

CAGED vs. PNAD: WHICH LABOR SURVEY IS RIGHT?

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- Since the beginning of the pandemic, the two main labor market surveys in Brazil, CAGED and PNAD, have shown notably divergent data in terms of performance. While CAGED indicates a robust and rapidly recovering labor market, along with dwindling slack, PNAD data still points to all-time-high unemployment, a low labor market participation rate, and a widening employment gap.
- In our view, both surveys have had pandemic-related issues that may be leading to biased results. On the one hand, CAGED may be underreporting layoffs due to the large number of firms going out of business. On the other hand, the PNAD survey is being carried out by phone, which may be overestimating unemployment.
- Despite the problems with both surveys, we consider that PNAD paints a more precise picture of the current labor market. Even considering that the “real” labor market numbers are somewhere close to the midpoint between the surveys, this would still imply a precarious situation, with employment possibly at all-time lows and far from its trendline, considering both the CAGED and PNAD data series.

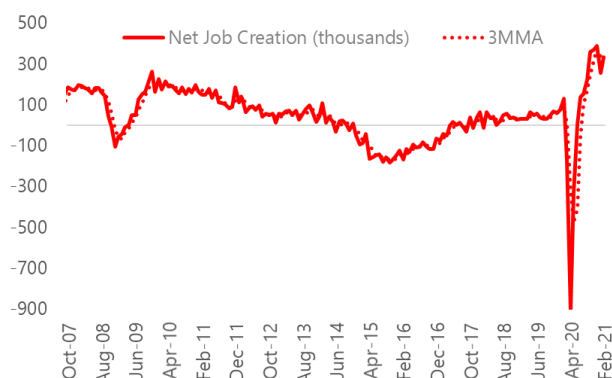
Overview on Recent Differences Between CAGED and PNAD

According to both of the two main labor market surveys in Brazil, CAGED and PNAD, the labor market suffered severely in the first months of the pandemic, namely from March 2020 to June 2020. However, these two surveys have indicated notably divergent performance throughout 2H20. On the one hand, CAGED has shown a sharp recovery in net formal job creation, with consecutive monthly all-time highs, which lead the indicator to fully offset the negative results posted earlier in the year (Figure 1.A). The PNAD survey, on the other hand, has pictured a much more fragile job market. Despite some recovery in employment, the difference between the total employed population in December 2020 and February 2020 was almost 9 million people, according to PNAD. Furthermore, we believe the unemployment rate has not increased further only because there was also a significant drop in the labor market participation rate, which has reached all-time lows. In a counterfactual exercise, if the labor force had remained at the February 2020 level, the unemployment rate would be close to 20% (Figure 1.B).

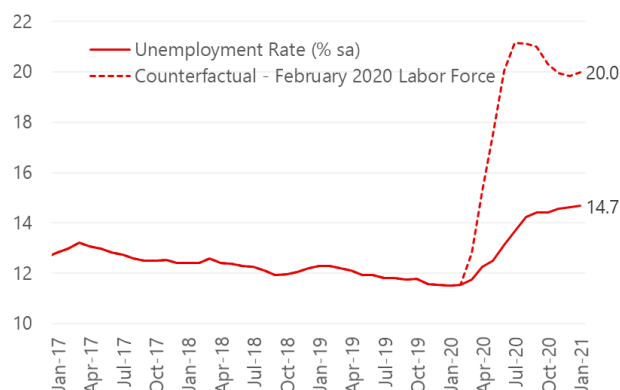
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Figure 1.A – CAGED Net Formal Job Creation (sa)


Sources: CAGED, Santander.

Figure 1.B – PNAD Unemployment Rate


Sources: IBGE, Santander.

These differences in the results of the two surveys raise questions about possible issues with the surveys due to the pandemic. In the CAGED survey, we see the main problem as a possible underreporting of layoffs. As a considerable number of firms have gone out of business since the pandemic began, it is possible that these firms are not reporting all of their layoffs. As a result, we think data on net job creation could be overestimated. Some factors, such as the low number of responding establishments and the number of new unemployment insurance claims, may be evidence of underreporting, in our view.

Furthermore, the CAGED reporting methodology changed in January 2020, with a new electronic registry system for formal workers, *eSocial*, going into effect for most firms after being gradually implemented beginning in 2018. As more firms migrate to the new system, CAGED statistics changed to account for reporting from this new channel, resulting in the creation of the New CAGED. However, the Ministry of Economy has noticed that the New CAGED usually has higher numbers for workers hired, while layoffs tend to be lower than in the previous methodology. As a temporary solution, the Ministry of Economy adapted the new layoff series to incorporate information from other official sources, as the new series did not match the series from the previous methodology¹.

The PNAD survey, on the other hand, may be underestimating job market performance during the pandemic, in our view. Since March, the IBGE has been doing the survey by phone due to social distancing measures. As a sample-based survey, the responding group in PNAD is constantly changing. However, IBGE could not obtain all the households' contacts to be included in post-March surveys. Therefore, there were problems in reaching all the sampled households, leading to possible biases in the survey's populational estimates.

In a recent study², Brazilian institute IPEA suggests that the share of the population that was more likely to obtain formal jobs may have been underestimated in the initial post-pandemic PNAD surveys. Households are surveyed by IBGE five times in a row, and there is a historical trend of a higher formalization rate among the group responding for the first time. However, the 2Q20 and 3Q20 surveys indicated a lower formalization rate within groups of first-time respondents, which was not seen with the later groups in the five-survey series. In addition, the first-timer groups were significantly smaller than the others in this period, probably because it was easier for IBGE to contact households that had already been surveyed, as their registered information was up to date. As the informal sector was more affected by the pandemic, PNAD data could be underestimating the employed population. Figure 2 summarizes the main problems and evidence from the labor market indicators.

¹ For further details (in Portuguese), see: <https://bit.ly/3d3PqoB>

² “A redução no número de entrevistas na PNAD Contínua durante a pandemia e sua influência para a evolução do emprego formal” – IPEA - Available (in Portuguese) on: <https://bit.ly/3mzJ1ED>



Figure 2 – The COVID-19 Pandemic and Brazilian Labor Market Statistics

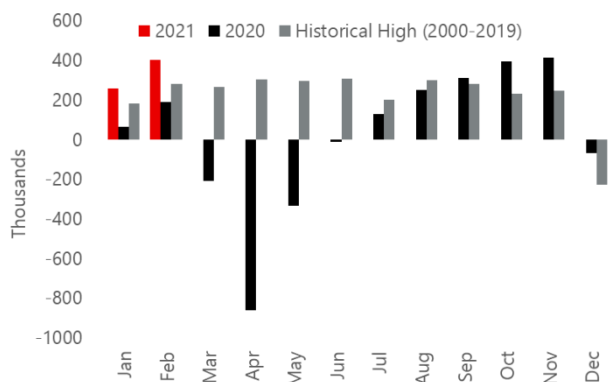
CAGED Problems and Evidence	PNAD Problems and Evidence
Possible underreporting in layoffs - closing firms not registering all layoffs	Survey being made by phone since the beginning of the pandemic
New CAGED survey has inconsistencies in layoff series, according to the Ministry of Economy (even before the pandemic)	IBGE was not able to obtain the phone numbers of all households to be included in the survey throughout 2020
Low level of responding firms since the beginning of the pandemic	Lower success rate in contacting households to respond the survey (~80% before the pandemic, ~60% in the initial pandemic months)
Decoupling between CAGED layoffs and unemployment insurance data	According to IPEA institute, 2Q20 and 3Q20 PNAD samples underestimated the number of formal workers in 1.0-1.5 million due to this lower success rate
All-time records on net formal job creation for five months in a row, despite the pandemic	Since unemployment has hit the informal sector harder, general employment level should be higher than indicated by the PNAD

Sources: Ministry of Economy, IBGE, IPEA, Santander.

Why Underreporting Seems the Best Explanation for CAGED’s Performance

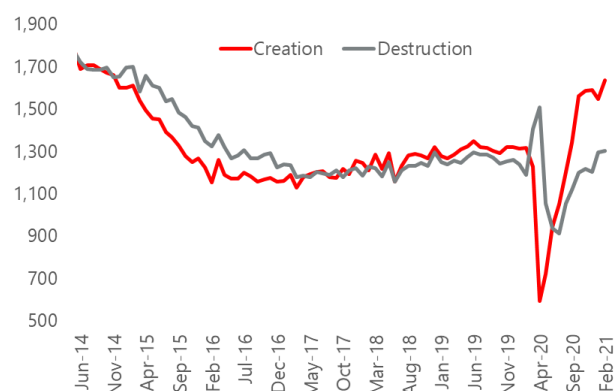
In July 2020, CAGED data began to show a recovery path after a sharp tumble in the initial months of the pandemic. In the following months, net formal job creation has gained momentum, such that, from September 2020 to February 2021, every successive result has represented a monthly all-time high for the entire series (Figure 3.A). However, when we examine the breakdown between job creation and destruction, the first evidence of underreporting layoffs appears. After a sharp and brief elevation, monthly layoffs have dropped to levels well below the historical average, to which they just returned in January 2021 (Figure 3.B). Considering the impact of the pandemic on economic activity, we think it would be reasonable to expect layoffs at a higher level.

Figure 3.A – CAGED Net Formal Job Creation



Sources: CAGED, Santander.

Figure 3.B – Job Creation and Destruction (sa)



Sources: CAGED, Santander.

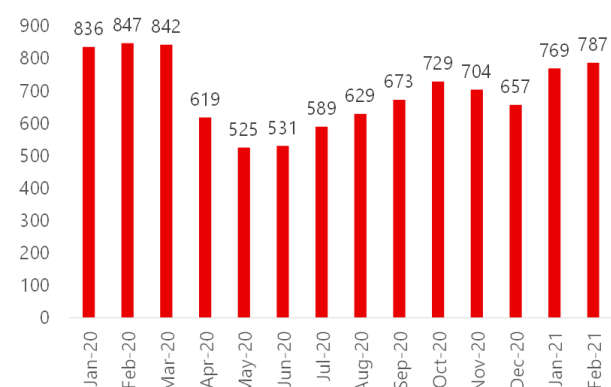
A closer look at CAGED’s microdata shows that the number of responding establishments fell considerably at the beginning of the pandemic, with over 200k fewer respondents in March 2020 than in February 2020. This indicator has remained at low levels, even considering post-deadline reporting. Although this is a short series, only available with the introduction of New CAGED, we think some possibilities, such as a seasonal decline, can be ruled out, since January and February 2021 data indicate a lower number of respondents in comparison



with the same months of 2020 (Figure 4.A). Although the difference has consistently decreased in more recent data, it is important to highlight that, during the period with the greatest discrepancy between the surveys (early 2H20), the number of respondents was notably low.

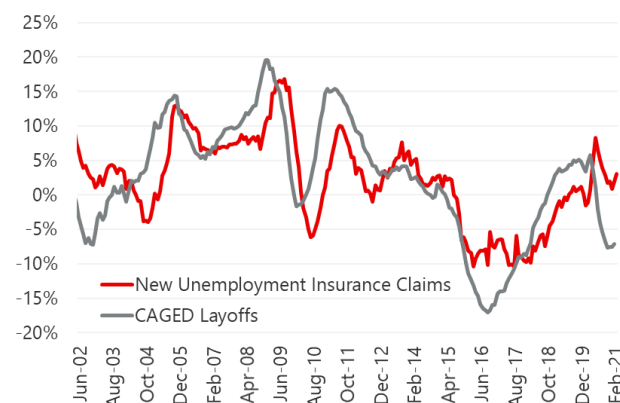
In our view, another piece of evidence that layoffs reported in CAGED should be higher is the analysis of new unemployment insurance claims. As the two series have a reasonable historical correlation, it can be expected that their data would not diverge. However, since June 2020, the 12-month variation of the layoff series has been decelerating, eventually moving into negative territory, while unemployment insurance claims have continued to indicate growth (Figure 4.B).

Figure 4.A – CAGED: Responding Firms (thousands)



Sources: CAGED, Santander.

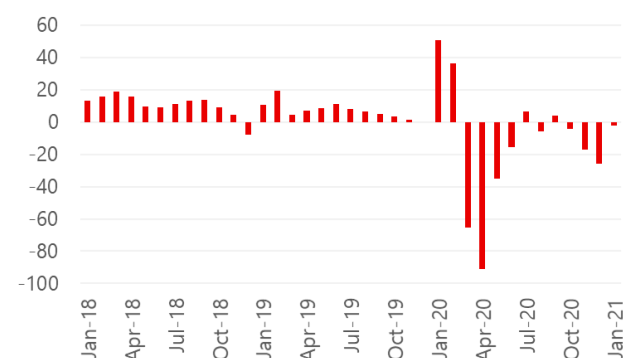
Figure 4.B – Layoffs and Insurance (12m)



Sources: CAGED, Ministry of Economy, Santander.

Finally, the CAGED reporting system allows for post-deadline declarations, which are included in the revised series in subsequent months. For the first time since the beginning of the series, the 12-month accumulated net revisions are in negative territory, indicating that, since March 2020, more layoffs than hirings have not been reported on time, which, in our view, indicates that firms may be having problems when reporting laid-off workers during the pandemic. It is important to note that, even after net job creation once again posted positive numbers, the revisions remained negative (Figure 5.A). Moreover, even in recent crisis periods, such as 2015-16, the net revisions remained positive (Figure 5.B). In spite of that, we think the volume of revisions is insufficient to fully explain the gap between CAGED and PNAD. In other words, even accounting for post-deadline declarations, CAGED data still looks atypically high.

Figure 5.A – CAGED Net Revisions (monthly)



Sources: CAGED, Santander.

Figure 5.B – CAGED Net Revisions (12m)



Sources: CAGED, Santander.

Why PNAD Reflects the Current Situation Better

In our view, PNAD data more accurately reflects the current job market. Despite also having issues during the pandemic, PNAD survey results are more consistent with what other economic activity indicators have shown

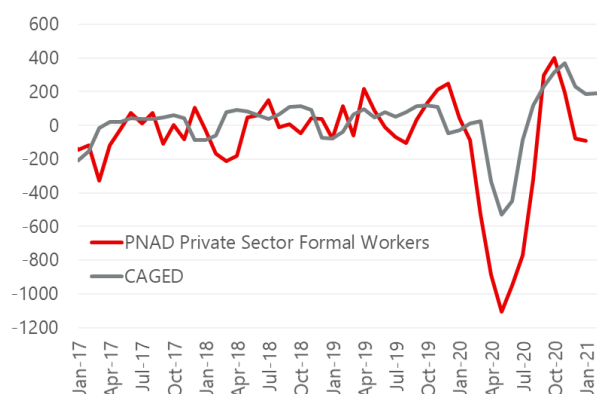


in the recent period. Nevertheless, a number of arguments have been used to try to validate the CAGED data relative to PNAD.

One argument frequently used to explain the difference between CAGED and PNAD is that the former covers only the formal sector, while the latter includes informal workers. As the pandemic has hit the informal sector harder, CAGED could be reflecting the more favorable situation in the formal market. In our view, this analysis can be proved wrong when we compare the private sector formal workers in PNAD with the CAGED results, as the difference between surveys was considerable, especially from March 2020 to August 2020 (Figure 6.A).

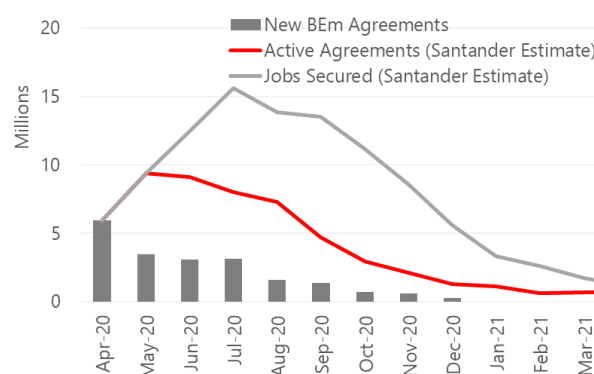
Another argument used to defend the CAGED survey is that the Emergency Employment and Income Maintenance Program (BEm), a government stimulus to maintain the number of formal jobs by reducing hours of work and temporarily suspending formal labor contracts, could explain the difference between CAGED and PNAD, as well as the low level of layoffs in CAGED. The BEm program requires employers to maintain the beneficiaries' employment for a period equal to the benefit duration, after the BEm agreement is terminated. Therefore, even if a BEm agreement is no longer active, the job remains secured for a longer period, due to this guarantee. However, we estimate that over 10 million jobs that originally benefited from the program are no longer secured (Figure 6.B). Even if only a small fraction of these jobs had been lost after the secured period, CAGED net job creation data should have suffered a significant impact during 2H20 (e.g., 10% would represent a loss of approximately 1.0 million formal jobs).

Figure 6.A – CAGED vs. Formal PNAD (monthly, nsa)



Sources: CAGED, IBGE, Santander.

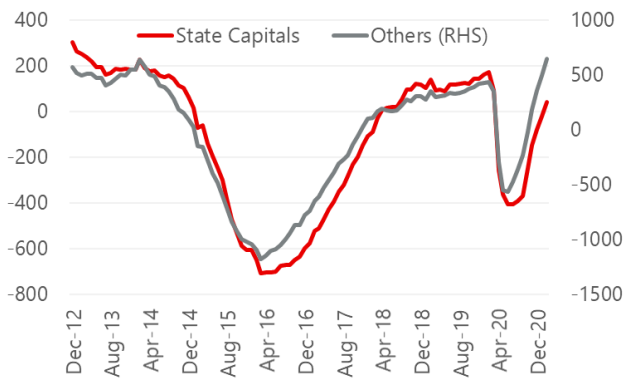
Figure 6.B – BEm Program Overview



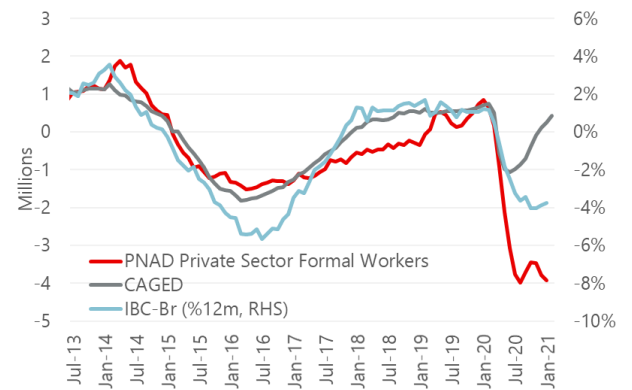
Sources: Ministry of Economy, Santander.

Finally, an additional possible explanation for this divergence is regional discrepancies. Since the beginning of the phone survey in March 2020, IBGE has not released the employment breakdown for state capitals, although it has released the aggregate numbers. Considering that much of the manufacturing and exporting sectors are outside state capitals, and that these sectors were less hard hit by the pandemic, CAGED could be capturing more accurately the job market performance in these locations, since it is populational, unlike PNAD, which is a sample survey. However, CAGED data does not indicate notable differences in the evolution of employment between state capitals and other locations (Figure 7.A).

Although PNAD has its own problems, as stated in the opening section, it still offers a more realistic picture of current labor market conditions, in our view. In a recent study, the IPEA institute estimated that in the past few releases, PNAD could have missed 1.0-1.5 million employed formal workers, but even considering an underestimate of this magnitude, the employment situation would still be precarious. Figure 7.B indicates that, according to PNAD, over 4 million formal jobs were lost over the past 12 months. Furthermore, other economic activity indicators, such as IBC-Br, indicate that net job creation should in fact be at negative levels.


Figure 7.A – CAGED Net Formal Job Creation


Sources: CAGED, Santander.

Figure 7.B – Labor Market and Economic Activity


Sources: IBGE, CAGED, BCB, Santander.

All in all, we reiterate our view of a labor market still suffering a substantial impact from the pandemic. This is particularly true since the informal sector, accounting for 40-50% of total employment in normal times, has been especially hard hit. In our view, as the economy reopens more consistently, sectors more affected by social distancing measures, such as services, should recover. However, we expect this movement to begin only in mid-2021, and the recent behavior indicated in CAGED data should not be mistaken as an early sign of a full economic recovery as of now.



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