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Poschingerstr. 5, 81679 Munich, Germany

Telephone +49 (0)89 2180-2740, Telefax +49 (0)89 2180-17845, email office@cesifo.de

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Abstract

The official U.S. unemployment rate is an inadequate measure of actual labor market conditions. This poses a major challenge for researchers and confuses both the public and policy makers. A new definition of unemployment is proposed. It considers those part-time workers who would like to work full time as 62.7% employed and 37.3% unemployed, inasmuch as this is the proportion of time they worked relative to full-time workers prior to the pandemic. In addition, in contrast to the BLS, we consider those workers who are wanting to work but have not searched for work within the prior month as being unemployed. We find that the actual unemployment rate in May 2020 was 24.4% or 183% of the headline rate of 13.3%.

JEL-Codes: B400, C820, J400, J490, J690.

Keywords: covid-19, pandemic, unemployment rate, labor market slack, discouraged workers, involuntary part-time workers.

*John Komlos
University of Munich
Ludwigstrasse 33/IV
Germany – 80639 Munich
John.Komlos@gmail.com*

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In order to estimate the true unemployment rate accurately for May 2020, part-time workers should not be conflated with full-time workers. (The BLS does a simple head count by considering part-time workers the equivalent of full-time workers.)¹ Instead, we calculate the unemployment rate standardized on a full-time-equivalent workweek of 39 hours. So, we first estimate the hours worked by part-time and full-time workers and find that the average for 2019 was 62.7%.² Hence, only 62.7% of the total number of part-time workers is added to the labor force (Table 1, row 2).

However, there are two kinds of part-time workers: those who are content working part time (voluntary part-time workers, denoted by v), and those who would like to work full time but have not found such an employment (involuntary part-time workers, denoted by i).³ The former (v) are considered the equivalent to 0.627 full-time member of the labor force and are not counted as unemployed (row 2). In contrast, the involuntary part-time workers are considered full members of the labor force. Thus, they are considered 62.7% employed (row 2) and 37.3% unemployed (in terms of full-time equivalents) (row 9).⁴

Table 1 about here

Furthermore, there is no reason to exclude those who work for the military (as there was when soldiers were drafted) since they do work for the government and receive a salary just like other government workers, and they do work full time. Hence, we include their number as well in the labor force (denoted by m) (row 3). To this we add the number of actually unemployed, the calculation of which is discussed below (denoted by ru) (rows 4 and 12).⁵ This yields a total effective (full-time equivalent) labor force of 168.1 million (denoted by lf): $lf = (ft - 3.7) + 0.627*(v + i) + m + ru$. This estimate is 9.9 million above the official figure, on account of the large number of people who are excluded from the official estimate, because they ceased looking for work (row 10) (FRED, series CLF16OV).

The actual number of people unemployed consist of those who are officially unemployed. Contrary to the BLS, we separate those who used to work full time ($ou1$) from those who used to work part time ($ou2$) (rows 6 and 7).⁶ The latter are considered 62.7% unemployed insofar as they worked less than those who were employed full time prior to becoming unemployed. Next we those who were furloughed but not counted as unemployed since they were misclassified as being absent from work (row 8). Then we add 37.3% of those who are working part time

involuntarily (*i*) since they would like to work full time (row 9). This adds 2.4 percentage points to the unemployment rate. In contrast, the BLS excludes them from the official unemployment rate (U3) but includes them in the U6 rate. So, according to the BLS's binary conceptualization, they are either fully employed in U3 or fully unemployed in U6. Hence, our definition is in between these two extremes.

Next, we add the number of those who want to work but have not looked for work within the previous month (denoted by *ww*) (row 10). The self-employed are not considered unemployed at all, although many of them must have been part of the gig economy, so we assume that they were unemployed at the rate of the rest of the labor force (row 11). Hence, $ru = ou1 + ou2 + f + 0.373 * i + ww + se$. The estimated number of unemployed in May 2020 becomes 41.0 million. so the *actual* unemployment rate is 24.4% (ru/lf) (row 12); this is 11.1% above or 183% of the *official* unemployment rate of 13.3% and even 3.2% above the U6 rate. (rows 13 and 14)⁷ This implies that the hidden unemployment rate ($hu = ru - ou$) is 11.1%, i.e., 19.2 million full-time equivalent workers. This is not a benign margin of error.

Revisions of the official rate abound. Some are lower than the one presented here: in the 16.4%-19.7% range (Groschen, 2020a, 2010b; Gould, 2020). However, using a slightly different approach Faberman and Rajan's estimate is higher, at 30.7% (for April), compared to the official rate of 14.7% for April, while Cajner et al. document a 22% decline in employment by mid-April (Faberman and Rajan, 2020; Cajner et al., 2020).⁸ Coibion et al., emphasize that the 20 million jobs lost in April was much larger than the unemployment claims (Coibion et al., 2020). These are all below the 32.1% forecasted in March for the second quarter (Faria-e-Castro, 2020).

The restrictive nature of the BLS definition of unemployment implies that the *official* rate is woefully inadequate, serves political purposes, and confuses the public (Ahn and Hamilton, 2019; Leonhardt, 2018; Morgenstern, 1963, p. 238). The above evidence highlights the extent to which the *official* unemployment rate provides an untenably misleading impression of the labor market. The cavalier treatment of such a bellwether indicator is a major oversight and past its sell-by-date.

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Table

	Labor Force	Millions	Percent
1	Civilian labor force full time (<i>ft</i>)	116.5	
2	Work Part-time (0.627*20.7 million) (<i>v+i</i>)	13.0	
3	Military (<i>m</i>)	1.3	
4	Really Unemployed (<i>ru</i>)	41.0	
5	Total <i>actual</i> labor force (<i>lf</i>)	168.1	
	Unemployed		
6	Official unemployed, full time (<i>ou1</i>)	15.9	9.5%
7	Official unemployed, part time (<i>ou2</i>) 5.9*0.627	3.7	2.2%
8	Furloughed - Missclassified as Absent from Work (<i>f</i>)	4.7	3.0%
9	Part-time involuntary (0.373* 10.63 million) (<i>i</i>)	4.0	2.4%
10	Want job, did not look (<i>ww</i>)	9.0	5.3%
11	Self-employed (15.5 million * 0.227) (<i>se</i>)	3.7	2.2%
12	Total <i>really</i> unemployed (<i>ru</i>)	41.0	24.4%
13	Hidden Unemployment (<i>hu</i>)	19.2	11.1%
14	U6		21.2%

Note: Data are from the Federal Reserve Bank of St. Louis except otherwise noted. The various series are: Line 1) full time workers: LNS12500000; 2) part-time workers [LNS12600000] worked only 62.7% as many hours as full-time workers in 2019; 3) see below; 4) from row 12; 5) sum of rows 1-4, 6-7) BLS, 2020, Table A-2; 8) number of workers misclassified as absent from work although they were furloughed and therefore unemployed (BLS, 2020, p. 6); 9) LNS12032194, 10) NILFWJN 11) We assume that a share of the self-employed were also unemployed at the overall rate of unemployment; 12) sum of 6 – 10.

The Military data on line 3 is from: U.S. Department of Defense. "Number of Military and DoD Appropriated Fund (APF) Civilian Personnel Permanently Assigned," 31 December 2017, and (Coleman, 2015).

See also: Bureau of Labor Statistics, Table A-1. Employment status of the civilian population by sex and age; Table A-8. Employed persons by class of worker and part-time status; Table A-15. Alternative measures of labor underutilization; series LNS15026639.

Part-time workers worked about 62.7% as much as full-time workers before the pandemic. They are divided into two groups: those who are content with working part time (row 2), and those who would like to work full time but have not found full-time employment (row 3). So, 62.7% of the number of part-time workers who are content to work part time is added to the labor force (row 2). However, the involuntary part-time workers are considered a full member of the labor force. Only 62.7% of their number is added to the labor force in row 2, inasmuch as the other 37.3% is considered unemployed and therefore is included in the labor force in rows 4, 9 and 12.

Endnotes

¹ As long as an individual works one hour per week, she is considered employed. Between 1976 and 1994 part time workers were considered the equivalent of ½ of full-time workers (Bregger and Haugen, 1995; Shiskin, 1976).

² BLS, “Labor Force Statistics from the Current Population Survey, Table 19. “Persons at work in agriculture and nonagricultural industries by hours of work,”

<https://www.bls.gov/cps/lfcharacteristics.htm#fullpart> accessed May 21, 2020. Here we follow the calculations that were done for the European Union (Brandolini and Viviano, 2016).

³ Data on involuntary part-time workers is published by the BLS on the basis of the current population survey. Involuntary part-time workers are also referred to as part-time for “economic reasons”; <https://data.bls.gov/timeseries/LNS12032194> accessed May 24, 2020.

⁴ Cajner et al. also suggest that involuntary part-time workers “should be appropriately weighted when compared to other standard measures of underemployment” (Cajner et al., 2014).

⁵ The 3.7 million self-employed estimated as unemployed is deducted from row 5 because they are presumably included on row 1 (Table 1, row 11) is subtracted

⁶ This does not equal the official number of unemployed because I count the part-time unemployed as a 62.7% full-time equivalent unemployed. Rows 6 and 7 do not add up to the official unemployment rate because the our labor-force estimates also differ.

⁷ The U6 rate includes involuntary part-time workers as well as the so-called “marginally attached” workers (Current Population Survey).

⁸ Bell and Blanchflower also estimate a 20% unemployment rate for April (Bell and Blanchflower, 2020).