

# The behaviour of the Brazilian labour market across two recessions: An analysis of the period 2015-2017 and the COVID-19 pandemic<sup>1</sup>

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## 1 Introduction

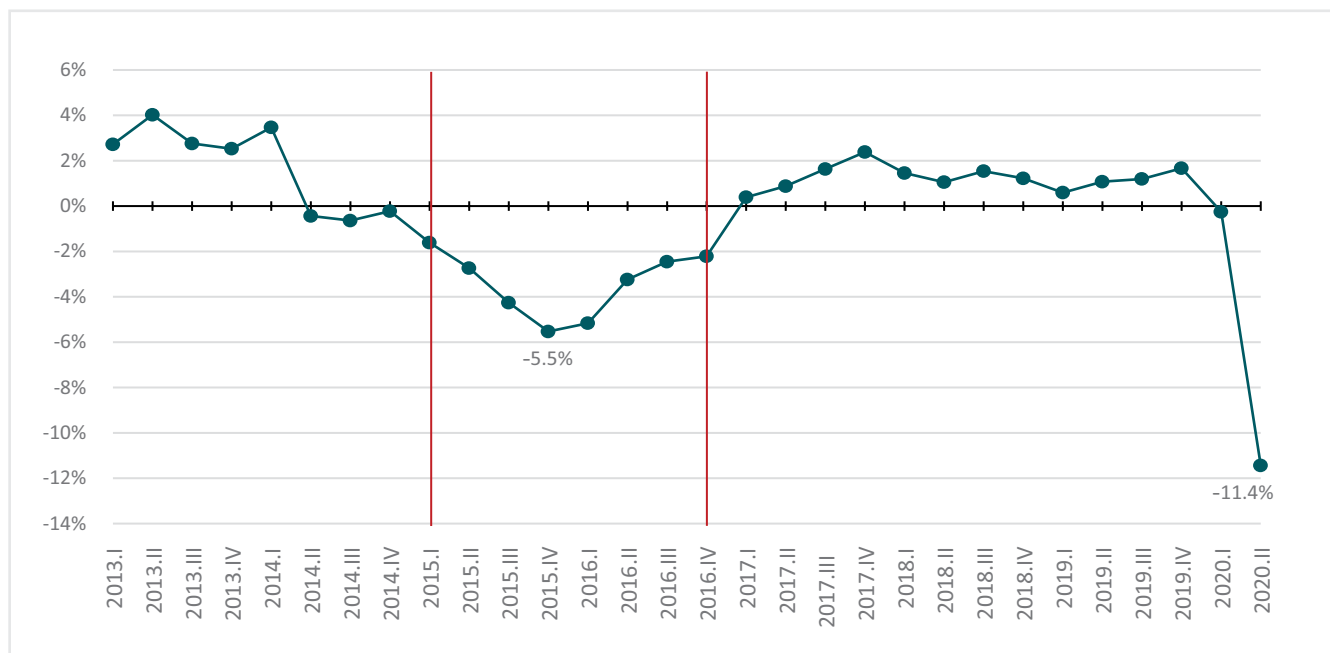
Since the second quarter of 2014, Brazilian GDP fell for 11 consecutive quarters, reaching its lowest value in the fourth quarter of 2015, a 5.5 per cent decline. It only started showing signs of recovery in early 2017. In February 2020, the first cases of the novel Coronavirus were detected in the country, and the World Health Organization (WHO) declared COVID-19 a pandemic in March. Containment measures adopted by national bodies and private entities to foster social distancing and curb the spread of the virus included travel restrictions, the closure of school and businesses, restrictions to productive activities and, in the most extreme cases, full lockdowns (including curfews). These measures have greatly impacted economic activity, especially the labour market.

Figure 1 presents annual variations of quarterly GDP and illustrates how the current crisis rapidly resulted in an unprecedented economic downturn, to levels below even those of the 2015-2017 recession.

This Policy Research Brief seeks to assess labour market adjustments in response to these two recessions, attempting to establish similarities and differences between them. To that end, we have calculated various labour indicators, based on the National Continuous Household Sample Survey (*Pesquisa Nacional por Amostra de Domicílios Contínua—PNADC*) carried out by the Brazilian Institute of Geography and Statistics (*Instituto Brasileiro de Geografia e Estatística—IBGE*), the General Registry of Employed and Unemployed Workers (*Cadastro Geral de Empregados e Desempregados—CAGED*) and the Annual Social Information Report (*Relação Anual de Informações Sociais—RAIS*), produced by the Ministry of the Economy's Special Bureau of Social Security and Labour.

## FIGURE 1

Variation of GDP relative to the same quarter of the previous year (percentage)



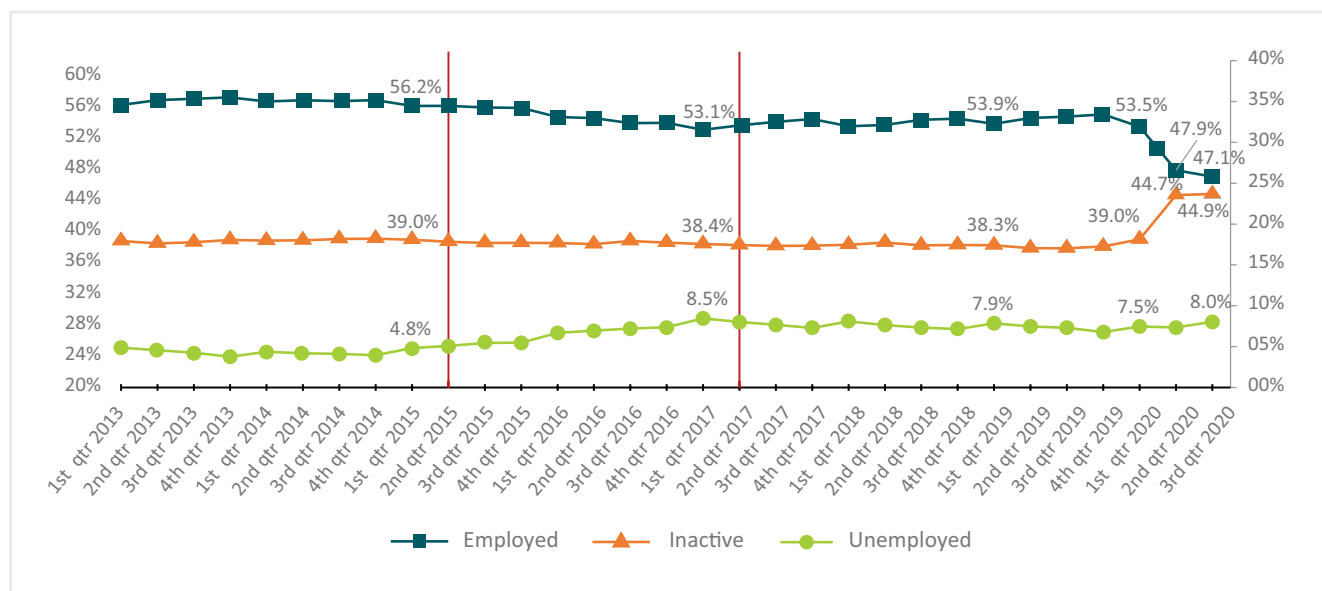
The brief is organised into seven sections. The first describes the evolution of the three states of occupation of the working-age population relative to the labour market (employed, unemployed and inactive) over the period analysed. The second section expands this analysis by differentiating between formal and informal labour. In the third section, workers are grouped according to their economic activity to observe a possible heterogeneity in their respective responses to the analysed crises. In the fourth section, workers are disaggregated according to certain individual characteristics, such as gender, age and schooling. The fifth and sixth sections focus on the evolution of labour income and of working hours over the period analysed. Finally, the seventh section provides a summary of the brief and presents some conclusions.

## 2 Adjustments among employed, unemployed and inactive people

The recession of 2015-2016, with two consecutive annual GDP losses of 3.8 per cent and 3.6 per cent, respectively, produced significant impacts on the labour market. There was a considerable reduction of 3.1 percentage points (p.p.) in the share of employed people within the labour force, which was of 56.2 per cent in the first quarter of 2015, and 53.1 per cent in the first quarter of 2017, as depicted in Figure 2. The counterpart to this reduction in the share of employed people was an increase in the share of unemployed people in the labour force, which jumped from 4.8 per cent in the first quarter of 2015 to 8.5 per cent in the first quarter of 2017, the highest value in the historical series. The share of those outside the workforce (inactive) was kept relatively stable over the period, at around an average of 38.5 per cent.

**FIGURE 2**

Distribution of employed, unemployed and inactive people of working age, first quarter of 2013 to third quarter of 2020 (percentage)



Source: PNADC.

In 2020, the decline in employment was more pronounced and concentrated in a shorter period. The proportion of employed people in the labour force, which was of 53.5 per cent in the first quarter of 2020, fell to 47.1 per cent in the third quarter, a decline of 6.4 p.p. in just two quarters. This decline is unprecedented in the period covered by PNADC.

The counterpart to this pronounced decline in employment during the COVID-19 pandemic was an increase in the inactive population, which increased from 39 per cent in the first quarter of 2020 to 44.9 per cent in the third quarter of the same year. The proportion of unemployed people in the EAP saw a more modest increase (0.5 p.p.) over the same period, reaching 8 per cent in the third quarter of 2020.

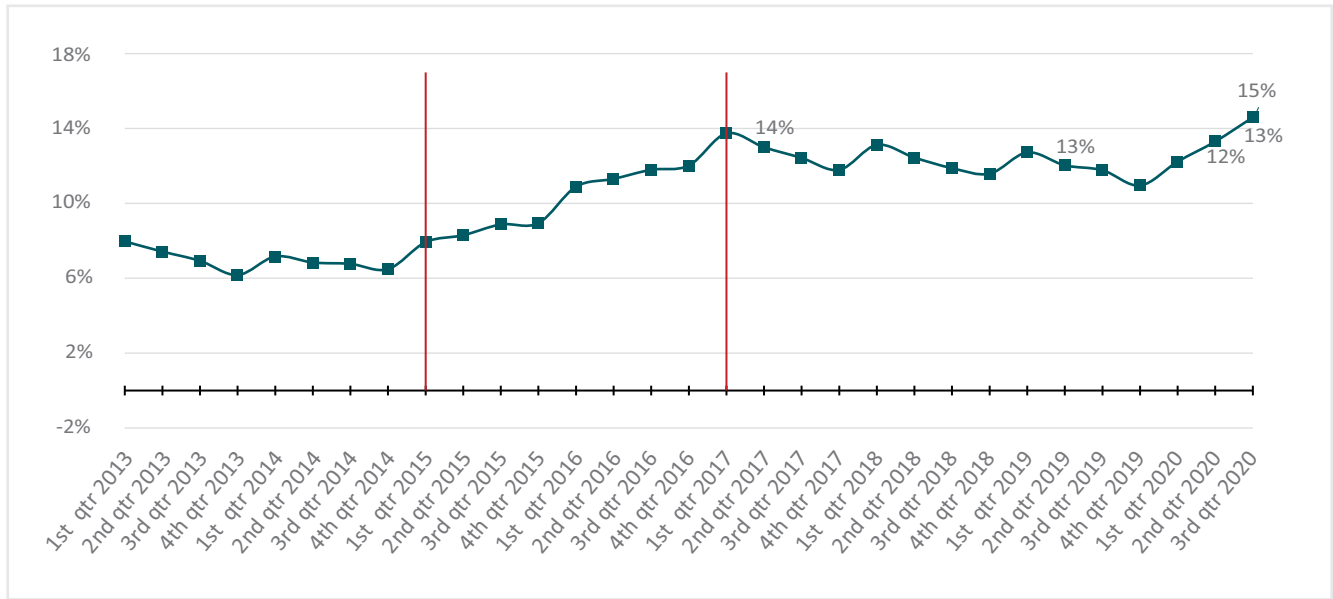
It is worth noting that the share of unemployed people in the EAP reached its zenith in the first quarter of 2017: 8.5 per cent. However, when considering the unemployment rate, which is measured by the proportion of unemployed people relative to the workforce (which is the sum of employed

and unemployed people), we see that the top value in the series—14.6 per cent—occurred in the third quarter of 2020 (Figure 3). On the one hand, this historical peak in unemployment results from the COVID-19 crisis having reached a labour market that was already characterised by high unemployment. In addition, the pandemic resulted in a drastic reduction in the workforce. Therefore, the share of unemployed people in the third quarter of 2020 (around 14 million) is divided by a smaller workforce, which contributes to an increased unemployment rate.

Figure 4 reveals that one of the key factors for the rise in unemployment in both recessions was the sharp rise in unemployment persistence. The proportion of people who were actively seeking work in a given quarter, and who remained unemployed in the following quarter, increased from 37.6 per cent in the first quarter of 2015 to 48 per cent in the first quarter of 2017. On the other hand, the outflow from unemployment to employment was reduced from 33.2 per cent to 26.9 per cent over the same period.

**FIGURE 3**

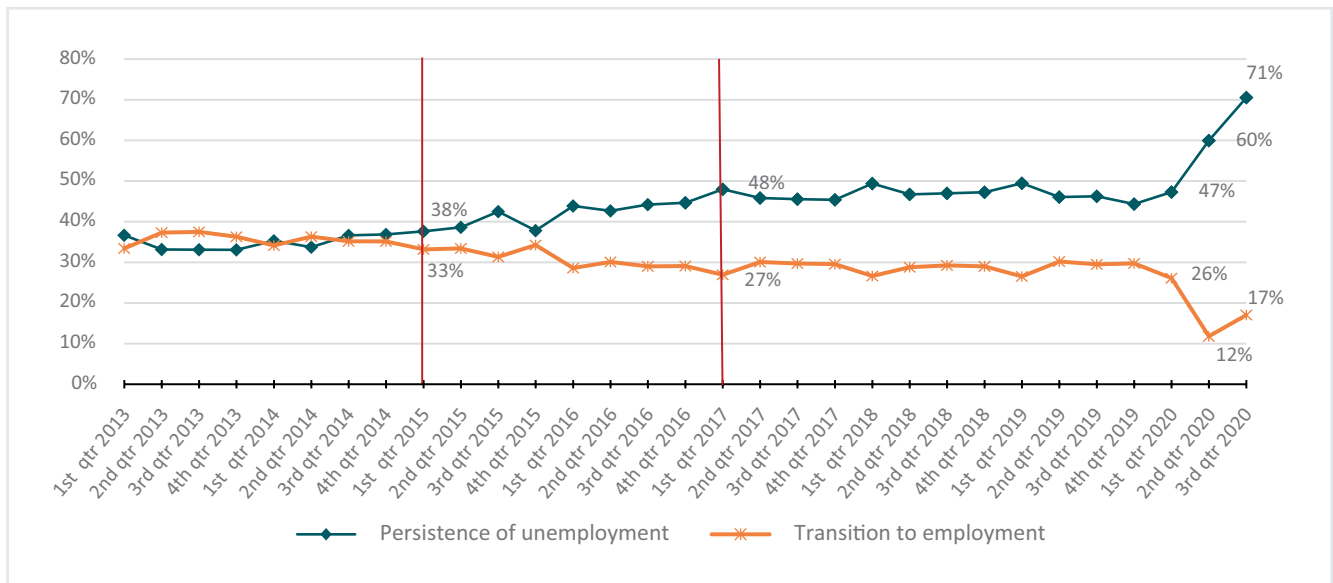
Evolution of the unemployment rate, first quarter of 2013 to third quarter of 2020



Source: PNADC.

**FIGURE 4**

Transition of unemployed people from one quarter to the next



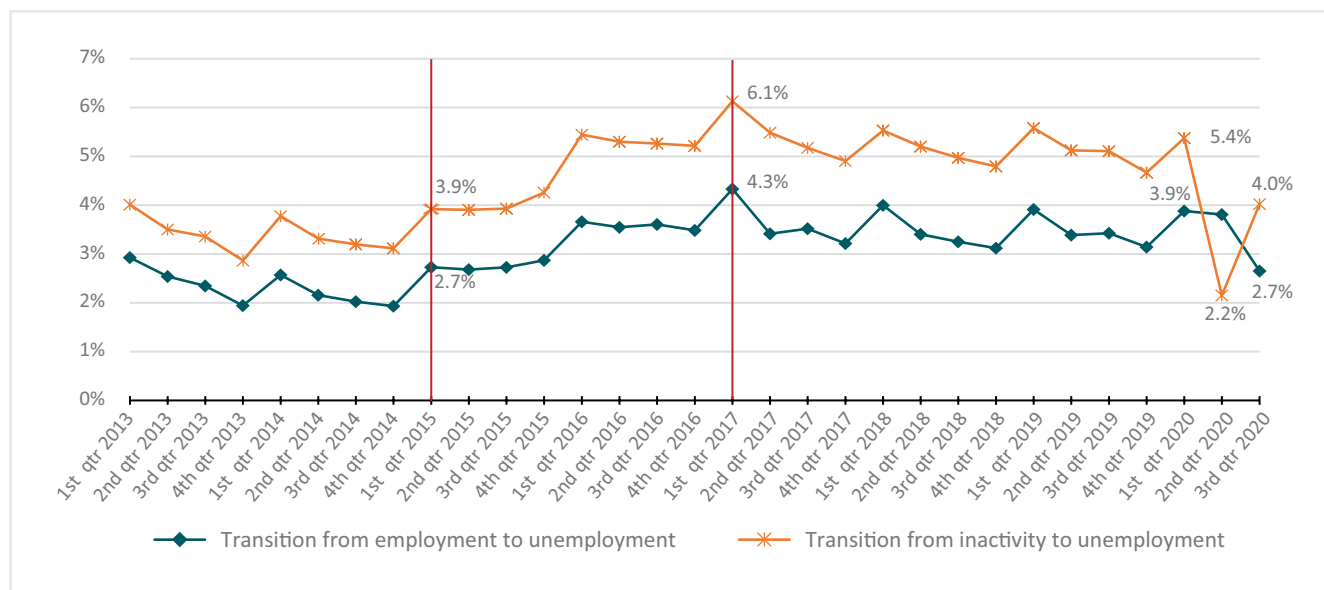
Source: PNADC.

Figure 5 illustrates a marked difference between the two recessions. In 2015/2016, the inflows into unemployment—both those coming from employment and those coming from inactivity—contributed to an increased number of unemployed people. The transition from employment to unemployment increased from 2.7 per cent to 4.3 per cent, and the flow of inactive people into unemployment increased from 3.9 per cent to 6.1 per cent between the first quarter of 2015 and the first quarter of 2017. During the pandemic, inflows into unemployment coming from inactivity fell sharply between the first and second quarters of 2020, up to 2.2 per cent. This is clearly related to low expectations of finding work amid the pandemic, which is corroborated by the reduced transition from employment into unemployment.

Given the interruption in economic activities and the vast reduction in hiring, it was predictable that there would be an increase in the share of 'discouraged' people (*desalentados*),<sup>2</sup> or, in other words, those who were not employed and who, although available for work, did not look for a job because they considered the odds of finding one to be too low. Figure 6 reveals that this increase did in fact occur during the 2015-2016 recession, when the share of the working age population in this 'discouraged' state went from 2.6 per cent to 6.4 per cent. Regarding the pandemic period, PNADC seems to indicate that there was no significant increase in the share of discouraged people, which went from 7.1 per cent in the first quarter of 2020 to 7.5 per cent in the third quarter of the same year, as depicted in the bottom line of Figure 6.

**FIGURE 5**

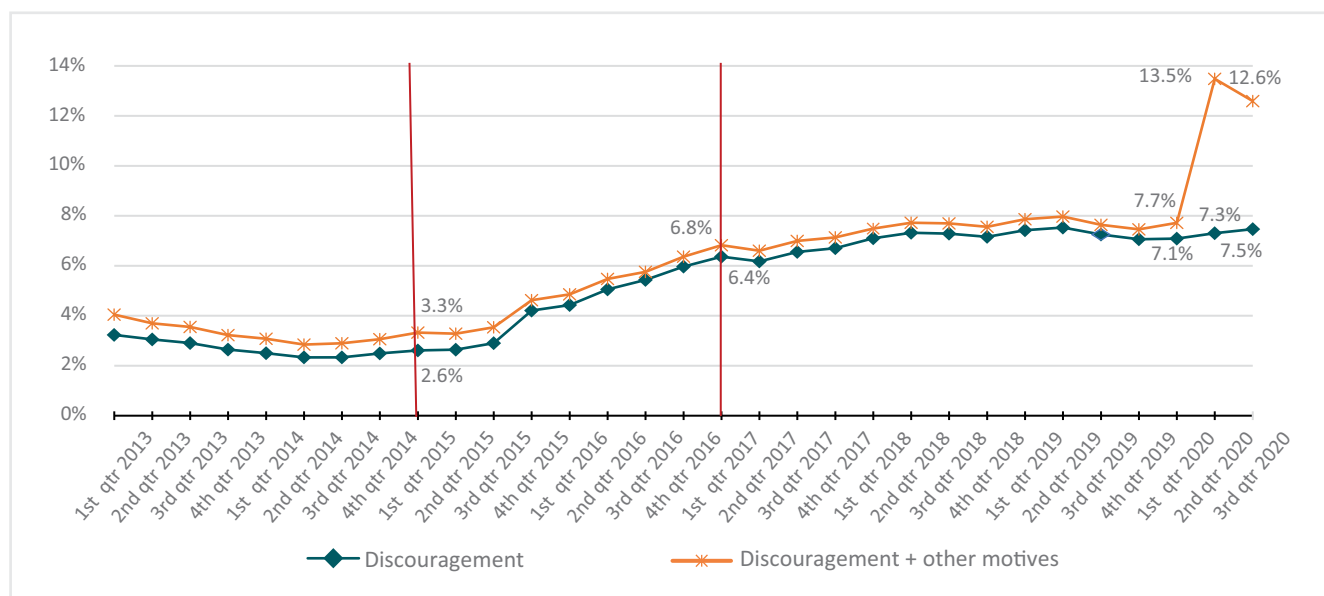
Inflows into unemployment after one quarter



Source: PNADC.

**FIGURE 6**

Evolution of the percentage of discouraged people



Source: PNADC.

However, it is possible that there was a higher increase in the share of discouraged people as a result of the pandemic. Data from the IBGE’s COVID-19 PNADC show that in May and June 2020, around 24 per cent of the population outside the workforce declared not having sought work specifically because to the pandemic (due to isolation, quarantine or social distancing), or due to jobs not being available at their location, although they would have liked to have worked in the reference week.<sup>34</sup>

**3 Adjustments in employment according to formalisation status**

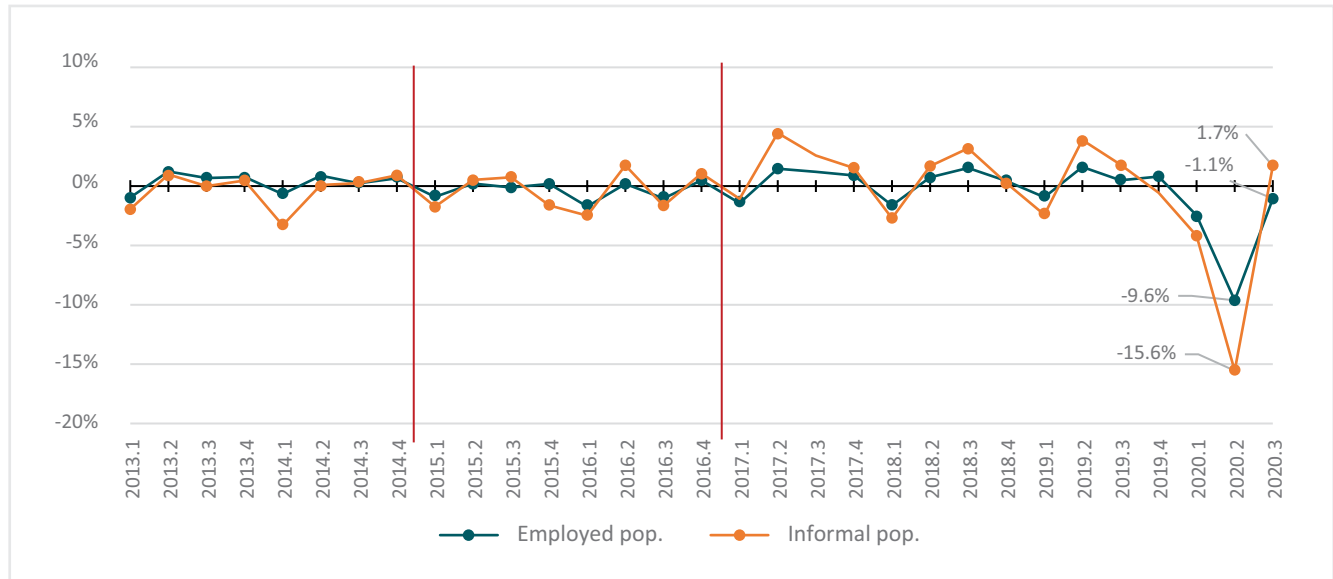
The quarterly variation of the employed population and of informal employment is depicted in Figure 7.<sup>5</sup> The variation in informal employment did not differ much from what was

observed for the total of employed people during most of the 2015-2016 recession. What is most striking in this regard is the stronger recovery of employment in the informal sector from 2017 onwards—the inflection point that marked the end of the crisis. A similar phenomenon occurred in the third quarter of 2020, when the labour market showed signs of recovery. By that point, informal employment had increased 1.7 per cent, while total unemployment decreased by 1.1 per cent.

This result is consistent with those highlighted by a new branch of the literature regarding the labour market and economic cycles, showing that the recovery of employment in these inflection points at the end of recessions tends to be driven by low productivity positions.<sup>6</sup>

**FIGURE 7**

Quarterly variation of the employed population, total and informal<sup>7</sup>



Source: PNADC.

Figures 8.1. and 8.2 show the shares of the population that move from one state of occupation to another, from one quarter to the next. The increase in informal employment from 2017 onwards was caused by the combination of decreased outflows of workers in this state and a stable inflow of workers to this state.

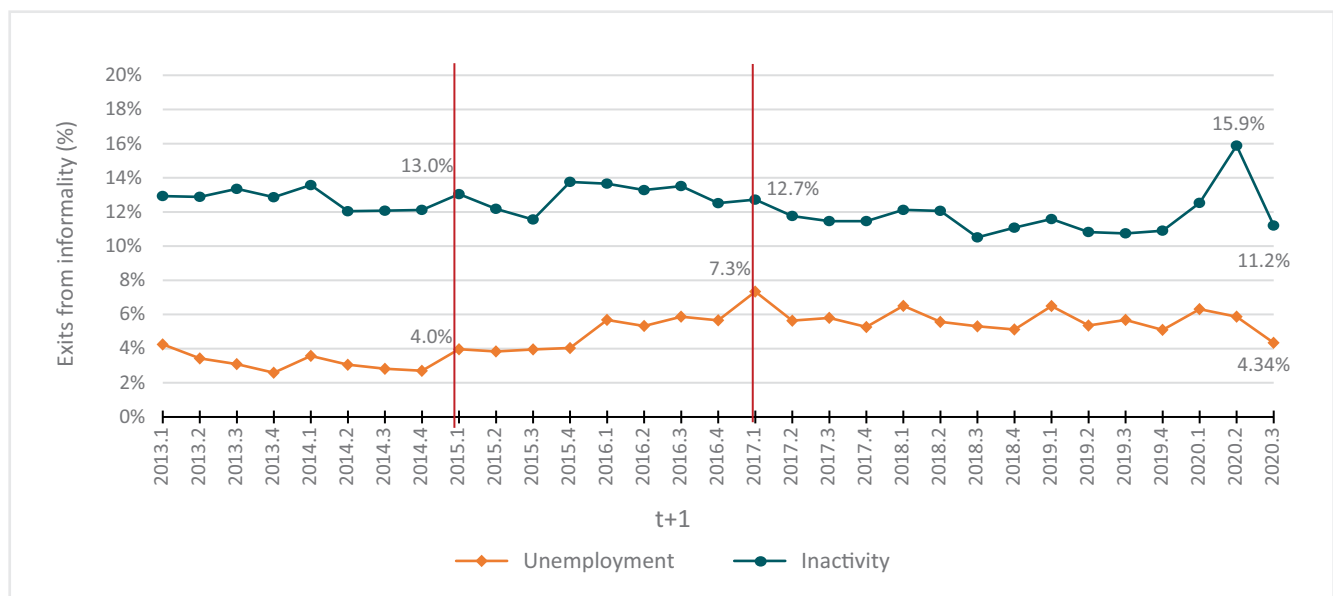
The decrease in the flow of workers who leave informal employment applies mainly to workers who would move into inactivity or unemployment, as shown in Figure 8.1. The transition from informality into inactivity, which was of 12.7 per cent in the first quarter of 2017, fell to 11.6 per cent in the first quarter of 2019, and the exit from informal employment into unemployment, which was of 7.3 per cent, fell to 6.5 per cent during the same period.

In addition, Figure 8.2. shows how inflows into informal labour remain stable in the period between the first quarters of 2017 and 2019. The transition from joblessness to informal labour remained at around 20 per cent, while entry from inactivity remained at around 6 per cent.

One of the main factors in the increase of informal employment during the third quarter of 2020 was a decrease in flows of workers either from unemployment or from inactivity, whose destination would have been some informal employment. Figure 8.1 illustrates this fact quite clearly.

**FIGURE 8.1**

Share of informal workers who moved towards unemployment or inactivity within one quarter (as a percentage)



Source: PNADC.

**FIGURE 8.2**

Share of inactive and unemployed people who moved towards informality within one quarter (as a percentage)



Source: PNADC.

#### 4 Adjustments in employment, by sector

Figure 9, which depicts the annual variation of the employed population by activity sector, shows distinct impacts on sectorial employment during both crises according to PNADC. In general terms, the current recession has affected a larger number of sectors and affected them more dramatically.

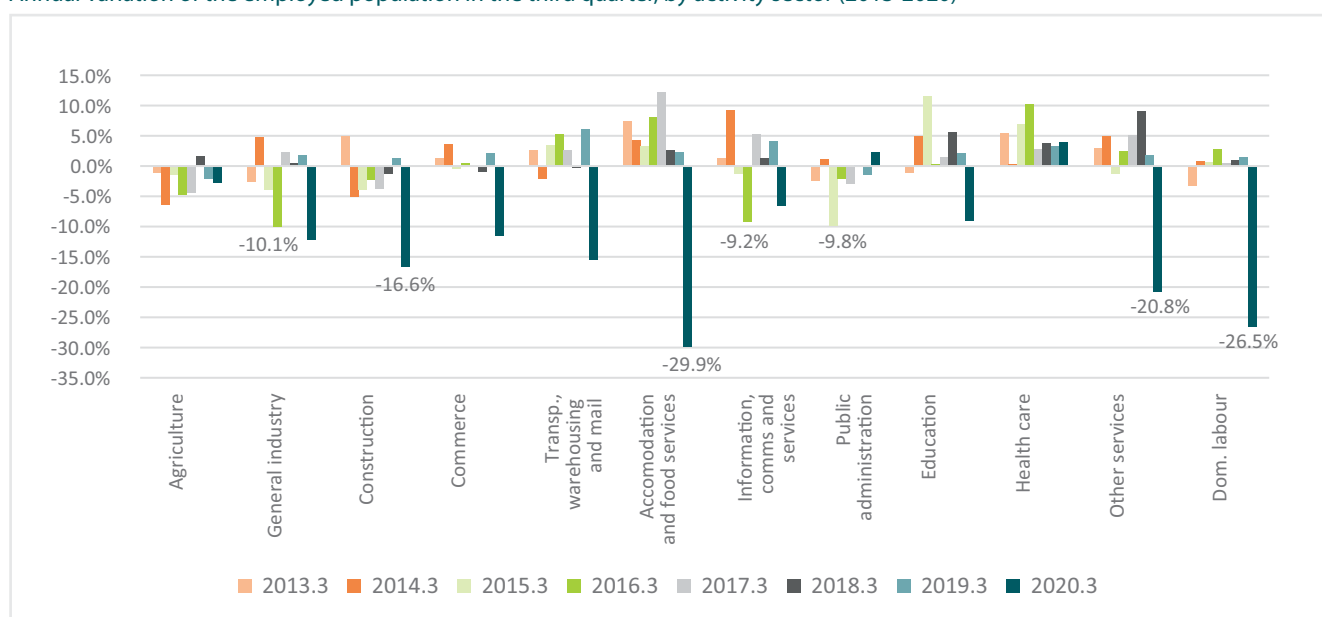
In the third quarters of 2015 and 2016, the most affected sectors were: public administration, general industry, and information systems. In the third quarter of 2020, all sectors saw a negative annual variation in the employed population, except for public administration (2.25 per cent) and health care (3.84 per cent)—probably driven by temporary hiring to combat the pandemic.

The two most affected segments were the accommodation and food services sector and domestic labour, which fell by 29.9 per cent and 26.5 per cent, respectively. These sectors had not contracted during the previous crisis. Social distancing measures and lockdowns have clearly affected the restaurant and hotel sector, while movement restrictions and reduced household incomes help explain the sharp decrease in domestic services.

In addition, other key sectors to distinguish the sectorial impacts in employment during the two crises include: transportation, warehousing and mail services; education; and commerce. Even if these sectors had fewer losses than the ones cited previously, they did not experience any retraction during the 2015-2016 crisis.

**FIGURE 9**

Annual variation of the employed population in the third quarter, by activity sector (2013-2020)



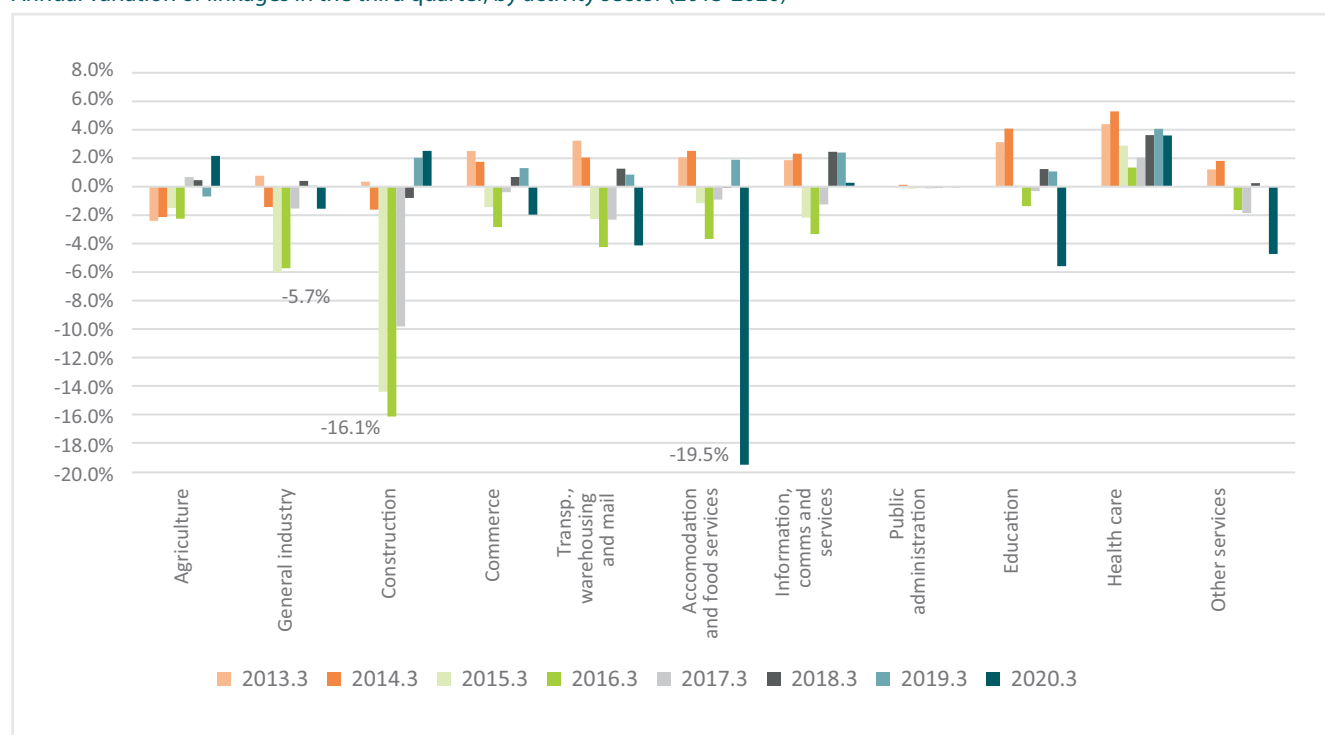
Source: PNADC.

Using data from CAGED and RAIS, which, unlike those in the PNADC, are based on administrative records of all establishments and not on household samples, we can focus on the formal links in the labour market in more detail. The data in Figure 10 were subdivided into quarters to facilitate comparisons against PNADC data.

Apart from domestic labour, which is not captured very well by these two data sources due strong informality, the results

are similar to previous ones. One of the notable differences is that the negative impacts on formal employment for the general industry and construction sectors were more significant in the 2015-2016 recession than in the current pandemic. In addition, outcomes shown in Figure 9 for the current recession are more serious than the ones depicted in Figure 10. These two observations corroborate the previous finding that, so far, the effects of the pandemic were greater in the informal labour market.

**FIGURE 10**  
Annual variation of linkages in the third quarter, by activity sector (2013-2020)



Source: CAGED and RAIS (Ministry of the Economy).

## 5 Adjustments in employment according to the individual characteristics of workers

In this section, we will analyse the impacts of both crises on the labour market according to workers' characteristics, again based on data from PNADC. Figure 11 shows the series for the variation in the employed population, by gender. In the 2015-2016 recession, we can observe a differentiated effect throughout the period. Men were most affected in the early and late stages of the crisis, while women were most affected in the intermediary stage. It is interesting to note that in the recovery period—post-2016—women had systematically better results than men. This ended with the onset of the pandemic, and women started losing more job positions. A similar pattern is observed in the disaggregation by ethnic groups, as shown by Figure 12, with black and indigenous people presenting similar outcomes to women, while white people and Asian descendants present similar outcomes to men.

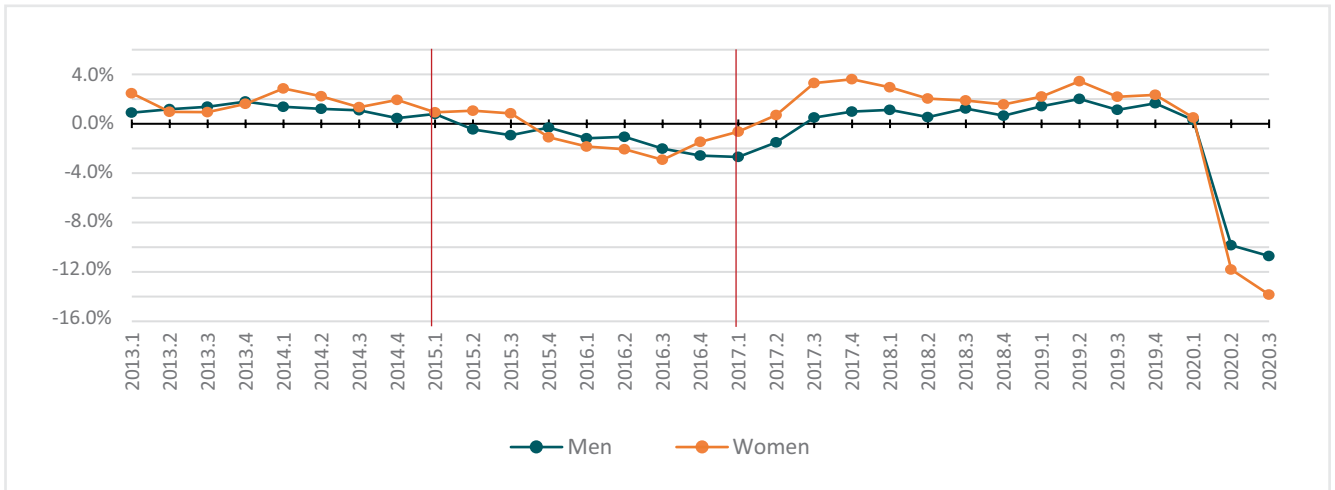
Figure 13 shows the evolution of the employed population by age group. Youth were clearly the most affected share of the population during the 2015-2016 crisis. In somewhat surprising fashion, older workers went through

the period almost unscathed, having better outcomes than workers in their prime age. In the current crisis, however, everybody loses. Even if younger people are affected the most,<sup>8</sup> the scenario is different compared to the previous recession.

The effects of the 2015-2016 downturn on employment according to levels of education, as shown in Figure 14, somewhat resemble the impacts according to age. Workers with low educational attainment levels lose job positions, while those with average and high levels of education manage to retain their jobs. Although it is quite true that those with lower levels of education were already losing ground in the labour market even before the crisis,<sup>9</sup> losses were more pronounced during that two-year period. In the current crisis, however, even workers with moderate levels of education are losing their positions in significant numbers, so that the only segment of the workforce that seems able to maintain employment are highly educated workers. Greater difficulty in replacing these workers in the event of a recovery, due to their specific and on-the-job training, as well as greater flexibility to perform their functions remotely, might help explain their higher retention rates.

**FIGURE 11**

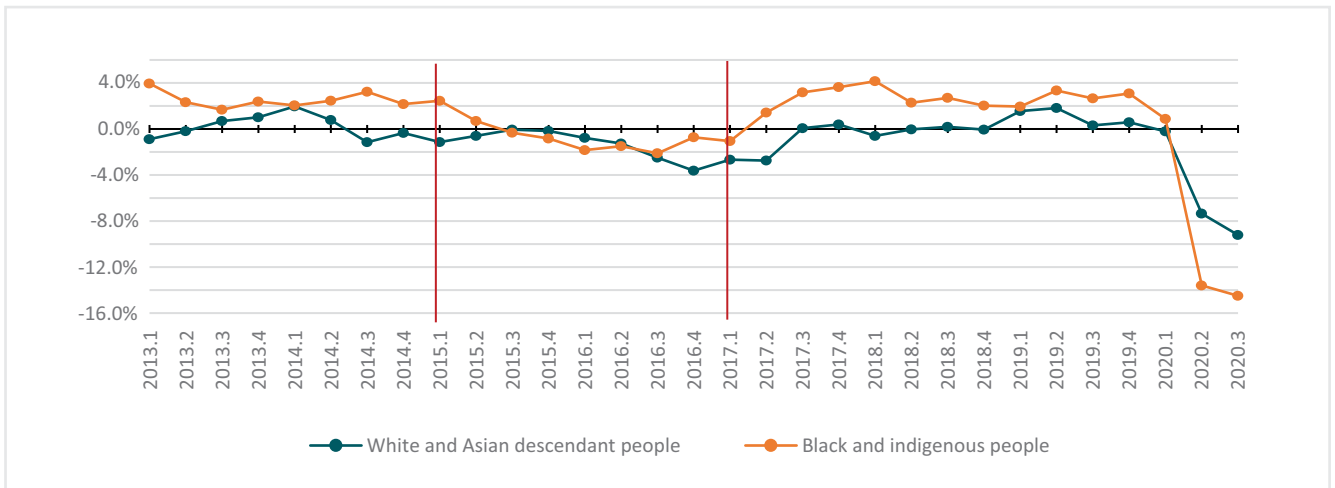
Annual variation of the employed population, by gender (as a percentage)



Source: PNADC.

**FIGURE 12**

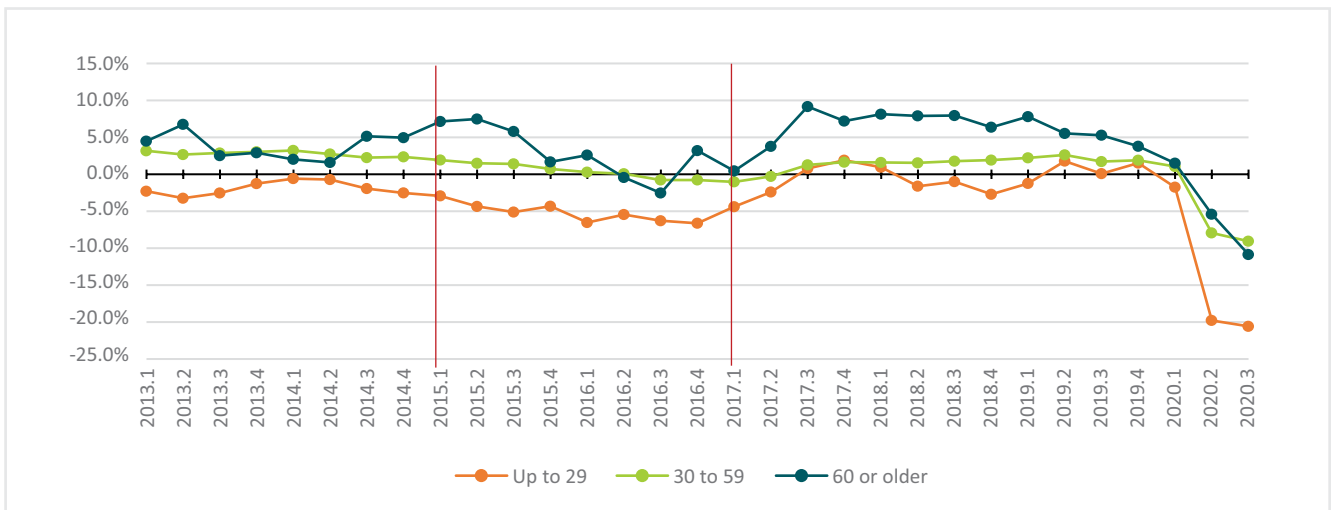
Annual variation of the employed population, by race/colour (as a percentage)



Source: PNADC.

**FIGURE 13**

Annual variation of the employed population, by age group (as a percentage)

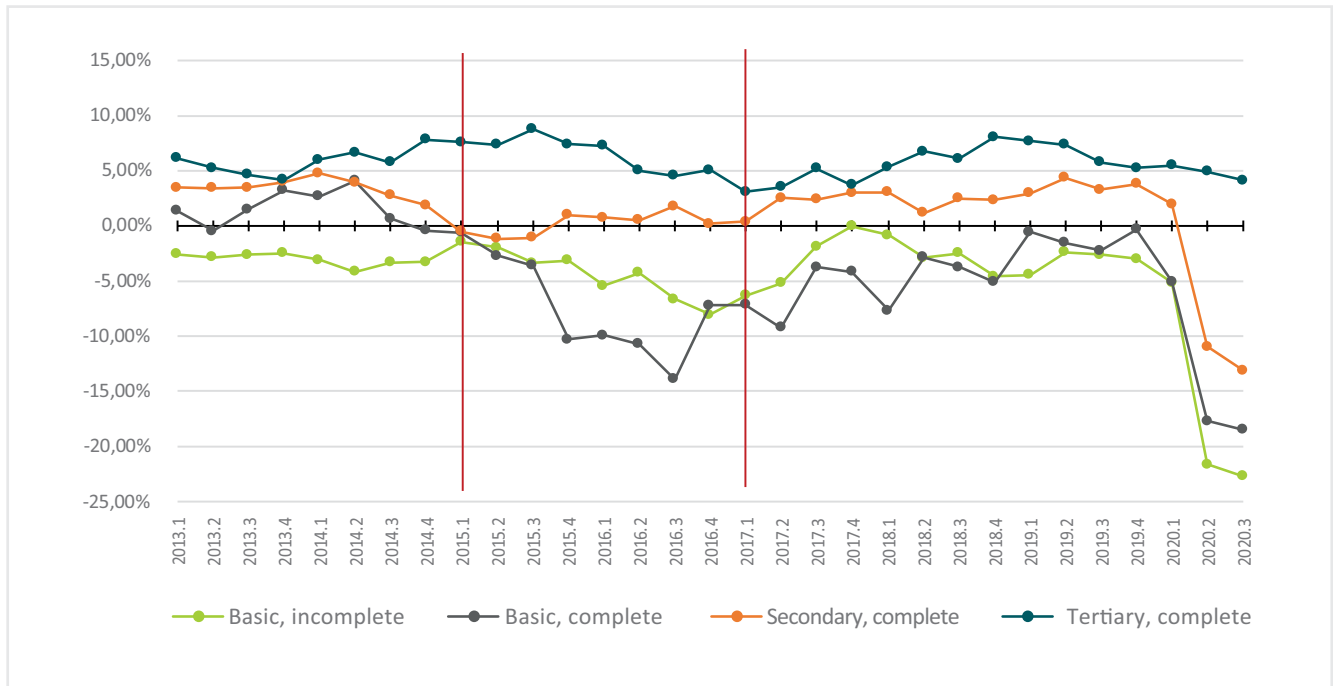


Source: PNADC.



**FIGURE 14**

Annual variation in the employed population, by level of education (as a percentage)



Source: PNADC.

**6 Adjustments in income and working hours**

The data available through PNADC also allow for an analysis of labour income according to two definitions: regular income, which is the income the worker usually earns, and actual income, which represents how much the worker actually earned during the reference month. Figure 15 shows the annual variation of regular and actual incomes from 2013 to 2020.

Regular income contracted during almost the entire period, and only started to recover in the last quarter of 2016. Actual income cannot be easily assessed due to changes in the survey questionnaire in the fourth quarter of 2015.<sup>10</sup> However, if we ignore the 2016 outlier, it seems reasonable to conclude that there was also a pattern of contraction.

**FIGURE 15**

Annual variation of regular and actual labour income (as a percentage)



Source: PNADC.

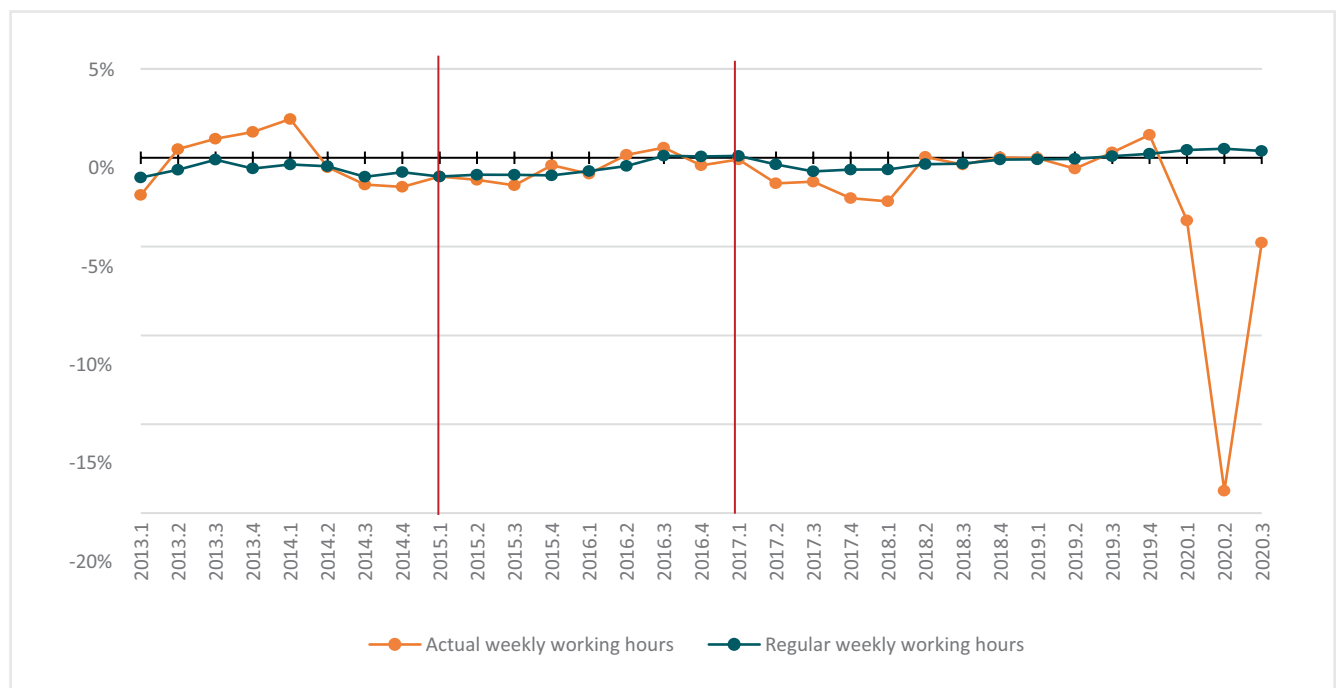
The second quarter of 2020 presents the largest discrepancy between regular and actual incomes ever captured in the historical series. This was reduced in the following quarter but remained high when compared to the rest of the series. Unlike the 2015-2016 recession, regular income exhibits significant growth in the current crisis, possibly due to massive unemployment of lower income workers, especially those in the informal sector and with lower levels of education, as previously discussed. Actual income is also influenced by the reduction in actual working hours during the period, as can be seen in Figure 16.

Under normal conditions, employed workers without a signed work permit can have their working hours reduced to decrease job costs, and self-employed workers can

reduce their own working hours if they determine that the level of demand does not justify their costs. In addition, the federal government has enacted measures to increase the flexibility of formal work relations, also allowing for a reduction in working hours, such as the Emergency Plan for the Maintenance of Employment and Income. Most importantly, however, the peculiarity of the current crisis regarding restrictions on mobility and physical contact mandates a reduction in actual working hours. Moreover, the speed of the onset of the crisis has contributed to the detachment between the regular and actual series, unlike the 2015-2016 recession, which, in addition to not exhibiting any detachment, adjustments through a reduction in working hours were much less pronounced.

**FIGURE 16**

Annual variation of average regular and actual weekly working hours (as a percentage)



Source: PNADC.

## 7 Summary and conclusions

In this brief we have sought to compare the effects of two recent economic downturns on employment: the 2015-2016 recession and the 2020 shock caused by the COVID-19 pandemic containment measures. While the first recession lasted a long time, reaching a nadir of -5.5 per cent in GDP growth in the third quarter of 2015, the second comprises a shock that has led to an unprecedented contraction of 11.4 per cent in the second quarter of 2020 (Figure 1).

Both crises have resulted in a decrease in the share of the employed population, but the most recent one is highlighted by a sharp drop starting in March, resulting in a decrease of over 6 p.p. in the rate of employment: from 53.5 per cent in the fourth quarter of 2019 to 47.1 per cent in the second quarter of 2020. In the previous episode, cumulative losses were around 3 p.p. over the period (Figure 2). The counterpart was an unparalleled increase in inactivity, with a resulting reduction in the

economically active population, leading to peak unemployment rates and discouragement (Figures 5 and 6).

Another striking aspect of the labour shock caused by the COVID-19 pandemic is the large negative impact on informal employment (Figure 7). Although something similar occurred early in the 2015-2016 recession, the magnitude of the drop in employment was much more pronounced during the pandemic: 18 per cent in the informal sector and 5.4 in the formal sector in the second quarter of 2020. As more vulnerable population groups tend to be overrepresented in the informal labour market, the effects on inequality associated with the shock are quite clear.

In 2015 and 2016, the general industry and public administration sectors exhibited a greater decrease in their employed population. During the COVID-19 pandemic, the most affected sectors were the accommodation and food

services sector and domestic labour, with sharp drops. In addition, activities in the transportation, warehousing and mail services, as well as in the education and commerce sectors, which had not experienced significant retraction during the 2015-2016 recession, were quite affected by the 2020 shock.

The most vulnerable groups of workers in Brazil—young people, black people, women, and people with a low level of education, who tend to be prevalent in the informal sector—were those most affected by the loss of livelihoods associated with the shock of 2020 (Figures 11 to 14). Though the same stylised fact was observed during the 2015-2016 recession, current losses are much greater.

Unlike the drop in average regular income observed during the 2015-2016 recession, the pandemic has led to a large increase in regular income. This surprising result was due to the massive layoff of low-income workers, many of whom became inactive. However, the increase in average regular income was not observed for average actual labour income, as the demand for work and actual working hours declined sharply during the second quarter of 2020, which coincided with the adoption of containment measures, in addition to the federal government's Emergency Grant cash transfers.

1. This Policy Research Brief was originally published in Portuguese (Corseuil et al. 2021).

2. According to the IBGE (2020), 'discouraged' people (*desalentados*) are those who were outside the workforce in the reference week that they were available to take on a job, but did not act towards achieving a position as a result of: i) not having managed to find an adequate job; ii) not having professional experience or other qualifications; iii) no jobs being available close to where they live; or iv) not having been selected for a job for being considered too young or too old.

3. More information at: <<https://bit.ly/371hR3L>>.

4. In its survey questionnaire, the PNADC does not include the COVID-19 pandemic as justification for giving up on searching for a job during the reference period. In addition to those who did not seek a job due to not having professional experience or qualification, being considered too young or too old or not having jobs available near to their location, there is a residual category for 'other, unspecified reasons', but it is not clear that it fully captures the effect of the pandemic.

5. We consider 'informal workers' those who are employed, employed without a signed work permit, or self-employed workers who do not contribute to public social security.

6. For more on this subject, see Moscarini and Postel-Vinay (2012).

7. Considering workers who do not have a work permit and self-employed workers who do not contribute to social security.

8. Corseuil and Franca (2020) compare both crises focusing on the young population and show an increase in the 'discouragement' of this population. The authors propose labour market reinsertion policies focused on this age group to avoid negative effects on their professional outlook.

9. A decline in the employed, low-schooling population does not necessarily mean a loss in welfare for these workers and might reflect a better overall level of schooling for workers in the country.

10. In October 2015, there was a reformulation in the PNADC questionnaire. Efforts were made to better capture actual income during the reference period. For more details, please see IBGE (2017).

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