Appendix – Not for Publication

The Ins and Outs of Involuntary Part-time Employment

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C Involuntary Part-time Employment in the CPS

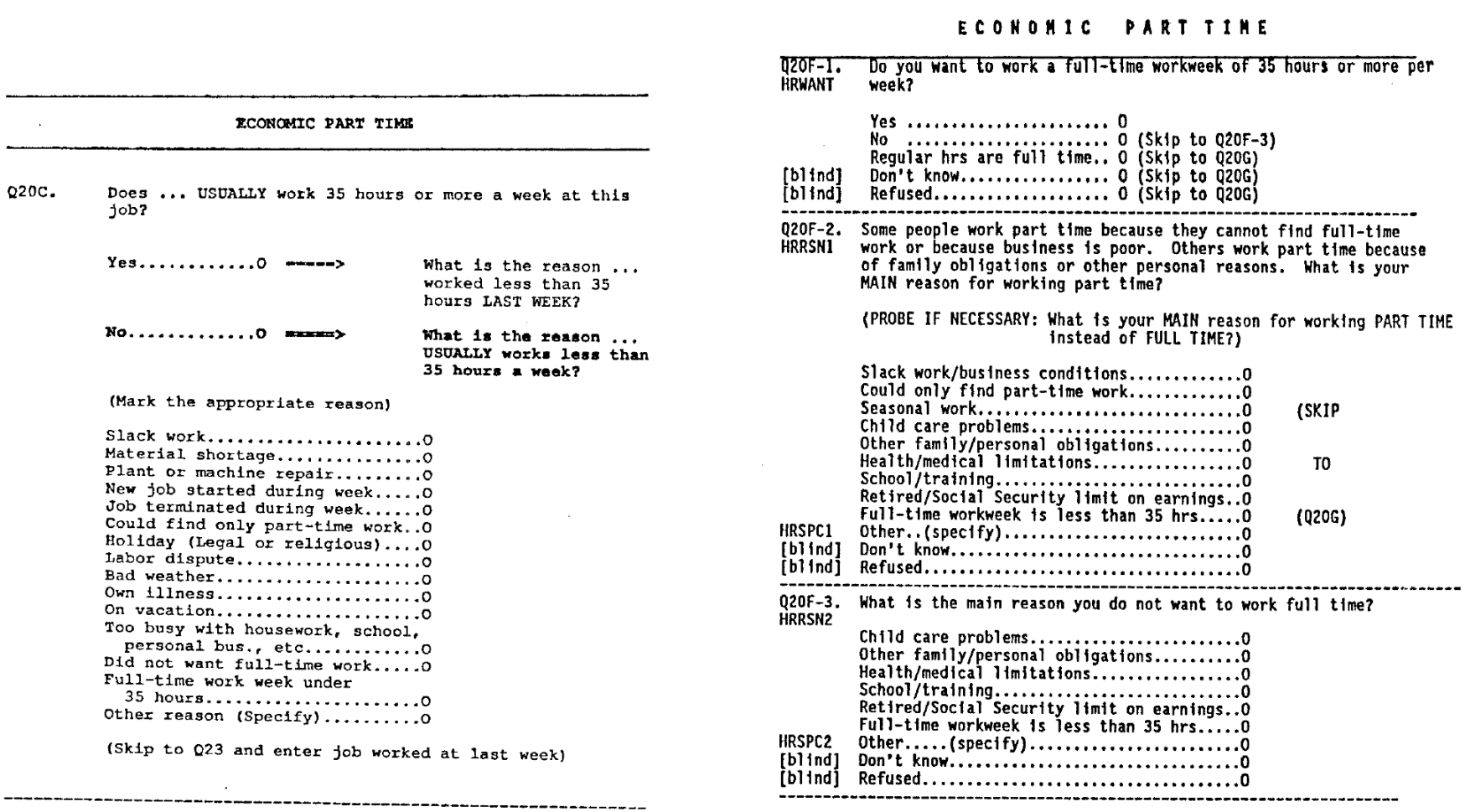
Figure C1 presents extracts from the old and revised CPS basic monthly questionnaires pertaining to the measurement of involuntary part-time employment (see U.S. Bureau of the Census [2017]). There are several differences between the old and the revised survey. First, in the pre-1994 questions, respondents are not asked whether they want to work full-time. Second, the revised questionnaire contains instructions aimed at eliciting the respondent's main reason for working part-time. In the pre-1994 questions, on the other hand, there is a distinction between the reason for working less than 35 hours during the reference week of the survey and the reason for usually working less than 35 hours per week. Third, certain categories (e.g., 'Material shortage', 'Plant or machine repair') disappear in the revised survey. Fourth, the structure of the revised questionnaire distinguishes two groups of voluntary part-time workers: those who want to work full-time and those who do not.

We should note that the Earner Study questions administered to the Outgoing Rotation Group (ORG) samples are subjected to the changes shown in Figure C1, meaning that the measurement of involuntary part-time work is also discontinued in 1994 in the ORG files. Besides this, there are other reasons why caution is needed when using the ORG files of the CPS to construct time series of part-time employment that extend back beyond 1994. In Borowczyk-Martins and Lalé [2019], we documented how the time series properties of part-time employment are affected by: (i) imputation methods used by the Bureau of Labor Statistics to deal with missing information on hours worked, and (ii) the question about usual hours being moved forward from the Earner Study questions to the main questionnaire as part of the CPS 1994 redesign.

D Additional Robustness Checks

D.1 Regression window

To construct our series of stocks and flows, in step 1 of the adjustment protocol we regress data from the basic monthly (BM) files of the CPS against data from the Annual Social and Economic Supplement (ASEC) (equation (4) of the main text). To run this regression, we use data covering the period from 1994 until 2007. This is our preferred approach because the correlation between the BM-based and ASEC-based time series seems very stable during this period. However, our results are similar if we change the time window used to run this regression. To illustrate this, we study stocks and flows that are constructed using alternative regressions windows. Specifically, we perform



ECONOMIC PART TIME

Q20C. Does ... USUALLY work 35 hours or more a week at this job?

Yes.....0 ------> What is the reason ... worked less than 35 hours LAST WEEK?

No.....0 ------> What is the reason ... USUALLY works less than 35 hours a week?

(Mark the appropriate reason)

Slack work.....0
Material shortage.....0
Plant or machine repair.....0
New job started during week.....0
Job terminated during week.....0
Could find only part-time work..0
Holiday (Legal or religious)....0
Labor dispute.....0
Bad weather.....0
Own illness.....0
On vacation.....0
Too busy with housework, school, personal bus., etc.....0
Did not want full-time work.....0
Full-time work week under 35 hours.....0
Other reason (Specify).....0

(Skip to Q23 and enter job worked at last week)

(a) Old CPS questionnaire

ECONOMIC PART TIME

Q20F-1. HRWANT Do you want to work a full-time workweek of 35 hours or more per week?

Yes 0
No ..... 0 (Skip to Q20F-3)
Regular hrs are full time.. 0 (Skip to Q20G)
[blind] Don't know..... 0 (Skip to Q20G)
[blind] Refused..... 0 (Skip to Q20G)

Q20F-2. HRRSN1 Some people work part time because they cannot find full-time work or because business is poor. Others work part time because of family obligations or other personal reasons. What is your MAIN reason for working part time?

(PROBE IF NECESSARY: What is your MAIN reason for working PART TIME instead of FULL TIME?)

Slack work/business conditions.....0
Could only find part-time work.....0
Seasonal work.....0 (SKIP
Child care problems.....0
Other family/personal obligations.....0
Health/medical limitations.....0 TO
School/training.....0
Retired/Social Security limit on earnings..0
Full-time workweek is less than 35 hrs.....0 (Q20G)
HRSPC1 Other..(specify).....0
[blind] Don't know.....0
[blind] Refused.....0

Q20F-3. HRRSN2 What is the main reason you do not want to work full time?

Child care problems.....0
Other family/personal obligations.....0
Health/medical limitations.....0
School/training.....0
Retired/Social Security limit on earnings..0
Full-time workweek is less than 35 hrs.....0
HRSPC2 Other.....(specify).....0
[blind] Don't know.....0
[blind] Refused.....0

(b) Revised CPS questionnaire

Figure C1: Involuntary part-time employment: Old vs. revised CPS

a variance decomposition using data based on the regression window 2008-2019. We repeat the same exercise with data based on the regression window 1994-2019. The results are displayed in Columns 2 and 3 of Table D1, while in Column 1 we report the beta coefficients based on the baseline regression window (1994-2007) to facilitate comparisons.[1] As can be seen, the alternative regressions windows yield results that are virtually identical to the baseline ones.

D.2 Definitions and samples

The baseline results are based on specific definitions of part-time employment and sample dispositions. Those are ultimately analytical choices, so in this section we present results based on alternative definitions and samples. In Column 5 of Table D1, we use a 30 hours cutoff to define part-time employment. In Column 6, we revert to the baseline definition of part-time employment (i.e., a threshold of 35 hours per week) and clear the sample from workers who hold two or more jobs at the same time (a.k.a. multiple jobholders, who account for between 5 and 6 percent of total employment). Due to data availability reasons, we are able to assess the sensitivity of our results to those choices only during the post-1994 period. Therefore in Column 4 of Table D1 we report the beta coefficients calculated using data from the period 1994 until 2019.

The numbers reported in Columns 4 to 6 of Table D1 convey a similar picture of involuntary part-time work dynamics as the one from the baseline definition and sample using data starting in January 1976: cyclical variation in involuntary part-time work is predominantly explained by fluctuations in transitions to and from other forms of employment.[2] Some additional remarks are worth making. First, restricting the sample to the post-1994 period exacerbates the role of full-time employment inflows at the expense of voluntary part-time employment flows (Column (4) compared with Column (1)). This effect can be directly attributable to the greater weight given to the evolution of workers flows during the Great Recession. Second, using a threshold of 30 hours to define part-time employment lowers the variance contribution of the outflows to full-time employment. Closer examination of the data shows that part of the cyclical variation in involuntary part-time employment occurs among workers who add in one more day of work per week, switching from 32 to 40 hours of work per week. With the definition used in Column (5), these transitions do not contribute to the dynamics of involuntary part-time employment.

References

Daniel Borowczyk-Martins and Etienne Lalé. Employment adjustment and part-time work: Lessons from the United States and the United Kingdom. *American Economic Journal: Macroeconomics*, 11(1):389–435, January 2019.

U.S. Bureau of the Census. CPS technical documentation. https://www.census.gov/programs-surveys/cps/technical-documentation.html, 2017.

[1] We focus on the variance decomposition because it captures the crux of our analysis: the beta coefficients summarize information on how the levels and volatility of each worker flow contribute to the cyclical dynamics in involuntary part-time employment.

[2] It is worth noting that the sum of the variance contributions in Table D1 is close to 100 percent in all columns.

Table D1: Additional robustness checks (variance contributions)

	Baseline	**Regression window**		**1994-2019**	**Part-time defined**	**Excluding**
		2008-2019	**1994-20189**	**data**	**as < 30 hours**	**multiple jobholders**
	(1)	(2)	(3)	(4)	(5)	(6)
Inflows						
$\beta\left(F \to I\right)$	17.2	17.2	17.5	27.0	29.6	29.8
$\beta\left(V \to I\right)$	25.3	24.9	25.4	25.7	22.5	27.3
$\beta\left(U \to I\right)$	5.54	6.17	5.40	2.05	1.75	1.77
$\beta\left(N \to I\right)$	3.44	3.55	3.64	0.72	5.60	1.01
$\sum_{j \neq I} \beta\left(j \to I\right)$	51.5	51.8	51.9	55.5	59.4	59.9
Outflows						
$\beta\left(I \to F\right)$	21.9	22.0	21.5	19.9	12.1	15.6
$\beta\left(I \to V\right)$	22.2	21.7	22.1	20.6	20.6	19.8
$\beta\left(I \to U\right)$	3.91	3.95	3.87	3.20	6.99	2.41
$\beta\left(I \to N\right)$	0.68	0.77	0.70	-0.30	-0.28	0.48
$\sum_{k \neq I} \beta\left(I \to k\right)$	48.6	48.4	48.2	43.4	39.4	38.3
$\sum_{(j,k), j \neq k} \beta\left(j \to k\right)$	100.1	100.2	100.1	98.9	98.8	98.1

Notes: CPS data, 1976m01 – 2019m12 in Columns 1 to 3, 1994m01 – 2019m12 in Columns 4 to 6. The table reports the variance contributions of flows hazard λ^{jk} to the dynamics of involuntary part-time employment. Column 1: baseline regression window to adjust data before 1994 (see equation (4) of the main text). Columns 2: the regression window is 2008-2019. Columns 3: the regression window is 1994-2019. Column 4: results based on post-1994 data. Column 5: part-time employment defined by 30 usual weekly hours cutoff. Column 6: data excluding multiple jobholders. All table entries are expressed in percent.