = 1)	0.48	—	0	1
Gender (women = 1)	0.47	—	0	1
Race (nonwhite = 1)	0.71	—	0	1
Education (college = 1)	0.29	—	0	1
Area (metropolitan = 1)	0.35	—	0	1
Region	2.76	—	1	5
Age	27.23	1.47	25	29
N		11,283		

between the first trimester of 2012 and the third trimester of 2017. Figure 1a shows that unemployment rates increased considerably during the recession, especially for young workers between 18 and 24 years of age. While the adult rates increased from less than 5 percent in early 2014 (the lowest rate in the series) to almost 10 percent in early 2017, for youth between 18 and 24 years old, unemployment rates went from 15 percent to 31 percent in the same period. Unemployment for young people between 25 and 29 years old increased from 10 percent to 16 percent in 2017.

Figure 1b shows that long-term unemployment has also increased steadily for all age groups, and that the three patterns converged at the end of the recession, reaching 45 percent in 2017. That is, while young people have higher unemployment rates, long-term unemployment rates have been very similar during the period.

Figure 1c shows that labor market participation has decreased for workers in all age groups, but more steeply for those between 18 and 24 years of age. Approximately 45 percent of young people in this age group are still in the labor force in 2017, compared to 55 percent in 2012. While the recession may have had an impact on labor force participation, it is important to take into account that there is a long-term trend leading to persistent declines in youth participation in the labor market, especially those in college, due especially to improvements in

FIGURE 1
Unemployment, Long-Term Unemployment, and Labor Market Participation among Brazilian Workers, 2012–2017



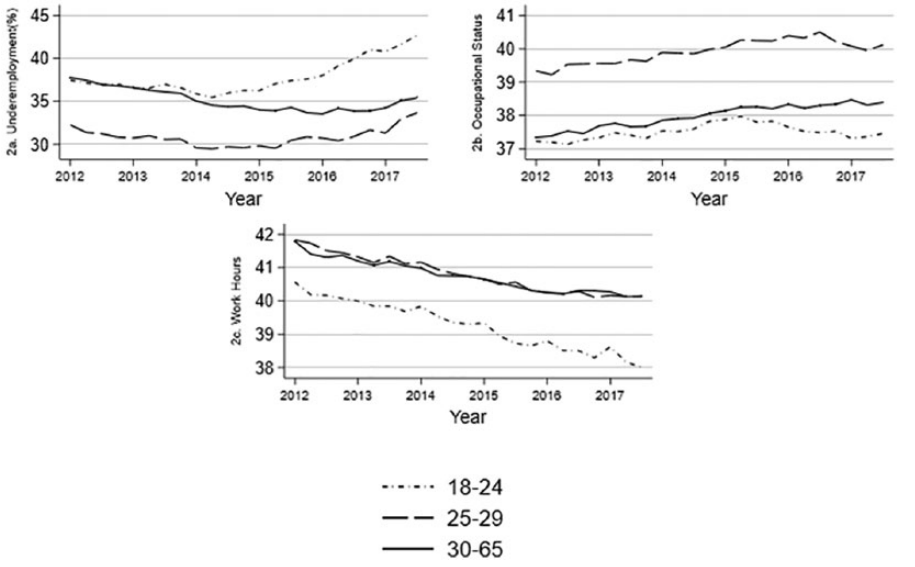
the educational system and in families' living conditions (Kerstenetsky and Machado 2016).

Figure 1d shows that the percentage of workers from all age groups who gave up on searching for a job (discouraged workers) after not being able to find one for a long time increased steadily since the onset of the recession. As long-term unemployment increased, so did the ranks of those who left the labor force.

Figures 2a through 2c show trends of underemployment (informal work), occupational status, and working hours for youths still employed. While Figure 1 provides evidence of youths' obstacles to secure a job, Figure 2a illustrates the quality of the occupations for those who found a way to remain employed. Figure 2a shows a very marked difference in underemployment trends between young workers and adults. Between 2012 and early 2014, informal work declines progressively, but at the onset of the recession, underemployment rates among young workers start to take on an increasing trajectory, whereas adult underemployment rates are relatively stable around 35 percent. The increasing rates are mostly accentuated among workers between 18 and 24 years of age, going from 36 percent in 2014 to 43 percent in 2017.

Figure 2b can be seen as a consequence of 2a: as the underemployment increases, the occupational status (weighted average of income and education for each occupation) of the jobs held by young workers tends to decline. The declines, however, were small, about 1 point in the ISEI scale, during the

FIGURE 2
Underemployment, Occupational Status, and Working Hours among Brazilian Workers, 2012–2017



recession. Taken together, Figures 2a and 2b show a complex pattern: while the ranks of young people employed in the informal sector increased markedly, the occupational status of the jobs held by young people during the recession did not change substantially. Young adults between 25 and 29 years of age held jobs with higher average occupational status than adults, which can be explained by their relatively higher educational attainment, and the fact that those who remained employed are those with higher educational credentials.

Figure 2c shows trends in working hours per week. It shows that adults work more hours than young people, and that working hours declined for workers in all age groups. Although the downward trend started before the recession, since the onset of the recession it is possible to depict a widening of the gap in work hours between youth (18 to 24 years old) and older workers.

Overall, these figures show how the recession affects youths and adults differently, but also show distinct patterns between younger workers (between 18 and 24 years of age), who were especially hard hit, and young adults (between 25 and 29 years of age), which prompt us to separate the two categories in the proportional hazard models, discussed in the next section.

Proportional hazard models

Proportional hazard models measure the probability that an event will occur during a specific period of time. In our models, we estimate the probability that

young Brazilians in the labor force will experience unemployment during the most recent economic downturn (2016–2017). Table 2 shows results from these models estimating the effect of gender, race, schooling, age, and geographical location (metropolitan areas and regions of the country) on the hazards of unemployment among Brazilian youth. Based on marked differences in trends observed in the previous section, we estimate separate models for youth between 18 and 24 years old (model 1) and those between 25 and 29 years old (model 2). All coefficients of interest are statistically significant.

In model 1, the hazard ratio for gender is 1.324, which means that the hazard of unemployment for women is 1.324 times the hazard of unemployment for men, that is, women have a hazard of unemployment that is 32.4 percent ([*hazard ratio-1*]**100*) higher than the hazard for men. Among older youth (model 2), women's hazard is even more accentuated, 44.8 percent higher than the hazard for men.

Race and educational credentials are also important predictors of the hazards of unemployment. Among younger youths, the hazard of unemployment is 9.2 percent higher for African Brazilians, and among older youth the hazard is 19.2 percent. College educated youth are less likely to be unemployed: their hazard of unemployment is 16.2 percent lower among younger youth, and 20.4 percent among those aged between 25 and 29 years old. Hazard ratios for geographical context show that youths in metropolitan areas have a higher hazard of unemployment (26 percent and 23 percent) than youths living in smaller cities, or rural areas.

Table 3 shows the hazard ratios of youth underemployment. The hazard of underemployment is lower for young women (44 percent lower) than for young men. Thus, while young women have higher hazards of unemployment, they have lower hazards of underemployment. College-educated youth (25 percent and 34 percent, respectively), and those living in metropolitan areas (20 percent and 16 percent, respectively) also have lower hazards. For African Brazilian youth, the hazard is 7 percent higher, among 18- to 24-year-old workers, and 10 percent higher among 25- to 29-year-olds than the hazard for white youth. It is important to note that the models in Table 3 capture the movement from formal employment to informal work, but not from unemployment to informal work.

Figures 3 to 5 plot the Kaplan-Meier estimates for the hazards of unemployment and underemployment according to gender, race, and education, respectively. The figures show the probability of survival in the labor market, for each category, at each wave of data collection. From wave 1 to wave 5, the probability of staying employed decreases for all categories, but they also show different probabilities for each category: as economic activity and labor market indicators become worse, the gap in the probability of employment between men and women, white and nonwhite, and college-educated and less-educated youths becomes wider.

The Kaplan-Meier estimates for the hazards of underemployment show similar trends, except for a reversed effect of gender. Different from the unemployment gap, men have increasingly lower chances of holding formal jobs than women. Black youth and those with lower educational credentials have

TABLE 2
Proportional Hazard Models of Youth Unemployment

Model 1: 18 to 24 Years Old				Model 2: 25 to 29 Years Old			
Parameters	Hazard Ratio	Robust *SE*	*P>z*	Parameters	Hazard Ratio	Robust *SE*	*P>z*
Gender (women = 1)	1.324	0.031	.000	Gender (women = 1)	1.448	0.054	.000
Race (nonwhite = 1)	1.092	0.030	.002	Race (nonwhite = 1)	1.192	0.051	.000
Education (college = 1)	0.838	0.028	.000	Education (college = 1)	0.796	0.037	.000
Area (metropolitan = 1)	1.256	0.031	.000	Area (metropolitan = 1)	1.233	0.047	.000
Region (Reference = North)				Region (Reference = North)			
Northeast	1.100	0.039	.008	Northeast	1.126	0.062	.030
Southeast	1.028	0.040	.472	Southeast	1.015	0.060	.798
South	0.725	0.036	.000	South	0.637	0.050	.000
Midwest	0.841	0.041	.000	Midwest	0.752	0.058	.000
Age (Reference = 18)				Age (Reference = 25)			
19	1.026	0.038	.488	26	1.155	0.061	.007
20	0.825	0.033	.000	27	1.045	0.057	.416
21	0.796	0.032	.000	28	0.857	0.048	.006
22	0.698	0.029	.000	29	0.907	0.051	.084
23	0.622	0.027	.000				
24	0.612	0.027	.000				

increasingly lower chances of holding a formal job as the crisis intensifies, compared to white and college-educated youths, respectively.

Discussion

Economic downturns disproportionally affect young people's labor market prospects, and the most recent economic recession has harshly affected Brazilian youths' work trajectories, with pronounced increases in unemployment rates and long-term unemployment rates and decreasing levels of participation in the labor market. Underemployment rates were even more accentuated, indicating that in a volatile labor market, youths who can remain employed are usually more likely than adults to hold bad jobs.

Findings from our survival models indicate that race, gender, and education are important predictors of the hazards of unemployment and underemployment among young workers. Young women and nonwhite youths have higher hazards of unemployment, along with those who did not pursue a college education. Young women, although having higher hazards of unemployment than young men, have lower hazards of underemployment. Kaplan-Meier curves showed

TABLE 3
Proportional Hazard Model of Youth Underemployment

Model 1: 18 to 24 Years Old				Model 2: 25 to 29 Years Old			
Parameters	Hazard Ratio	Robust *SE*	*P>z*	Parameters	Hazard Ratio	Robust *SE*	*P>z*
Gender (women = 1)	0.561	0.014	.000	Gender (women = 1)	0.561	0.016	.000
Race (nonwhite = 1)	1.071	0.029	.011	Race (nonwhite = 1)	1.104	0.036	.002
Education (college = 1)	0.747	0.025	.000	Education (college = 1)	0.660	0.026	.000
Area (metropolitan = 1)	0.804	0.021	.000	Area (metropolitan = 1)	0.844	0.026	.000
Region (Reference = North)				Region (Reference = North)			
Northeast	1.151	0.038	.000	Northeast	1.042	0.039	.278
Southeast	0.917	0.036	.025	Southeast	0.723	0.033	.000
South	0.757	0.036	.000	South	0.640	0.035	.000
Midwest	1.000	0.045	.998	Midwest	0.810	0.043	.000
Age (Reference = 18)				Age (Reference = 25)			
19	1.286	0.053	.000	26	1.138	0.047	.002
20	1.450	0.059	.000	27	1.173	0.049	.000
21	1.424	0.059	.000	28	1.213	0.049	.000
22	1.553	0.063	.000	29	1.225	0.051	.000
23	1.476	0.062	.000				
24	1.465	0.062	.000				

FIGURE 3
Kaplan-Meier Survival Estimates for Gender Differences in the Hazard of Unemployment and Underemployment

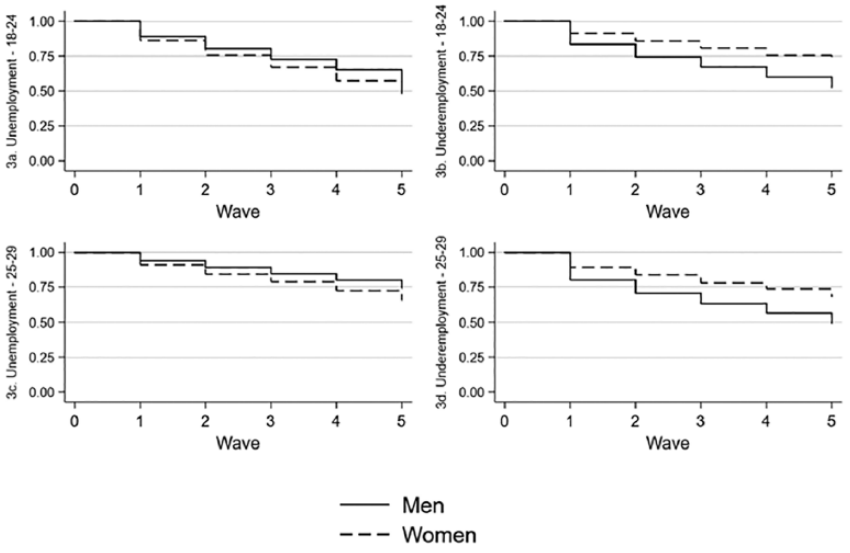


FIGURE 4
Kaplan-Meier Survival Estimates for Race Differences in the Hazard of Unemployment and Underemployment

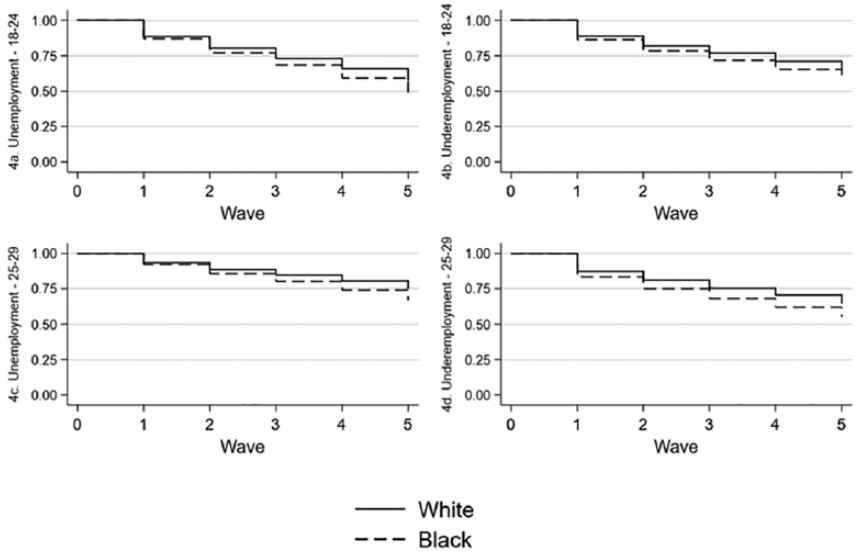
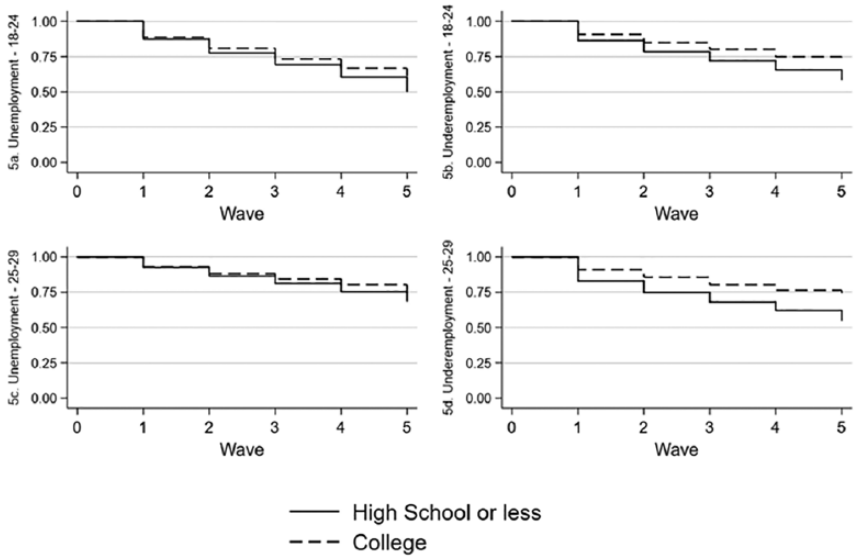


FIGURE 5
Kaplan-Meier Survival Estimates for Education Differences in the Hazard of Unemployment and Underemployment



that as economic activity and labor market indicators became worse, racial, educational, and gender differences in the hazards of unemployment and underemployment among youths increased considerably.

Racial differences in the hazards of unemployment and underemployment, no matter the educational background, reproduce trends observed among adult workers, and indicate discrimination in hiring and firing policies. Simultaneously, the increasing effect of race as economic activity becomes lower shows not only that decision-makers take race into account as a factor to dismiss workers, but also that this racial bias intensifies as economic activity decreases, leading to growing racial inequalities in the labor market. And a college education was protective against unemployment and underemployment for all workers.

The study, however, is not without limitations. First, because we opted for a broad analysis of labor market trajectories, we did not analyze the specific types of jobs lost or held by young workers during the recession. Second, our analyses would benefit from having a consistent indicator for rural areas (there is no variable for rural areas in the currently available PNAD Continua datasets), where underemployment is even more pronounced than in urban and metropolitan areas. Future studies, however, should take these limitations into account to offer a more complete picture of youth labor market trajectories in Brazil. Further research should also examine a longer period, maybe incorporating multiple panels from PNAD Continua. While our 15-month analysis allows us to estimate short-term trajectories, a longer period would allow researchers to better understand how the recession impacted youths' trajectories in the long run.

Future research should also pay more attention to the role of public policies, or the lack thereof, that affect Brazilian youths' plight in the labor market. For example, the expansion of policies designed to strengthen the links between schools and the labor market, such as federal technical high schools and colleges—called Federal Centers for Technological Education (CEFET)—could provide a smoother transition to the labor market for many young workers. Also, the expansion of initiatives to guarantee that young African Brazilian workers have the same employment opportunities as their white counterparts could play an important role in providing a more egalitarian transition for young people. Finally, further research should consider how changes in both the demographic structure (such as the shrinking size of the youth population) and the socioeconomic structure (for example, the increasing proportion of college-educated youths) of the population could affect youths' socioeconomic pathways.

Notes

1. Estimates based on PNAD microdata. Available from https://www.ibge.gov.br/estatisticas/sociais/educacao/9127-pesquisa-nacional-por-amostra-de-domicilios.html?=&t=microdados (accessed 15 October 2018).

2. We do not include adolescents between 14 and 17 years old in our analyses. Although they are legally allowed to work, they must only work as part-time apprentices, not as full-time workers, and as such, unemployment statistics may not be reliable labor market indicators for this age group.

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