Title
Labor Markets During the COVID-19 Crisis: A Preliminary View

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Publication Date
2020-04-28

Peer reviewed

LABOR MARKETS DURING THE COVID-19 CRISIS: A PRELIMINARY VIEW

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First Draft: April 11th, 2020
This Draft: June 9th, 2020

Abstract: We use a repeated large-scale survey of households in the Nielsen Homescan panel to characterize how labor markets are being affected by the COVID-19 pandemic. We document several facts. First, job loss has been significantly larger than implied by new unemployment claims: we estimate 20 million lost jobs by April 8th, far more than jobs lost over the entire Great Recession. Second, many of those losing jobs are not actively looking to find new ones. As a result, we estimate the rise in the unemployment rate over the corresponding period to be surprisingly small, only about 2 percentage points. Third, participation in the labor force has declined by 7 percentage points, an unparalleled fall that dwarfs the three percentage point cumulative decline that occurred from 2008 to 2016. Early retirement almost fully explains the drop in labor force participation both for those survey participants previously employed and those previously looking for work. We find increases in the fraction of those being retired across the whole age distribution with women and blacks driving a large part of the accelerated retirement. Historically, only few retirees re-enter the labor market, suggesting a possibly slow economic recovery.

JEL: E31, C83, D84, J21, J26
Keywords: Labor market, unemployment, employment, COVID-19.

We thank the National Science Foundation for financial support in conducting the surveys. We also thank Shannon Hazlett and Victoria Stevens at Nielsen for their assistance with the collection of the PanelViews Survey. Results in this article are calculated based on data from The Nielsen Company (US), LLC and marketing databases provided by the Kilts Center for Marketing Data Center at The University of Chicago Booth School of Business. Information on availability and access to the data is available at http://research.chicagobooth.edu/nielsen.

I Introduction

The arrival of the COVID-19 virus and the policy responses have led to unprecedented numbers of initial claims for unemployment since early 2020: over 16.5 million by April 4th, 2020, with new claims arriving at a rate of 6-7 million per week. But concerns about state governments' inability to process so many claims in such a short period, combined with the fact that many workers are ineligible for unemployment benefits, has led to concerns that total job losses are being understated by these numbers. Furthermore, because official labor market indicators compiled by the Bureau of Labor Statistics (BLS) and official micro-level data take time to be released, the current state of the U.S. labor market remains unclear.

Using new ongoing large-scale surveys of U.S. households much like the ones run by the BLS, we provide some preliminary evidence on the response of labor markets in the U.S. to the current crisis. We focus on three key variables typically measured by the BLS: the employment-to-population ratio, the unemployment rate, and the labor force participation rate. Historically, the employment-to-population ratio and the unemployment rate are near reverse images of one another during recessions as workers move out of employment and into unemployment (or workers in unemployment find it harder to move into employment). More severe recessions also sometimes lead to a phenomenon of "discouraged workers," in which some unemployed workers stop looking for work. This leads them to be reclassified as "out of the labor force" by the BLS definitions, so the unemployment rate can decline along with the labor force participation rate while the employment-to-population ratio shows little recovery, not because the unemployed are finding work but rather because they stop trying to find one. Jointly, these three metrics therefore provide a succinct and informative summary of the state of labor markets. While our wording of questions differs somewhat from the official protocol the BLS uses, our repeated surveys have the advantage of eliciting labor market statistics in a consistent way over time, providing detail on why individuals who are not working and are not searching for jobs decide to drop out of the labor force, and our survey response rate has been almost constant in the pre-crisis and crisis wave, contrary to official government surveys that saw large drops in response rates during the COVID-19 pandemic.

Using surveys prior to and at the height of the COVID-19 crisis, we provide new estimates of how these variables have changed in the last two months. Our most recent numbers are from individuals surveyed April 2nd-8th, 2020, and therefore provided a sneak preview at what the equivalent BLS numbers showed when they were ultimately released. Our findings are striking. First, the employment-to-population ratio (the fraction of the adult population reporting that they had a paid job) has declined by about 7.5 percentage points. With an adult (civilian non-institutional) U.S. population of 260 million, this corresponds to nearly 20 million jobs lost as of April 8th. This estimate is in line with (albeit even higher than) new unemployment claims through this time period and confirms the widespread job loss.

Twenty million jobs lost relative to the pre-crisis labor force would correspond to an increase in the unemployment rate of 12.2 percentage points, so to a level of around 16%, were all the newly unemployed looking for work. This is, however, not what we find. When we construct an unemployment rate in an analogous manner

as the BLS (i.e., define the unemployed as not working but looking for work),[1] we find an increase in the unemployment rate of only 2 percentage points. This reflects the fact that most of the newly unemployed surveyed are not looking for new work at this time, so they are defined as out of the labor force rather than unemployed. Correspondingly, we document an extraordinary decline in the labor force participation rate of nearly 8 percentage points. Much of this decline can be attributed to a rise in reported retirement on the part of respondents, consistent with older workers disproportionately leaving the labor force in light of heightened health risks from exposure to the coronavirus. In contrast, we do not see any meaningful change in households reporting that they are on break from work or only temporarily unemployed. In short, we find labor market changes that differ markedly from those of a typical recession in ways that suggest that the labor market impacts are likely to be even more long-lasting than those of recent recessions. The BLS counts workers on permanent or temporary layoffs as part of the labor force and unemployed. We do not count these workers as part of the labor force if survey participants state they are not actively looking for work, and hence don't add to labor market slack. Since these workers report a precise reason for why they are not searching, such as being on break, retired or looking after children, our survey design allows us to document the micro drivers for why people stop looking for jobs which provides valuable insights about the possible speed of the recovery. For example, because retirement is approximately an absorbing state, the surge in reported retirements may mean that we face a dire outlook for the speed of the economic recovery.

We relate to the fast-growing literature studying the economic consequences of the COVID-19 pandemic. In contemporaneous work, Bick and Blandin (2020) and Foote et al. (2020) provide real-time, high-frequency measures of the U.S. labor market following the CPS protocol, Beland et al. (2020) focus on changes in hours worked, wages and the unemployment rate in the U.S., and von Gaudecker et al. (2020) study labor market outcomes in the Netherlands and heterogeneity by education and employment, whereas Adams-Prassl et al. (2020) study the within and across country implications of COVID-19 on labor market outcomes. We differ from these studies in that we provide historical comparisons as benchmark (exploiting the panel component of our survey), in our focus on early retirement and the implications for the economic recovery, and the fact that we can study labor market dynamics across several survey waves. Our work is also related to previous studies of macroeconomic determinants of retirement decisions. For example, Gorodnichenko, Song and Stolyarov (2010) and Coile and Levine (2007) find that retirement (especially around normal retirement age) intensifies when unemployment is high. We document a similar pattern but the magnitudes are much larger in the current crisis.

[1] BLS classifies laid-off workers as unemployed even if they are not looking for a job. Our survey does not differentiate laid-off workers from other form of non-employment and so our measures of unemployment and labor force do not include laid-off workers who are not looking for a job.

II Measuring Labor Markets using the Nielsen Survey

We start by describing our customized Nielsen Homescan surveys and how they can be used to construct measures of labor market outcomes.[2] The pre-crisis wave of the survey was run between January 6th and January 27th 2020 prior to much of the COVID-19 outbreak. Potential participants (18+ years old) were those households participating in the Nielsen Homescan, which is a panel of 80,000-90,000 households who track their purchases on a daily basis. Nielsen allows for surveys to be emailed to those households and respondents receive points and prizes for participating in Nielsen surveys. The panel of households used by Nielsen is meant to be representative of the U.S. population in age, size, income, etc. Possible imbalances are corrected using weights provided by Nielsen. We received 18,344 responses to the first wave of the survey. The response rate (approximately 25%) compares favorably to the average response rates of commercial surveys. For example, Qualtrics, which is the most commonly used survey platform for online surveys, estimates a response rate between 5% to 10%.

In this and subsequent waves of the survey, we asked respondents several job-related questions. First, they were asked whether they have a paid job, with answers being either yes or no. Anyone answering yes we define as being employed. Note that this is slightly different from the BLS, which asks respondents whether they have worked in the survey reference week, and those who "did any work at all for pay or profit" are classified as employed. This means some respondents who would be classified as employed by the BLS are classified as non-employed using our question. Consistent with this, we find somewhat lower employment rates (as a share of adult population) in our pre-crisis data than was the case in corresponding BLS surveys. Table 1, for example, shows that the BLS was reporting an employment to population ratio of 61.1% in February 2020 while our survey yielded an employment-to-population ratio of 57.7%.

Respondents who said they did not have a paid job were then asked if they were actively looking for a job, with possible answers being yes or no. We define those who answer yes as unemployed while those who answer no are classified as out of the labor force. Again, this is slightly different from the BLS questionnaire, which asks individuals to select ways in which they had looked for jobs during the prior 4 weeks and only classifies individuals as unemployed if they select answers which indicate a sufficiently active search such as posting resumes, contacting potential employers or filling out applications (i.e., not just scanning newspaper ads). Given that we allow individuals to specify themselves if they are "actively" searching, one might expect that this would also lead to a higher prevalence of unemployment in our Nielsen survey than in the corresponding BLS survey. Consistent with this, our estimated aggregate unemployment rate prior to the crisis is 8.6% while the corresponding BLS estimates for January and February of 2020 were 3.6% and 3.5% respectively. The labor force participation rate, however, is very similar to that estimated by the BLS: 63.1% vs 63.3% respectively. We also want to note that the BLS issued additional guidance to Census Bureau interviewers starting in March due to the special situation and

[2] Our Nielsen survey builds on previous work using the Nielsen panelists to study the formation and updating of economic expectations (Coibion et al. (2019, 2020) and D'Acunto et al (2020a, b)).

the occurrence of many outliers because of the corona virus. Specifically, individuals that did not work during the reference week because of the corona virus are classified as unemployed on temporary layoff if the survey respondents think that they will be recalled to their jobs within a 6 months period. If they are uncertain, the BLS assumes that they will be recalled and classify them as unemployed.[3] Given the uncertainty about the speed of the economic recovery and the nature of jobs allowed to operate with lockdown restrictions only gradually lifted, these BLS procedures may overstate the degree to which people are in the labor force.

While some difference in levels is to be expected given that questions are not identical across the two surveys, it is important to verify that they are still capturing broadly similar features. We do so by comparing state-level estimates of all variables from both the pre-crisis BLS and Nielsen surveys. These are illustrated in Figure 1, which shows state level unemployment rates from the two surveys in Panel A, state level labor force participation rates in Panel B, and state level employment to population ratios in Panel C. All three figures yield a strong positive correlation: the two surveys identify the same states as having relatively high or low unemployment, labor force participation, and employment to population ratios.

Although we do not have long pre-crisis time-series in the survey to align the survey with BLS series, we can use cross-state variation to adjust for the initial difference in levels of unemployment that stems from the different questions asked in the surveys. Specifically, let $UE_{i,t}^{Nielsen}$ be the unemployment rate in state i in the Nielsen survey in year t and $UE_{i,t}^{BLS}$ be the unemployment rate in state i in the Current Population Survey (CPS) survey in month t. We run the following regression on the pre-crisis data (January 2020)

$$UE_{i,t}^{Nielsen} = b_0 + b_1 UE_{i,t}^{BLS} + error \quad (1)$$

and then use the estimated coefficients to adjust the Nielsen statistic for month s (January or April 2020) as

$$\widetilde{UE}_{i,s}^{Nielsen} = (UE_{i,s}^{Nielsen} - \hat{b}_0)/\hat{b}_1. \quad (2)$$

By construction, the average value of $\widetilde{UE}_{i,s}^{Nielsen}$ is now equal to the average value of $UE_{i,s}^{BLS}$ across states, which may still differ from the aggregate unemployment rate (which is a population-weighted average across states). We apply a similar procedure for employment-to-population ratios and labor force participation rates. The resulting adjusted measures of aggregate unemployment, labor force participation, and employment-to-population ratios pre-crisis from the Nielsen survey are presented in Table 1, column 4. For easier comparison to BLS numbers, we focus primarily on these adjusted measurements (applied to both waves of our survey) from now on.

III Labor Markets since the COVID-19 Crisis

A second survey was run on households participating in the Nielsen Homescan panel between the afternoon of April 2nd-8th, 2020. The response rate was 18.6% with 9,445 responses.[4] The same labor market questions were

[3] Please see https://www.bls.gov/cps/employment-situation-COVID19-faq-march-2020.pdf for details.

[4] If households participating in the previous wave reported that survey as being onerous to Nielsen, they were not sent subsequent waves of the survey. As a result, the pool of people receiving the second survey was smaller. We also use the survey responses submitted in the first week of April (the survey is fielded for two weeks) which further reduces the number

asked in both waves of the survey, so we can directly compare the two waves to get a sense of how labor markets have evolved since the onset of the COVID-19 virus and the associated policy responses. Table 1 summarizes results from the second wave of the survey. Our main results are as follows.

First, the employment-to-population ratio has declined sharply. Using the adjusted metrics described above, we find that the employment ratio fell from 60% of the population down to 52.2%, a nearly 8%-point decline (s.e. 0.7%). As illustrated in Panel C of Figure 2, this decline in employment is enormous by historical standards and is larger than the entire decline in the employment to population ratio experienced during the Great Recession. Given that the U.S. civilian non-institutional population is approximately 260 million, this drop in employment to population ratio is equivalent to 20 million people losing their jobs (the 90 percent confidence interval is 16.9 million to 23.1 million). This drop is even larger than the 16.5 million new unemployment claims over this time period.

Second, we find a much smaller increase in the unemployment rate. As documented in Table 1, the adjusted unemployment rate rose from 4.2% to 6.3%. Panel A of Figure 2 plots this rise relative to previous changes in unemployment over the last 15 years. While this increase is the single biggest discrete jump in unemployment over the time period, this change in unemployment corresponds only to about one-third of the increase observed during the Great Recession. For comparison with the employment to population ratio, if all twenty million newly unemployed people as measured by the decline in the employment to population ratio were counted in the unemployment rate, we would have found an increase in the unemployment rate from 4.2% to 16.4%, the highest level since 1939.

The reason for the discrepancy between the two is that many of the newly non-employed people are reporting that they are not actively looking for work, so they do not count as unemployed but rather as exiting the labor force (recall that in contrast to the BLS, we do not automatically count laid-off workers as unemployed). Consistent with this, we find an extraordinary decline in the adjusted labor force participation rate, from 64.2% to 56.8%. For comparison, Panel B of Figure 2 plots the historical evolution of the labor force participation rate over the last 15 years which includes a historically large decline in participation between 2008 and 2016 of 3 percentage points. Even this cumulatively large decline in participation over an eight-year period is dwarfed by the historic decline in participation that we document.

Figure 3 plots state-level changes in unemployment, labor force participation and employment to population ratios around the time of the COVID-19 crisis. The forty-five degree lines indicate no change. When looking at labor force participation rates and employment-to-population ratios, we see that almost all states fall below the 45 degree line, indicating the declines in each variable are widespread throughout the country and relatively homogenous in size. The change in unemployment across states is noisier, due in part to higher

of observations in the April wave. When we regress participation in the April wave on respondent/households characteristics (gender, age, (un)employment status, income, size, Nielsen's life-cycle classification, etc.), we find that some characteristics have statistically significant predictive power. However, the economic significance of this predictive power is small (R2 in the linear regression is about 0.01) and statistically significant coefficients reflect the large sample size rather than materially important differences in participation rates.

measurement error in measuring unemployment rates at local levels, but also indicates geographically dispersed increases in unemployment. Still, the pattern that comes out from state-level variation is one of broad-based declines in both employment and labor force participation across the country.

How unusual are these patterns? We have already seen that the size of the changes in each variable is exceptional, at least for employment and changes in labor force participation. What about their simultaneous changes? Figure 4 illustrates the historical comovement of the employment to population ratio with unemployment in Panel A and with labor force participation in Panel B. Panel A shows that, historically, unemployment and employment are very strongly negatively related. Within short periods, movements in one are reflected almost perfectly in the other as workers move from employment to unemployment and back. Slow-moving demographics cause the relationship to gradually change over time, as can be seen by decadal shifts in the curve, but short-run movements are close to linear. The change that we document since the COVID-19 crisis jumps out: we see an enormous change in the employment-to-population ratio with a much smaller change in unemployment that would have typically been expected. This pattern is therefore qualitatively different from the historical experience of U.S. labor markets, even after taking into account the size of the changes.

We find a less unusual pattern relative to historical experience when looking at the change in labor force participation and employment to population ratios in Panel B. There, we see that the two tend to commove positively and closely on average: periods when employment growth is strong are also periods during which more people are entering the labor force. In that sense, the simultaneous decline in employment and labor force participation is mostly unusual because of the size of the changes. Still, the drop in labor force participation appears large relative to the historical experience given the size of the decline in employment, which is consistent with the smaller than normal increase in unemployment.

Why do so many unemployed choose not to look for work? Both surveys included a question asking those who said they were neither working nor looking for a job to select among possible answers (not mutually exclusive) why this was the case. The results for both waves are presented in Table 2. Prior to the crisis, most respondents out of the labor force claimed that it was because they were retired, disabled, homemakers, raising children, students, or did not need to work. Only 1.6% of those out of the labor force were claiming that they could not find a job as one of their reasons for not searching. At the COVID-19 crisis progressed with a much larger number of people now out of the labor force, we see corresponding declines in the share of homemakers, those raising children and the disabled. There is little change in those indicating that they are on break or select "other reason," as might be done by those who expect to be recalled by their former employer. However, we see a large increase in those who claim to be retired, going from 53% to 60%. This makes early retirement a major force in accounting for the decline in the labor-force participation. Given that the age distribution of the two surveys is comparable, this suggests that the onset of the COVID-19 crisis led to a wave of earlier than planned retirements. With the high sensitivity of seniors to the COVID-19 virus, this may reflect in part a decision to either leave employment earlier

than planned due to higher risks of working or a choice to not look for new employment and retire after losing their work in the crisis.

To see this more clearly, we exploit the panel dimension of the survey and identify respondents who were out of the labor force in April 2020 but in the labor force in January 2020. Column (3) of Table 2 presents reasons for being out of the labor force reported by those who were *employed* in January. Of those, 28% report that they are now out of the labor force because of retirement. Similarly, of those who were *unemployed* in January and out of the labor force in April (column 4), 21% report that it is because they retired. And while 9% of those going from employment to out of the labor force between January and April report that they are on break from working (as might be the case for some affected by temporary work closures due to COVID-19), the equivalent proportion is 8% for those going from unemployment to out of the labor force, suggesting that these breaks are voluntary ones, not ones due to temporary work closings. In short, these results point to an unusual rise in the share of retirements accounting for the exceptional decline in labor force participation during this time period.

IV Distribution and Drivers of Retirement

To better understand which parts of the age distribution might drive the increase of retirees in our survey and whether economic incentives at least partially play a role, we plot in Panel A of Figure 5 the fraction of those claiming being retired (left scale) both in the pre-crisis wave (black, dashed) and in the crisis wave (red, solid) together with the difference between the two (blue, right scale). The crisis has shifted the whole distribution up, that is, for each part of the age distribution a larger fraction of the survey population now claims being retired. Hence, even for those that are well before retirement age, we see a large increase in early retirement. Moreover, a notable jump in the difference occurs at age 66 which is the first year people can claim retirement benefits without penalty from the social security administration (SSA).

Panel B follows the same structure but for the fraction of survey participants answering that they are not looking for a job because of disability. Here, the pre- and post-crisis lines do not show a general pattern with both lines crossing several times but we also see large spikes in the fraction being disabled during the crisis wave at ages 50 and 60 which are cut-off ages at which it becomes easier for individuals to claim disability benefits. Taken together, these results suggest that economic benefits could drive the decision to leave the labor force by retiring or claiming disability benefits. These results could also indicate that unemployment benefit extensions or increases in other welfare programs could decrease labor search intensities which would negatively affect a later recovery.

In Table 3, we report levels and changes in retirement status for various demographic groups. Unconditionally, we see a 4 percentage point increase in the fraction being retired which is predominantly driven by women in our survey who see a 5 percentage points increase. These results indicate a possible negative effect of the crisis on female labor force participation and possibly gender inequality. In addition, we see a large increase in the fraction of blacks entering retirement. Homeowners with mortgages and renters are also more likely to retire relative to homeowners without mortgage. As for education, we typically find that the most educated enter

retirement, both for women and men. Finally, we find general increases in the propensity of being retired for the whole income distribution with notable increases at the bottom and top of the income distribution.

Taken together, these results indicate that two different parts of the population drive the increase in retirement. On the one hand, the more vulnerable parts of the population, women and low-income individuals leave the labor force and enter retirement. On the other hand, highly educated and high income survey participants are also more likely to have moved into retirement during the crisis wave relative to the pre-crisis wave.

V Summary

It is still very early on in the COVID-19 crisis, but preliminary indicators point toward catastrophic declines in employment. Our surveys provide additional evidence on this decline in employment, pointing to a 20 million decline in the number of employed workers through April 2020. Most strikingly, we find a much less than proportional increase in unemployment, indicating that most of these newly unemployed workers are not looking for new work. Hopefully this reflects a transitory characteristic as these individuals face shelters-at-home and few work opportunities. But the wave of early retirements that we document suggests that more permanent changes may already be taking place.

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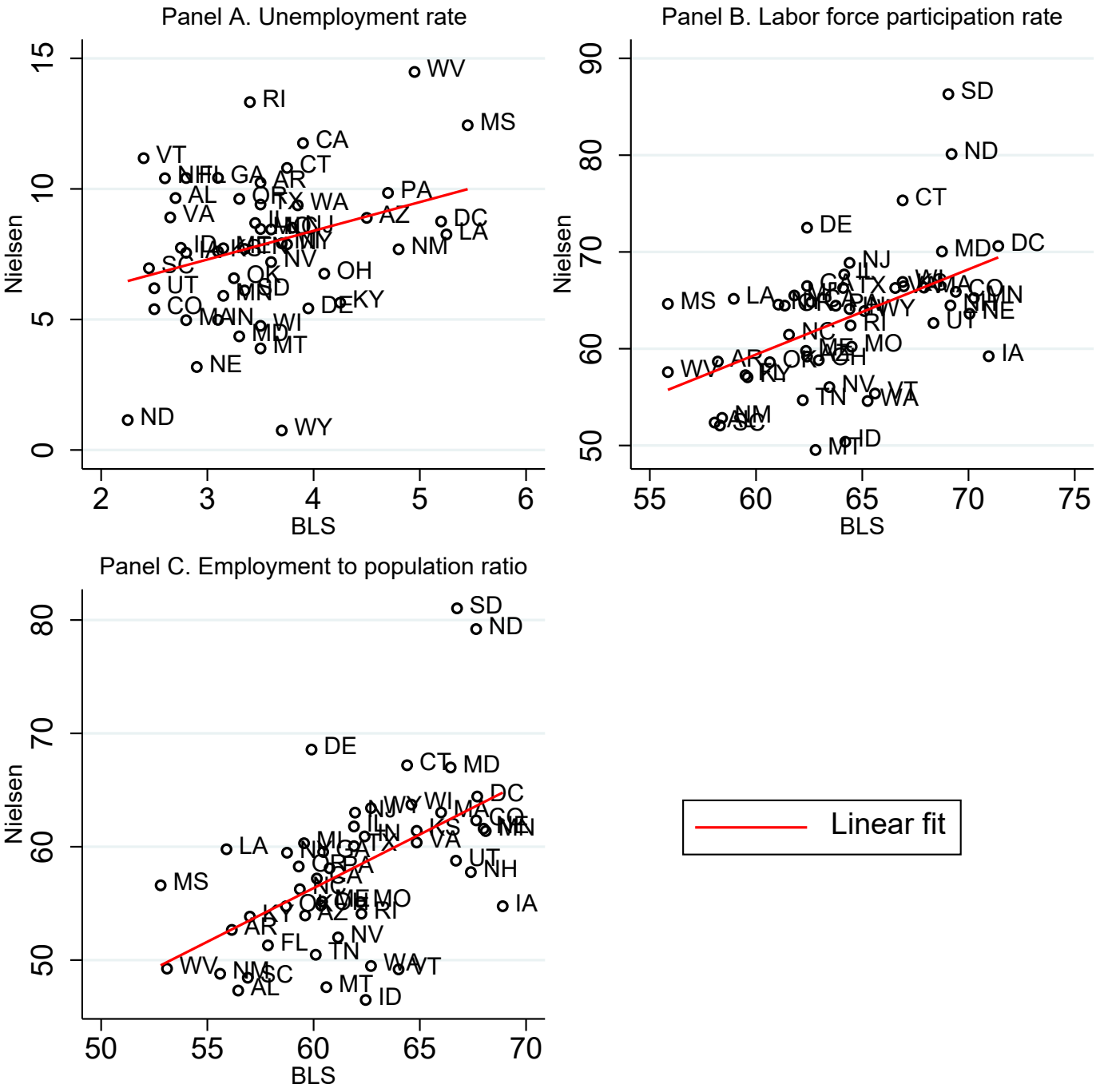
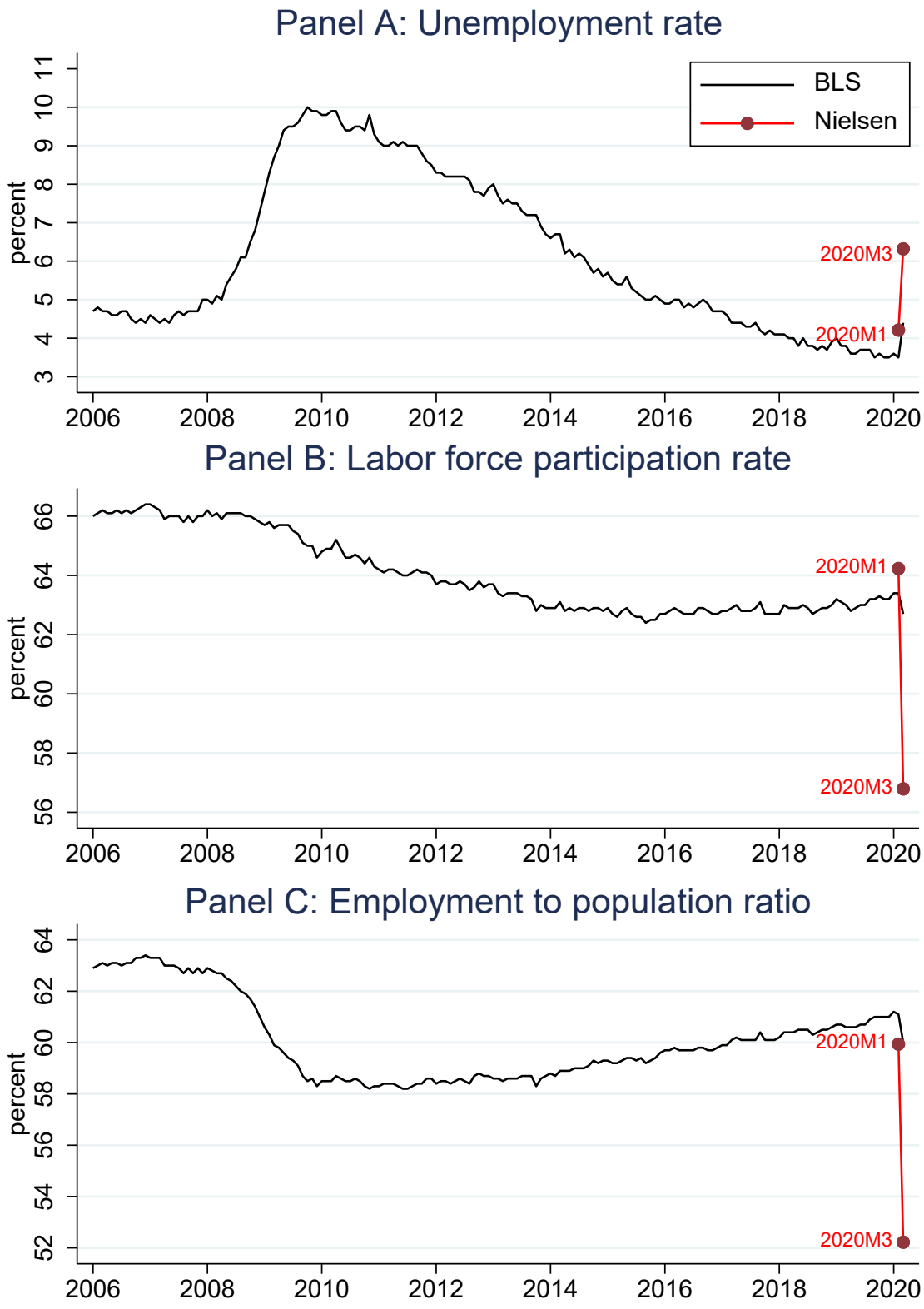
Figure 1: Pre-crisis employment statistics at the state level.



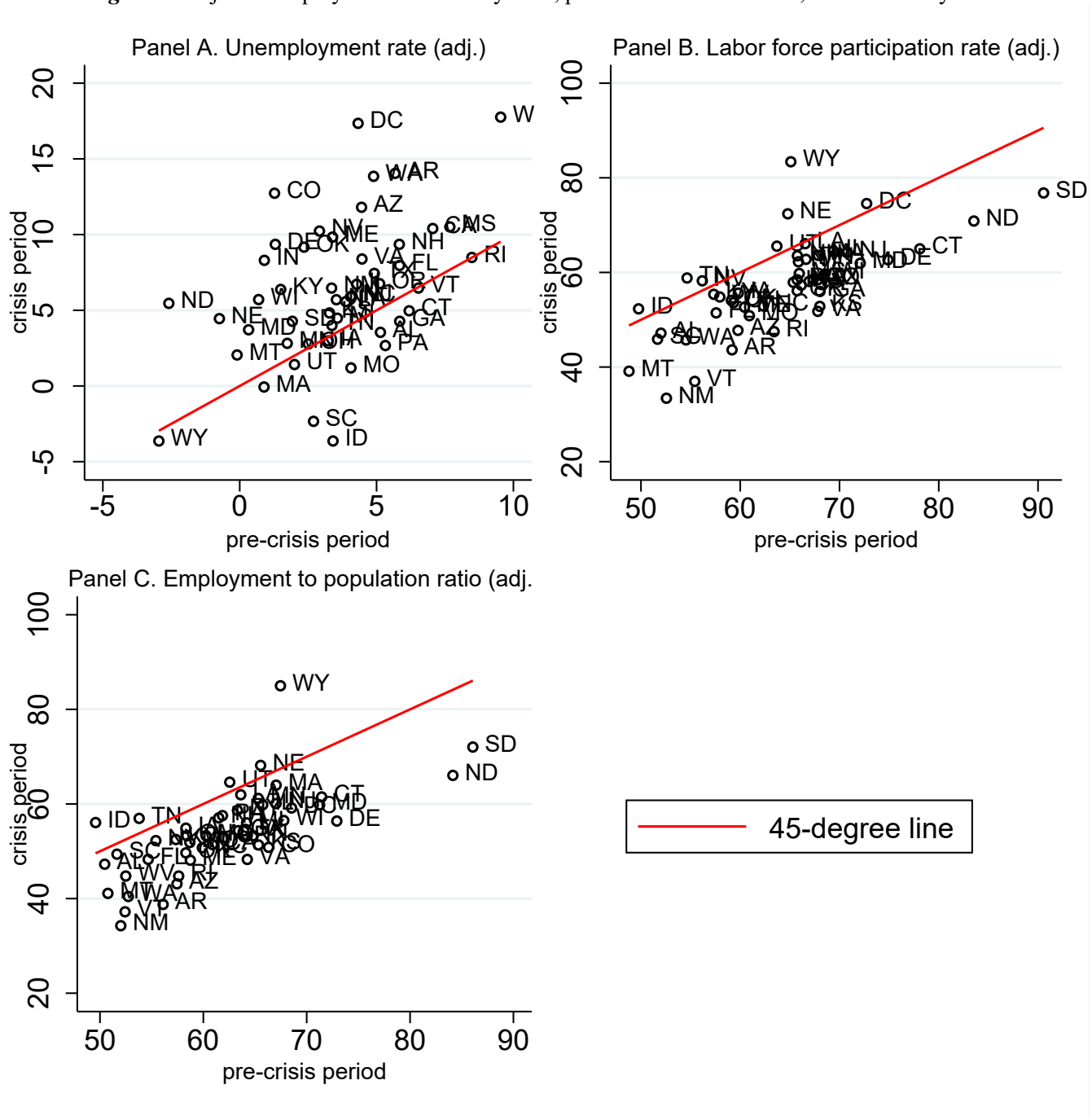
Notes: Bureau of Labor Statistics (BLS) data refer to the January-February 2020 period. Nielsen data are for the pre-crisis wave of the survey.

Figure 2. Time series of key employment statistics.



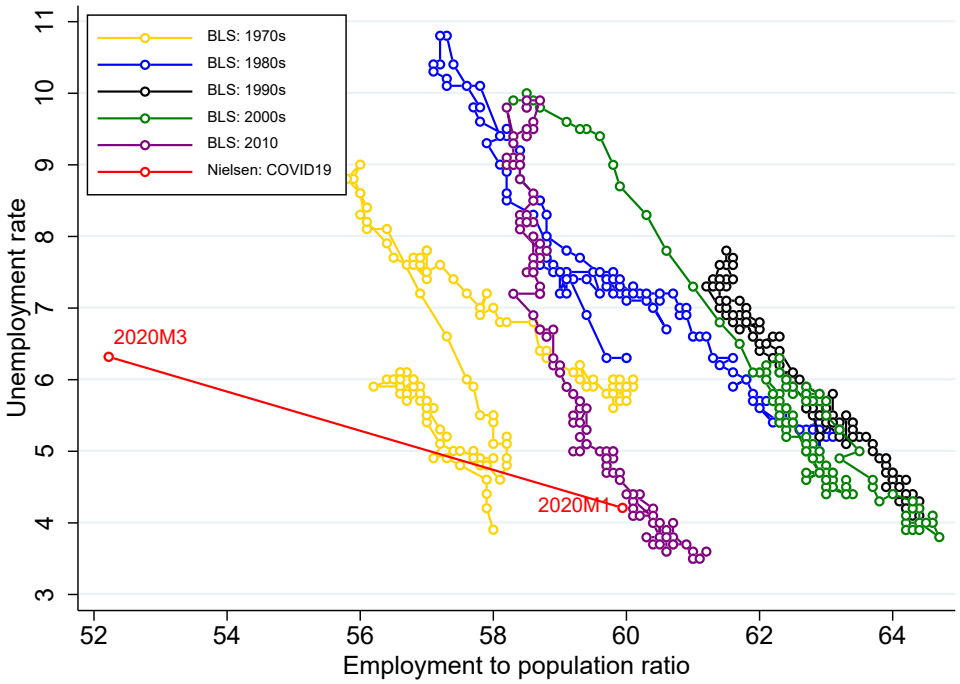
Notes: Each panel plots monthly time series of an employment statistic. The black, solid line shows data from the Bureau of Labor Statistics (BLS). The red, solid line with circles shows the corresponding values from the Nielsen survey. 2020M2 are the values from the Nielsen pre-crisis survey. 2020M3 are the values from the Nielsen crisis wave.

Figure 3. Adjusted employment statistics by state, pre-crisis vs. crisis levels, Nielsen survey.

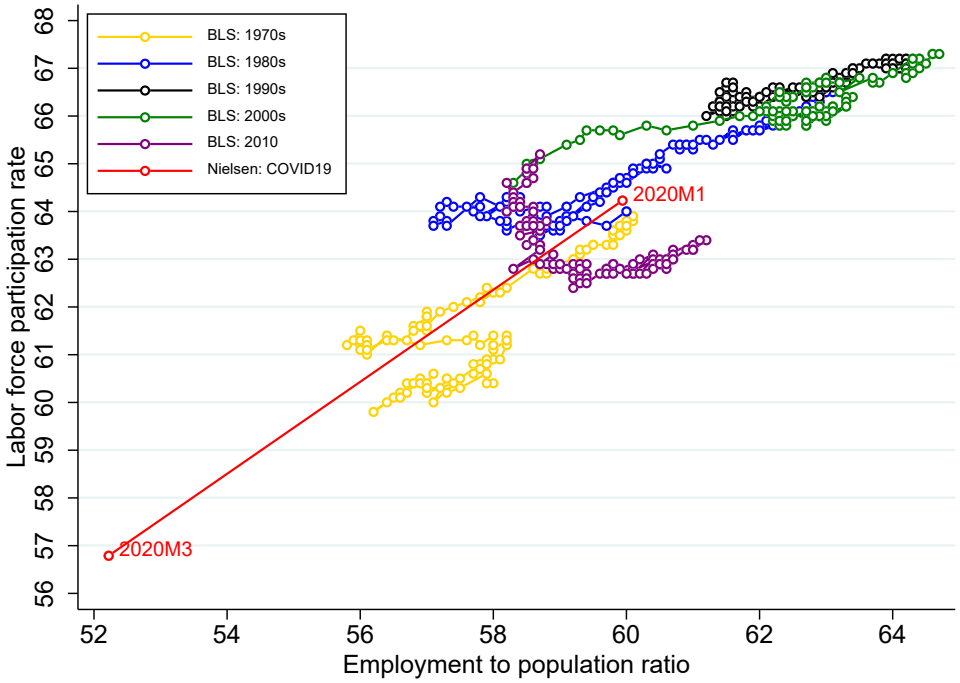


Notes: Nielsen employment statistics are adjusted to match average pre-crisis levels observed in the official data compiled by the Bureau of Labor Statistics (BLS). The adjustment is described in equations (1)-(2).

Figure 4. Historical comovement of key employment statistics.
Panel A: Employment-to-population ratio vs Unemployment rate.



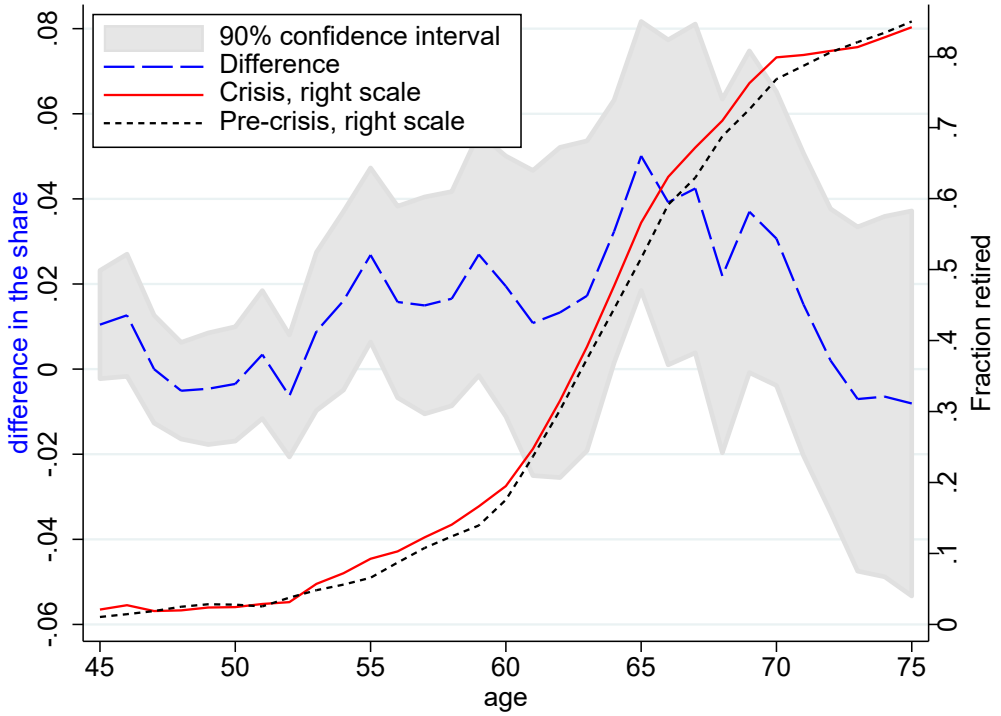
Panel B: Employment-to-population ratio vs Labor force participation rate.



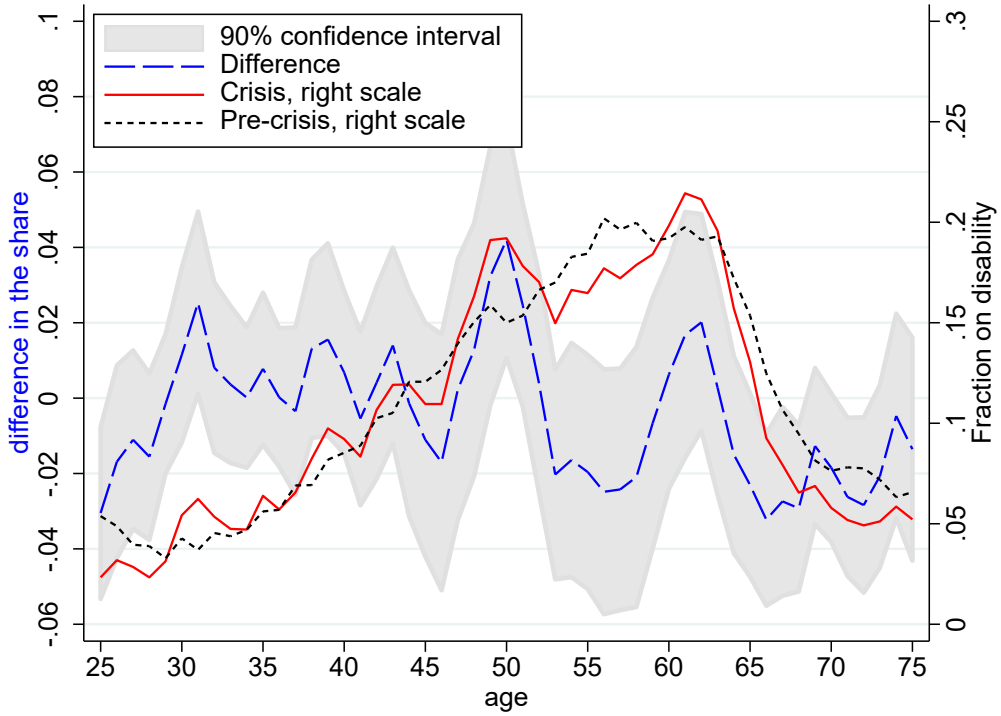
Notes: Each panel shows comovement (by decade) of key official employment statistics compiled by the Bureau of Labor Statistics (BLS) as well as employment statistics based on Nielsen surveys (red circles with dates). 2020M2 are the values from the Nielsen pre-crisis survey. 2020M3 are the values from the Nielsen crisis wave.

Figure 5. Age Distribution

Panel A: Retirement by age (3-year moving average).



Panel B: Disability by age (3-year moving average).



Notes: each panel plots fractions of population claiming retirement (Panel A) or disability (Panel B) by age as a reason of non-employment in the Nielsen survey. Red, solid line shows the distribution in the pre-crisis wave of the survey (right scale). Black, dashed line shows the distribution in the crisis (April) wave of the survey (right scale). The blue, long-dash line shows the difference in the distributions (left scale). Bootstrap 90% confidence interval for the difference is shown by the shaded area.

Table 1. Employment statistics at the state and aggregate levels, Nielsen survey.

	BLS pre-crisis	Nielsen			
		Raw moments		Adjusted moments	
		pre-crisis	crisis	pre-crisis	crisis
	(1)	(2)	(3)	(4)	(5)
Panel A. State-level data (average)					
Unemployment rate	3.52	7.84	10.93	3.50	6.30
	(0.84)	(2.80)	(5.07)	(2.55)	(4.61)
Labor force participation rate	63.91	62.89	56.94	63.97	57.20
	(3.94)	(7.19)	(8.58)	(8.17)	(9.75)
Employment to population ratio	61.67	58.00	50.77	61.74	54.11
	(4.03)	(7.27)	(8.63)	(7.68)	(9.12)
Panel B. Aggregate level					
Unemployment rate	3.5	8.62	10.95	4.21	6.32
		[0.25]	[0.43]	[0.23]	[0.39]
Labor force participation rate	63.4	63.13	56.57	64.23	56.79
		[0.33]	[0.51]	[0.38]	[0.58]
Employment to population ratio	61.1	57.68	50.38	59.94	52.22
		[0.34]	[0.52]	[0.36]	[0.54]

Notes: Panel A report statistics across states. Averages are in the top row of each subsection and standard deviations are in the bottom rows (in parentheses) of each subsection. Panel B reports statistics for the aggregate level. Point predictions are reported in the top row of each subsection and standard errors are reported in the bottom rows (in square brackets) of each subsection. Column (1) reports pre-crisis data from the Bureau of Labor Statistics (BLS), average values for January-February 2020. These data are based on the Current Population Survey (CPS). Columns (2) and (3) report moments for the Nielsen survey unadjusted for possible differences in design between the CPS and Nielsen surveys. Columns (4) and (5) report moments for the Nielsen survey adjusted for possible differences in design between the CPS and Nielsen surveys. Adjustment is based on state-level regressions and is given by equations (1)-(2).

Table 2. Reasons for not looking for a job (for those who do not have a job).

Reason	Share of people choosing a reason			
	All people		Employed pre-crisis, out of labor force in crisis	Unemployed pre-crisis, out of labor force in crisis
	Pre-crisis	Crisis		
	(1)	(2)	(3)	(4)
Homemaker	0.204	0.155	0.158	0.244
Raising children	0.125	0.082	0.115	0.222
Student	0.023	0.018	0.050	0.019
Retiree	0.527	0.595	0.277	0.210
Disabled, health issues	0.297	0.261	0.142	0.144
Couldn't find a job	0.016	0.018	0.061	0.133
On break	0.012	0.011	0.092	0.080
No financial need	0.049	0.037	0.039	0.029
None of the above	0.026	0.034	0.352	0.184

Notes: the Nielsen survey question is "Here are a number of possible reasons why people who are not working choose not to look for work. **Please select all that apply to you**." This question is asked for people who do not have a job and are not looking for a job (i.e. out of the labor force). Columns 1 and 2 report the fraction of respondents who are not working and not looking for a job that select each response. Column 3 reports, for those individuals who were employed in the first wave but out of the labor force in the second wave, the reasons reported by those individuals why they are not looking for work. Column 4 reports equivalent results for individuals who were unemployed in the first wave and out of the labor force in the second wave.

Table 3. Retirement by demographic characterstics

Demographic characteristic	Demographic group	Pre-crisis	Crisis	Difference
All	All	0.25	0.29	0.04
		(0.01)	(0.01)	(0.01)
gender	Male	0.29	0.31	0.02
		(0.01)	(0.02)	(0.02)
	Female	0.23	0.28	0.05
		(0.01)	(0.01)	(0.01)
race	White	0.25	0.29	0.04
		(0.01)	(0.01)	(0.01)
	Black	0.24	0.32	0.08
		(0.02)	(0.03)	(0.04)
	Asian	0.35	0.26	-0.09
		(0.06)	(0.06)	(0.08)
	Other	0.26	0.26	-0.00
		(0.03)	(0.04)	(0.06)
Housing situation	Own our house/apartment without a mortgage	0.34	0.34	0.01
		(0.01)	(0.01)	(0.02)
	Own our house/apt. and have a fixed-rate mortgage	0.22	0.26	0.04
		(0.01)	(0.01)	(0.02)
	Own our house/apt. and have a variable-rate mortgage	0.15	0.23	0.08
		(0.04)	(0.06)	(0.07)
	Rent our house/apartment	0.20	0.24	0.04
		(0.02)	(0.02)	(0.02)
	Other	0.14	0.28	0.13
		(0.03)	(0.05)	(0.06)
Household income	Under $5000	0.24	0.26	0.02
		(0.06)	(0.08)	(0.10)
	$5000-$7999	0.24	0.31	0.07
		(0.08)	(0.09)	(0.12)
	$8000-$9999	0.24	0.21	-0.03
		(0.06)	(0.06)	(0.09)
	$10,000-$11,999	0.24	0.26	0.02
		(0.05)	(0.06)	(0.08)
	$12,000-$14,999	0.27	0.29	0.02
		(0.04)	(0.05)	(0.07)
	$15,000-$19,999	0.31	0.35	0.04
		(0.04)	(0.04)	(0.06)
	$20,000-$24,999	0.31	0.31	0.00
		(0.03)	(0.04)	(0.05)
	$25,000-$29,999	0.33	0.36	0.03
		(0.04)	(0.04)	(0.05)
	$30,000-$34,999	0.28	0.32	0.03
		(0.03)	(0.03)	(0.05)
	$35,000-$39,999	0.30	0.30	-0.01
		(0.03)	(0.04)	(0.05)
	$40,000-$44,999	0.26	0.29	0.02
		(0.04)	(0.04)	(0.06)
	$45,000-$49,999	0.25	0.26	0.01
		(0.03)	(0.04)	(0.05)
	$50,000-$59,999	0.30	0.35	0.05
		(0.03)	(0.03)	(0.04)
	$60,000-$69,999	0.21	0.24	0.04
		(0.02)	(0.03)	(0.04)
	$70,000-$99,999	0.25	0.29	0.04
		(0.02)	(0.02)	(0.03)
	$100,000 +	0.22	0.25	0.03
		(0.01)	(0.02)	(0.02)

(continued on the next page)

Demographic characteristic	Demographic group	Pre-crisis	Crisis	Difference
Male head education	No head	0.22	0.27	0.05
		(0.01)	(0.02)	(0.02)
	Grade School	0.14	0.13	-0.02
		(0.08)	(0.12)	(0.15)
	Some High School	0.19	0.22	0.03
		(0.04)	(0.05)	(0.06)
	Graduated High School	0.27	0.28	0.01
		(0.02)	(0.02)	(0.03)
	Some College	0.30	0.30	-0.00
		(0.02)	(0.02)	(0.03)
	Graduated College	0.27	0.34	0.07
		(0.02)	(0.02)	(0.03)
	Post College Grad	0.24	0.29	0.05
		(0.03)	(0.03)	(0.04)
Female head education	No head	0.28	0.28	0.00
		(0.02)	(0.02)	(0.03)
	Grade School	0.29	0.29	-0.01
		(0.14)	(0.18)	(0.23)
	Some High School	0.26	0.34	0.09
		(0.05)	(0.08)	(0.10)
	Graduated High School	0.27	0.28	0.01
		(0.01)	(0.02)	(0.02)
	Some College	0.25	0.29	0.04
		(0.01)	(0.02)	(0.02)
	Graduated College	0.22	0.29	0.06
		(0.02)	(0.02)	(0.02)
	Post College Grad	0.21	0.33	0.12
		(0.02)	(0.03)	(0.04)

Notes: The table reports levels of retirement by survey wave (crisis and pre-crisis) as well as the difference between the waves. The econometric specification is $Retired_{it} = b_0 * 1\{precrisis\ wave\} + b_1 * 1\{crisis\ wave\} + error$. The sample is restricted to ages [55,66].