Rotation group bias in measures of multiple job holding

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HIGHLIGHTS

- U.S. multiple job holding (MJH) is measured from the Current Population Survey (CPS).
- The CPS interviews residences/households eight times over sixteen months.
- Reported MJH is far higher in the first month in sample (MIS) than in other MIS.
- True MJH rates should not differ across MIS.
- Rotation group bias in MJH has worsened over time.

ARTICLE INFO

ABSTRACT

Reported multiple job holding rates in the U.S. are found to be substantially higher among workers in their first month in the CPS sample (the first rotation group), with rates declining in subsequent rotation groups. True rates should not differ across rotation groups. Using 22 years of CPS data, multiple job holding rates based solely on the first rotation group were 27.5 percent higher than official rates based on all rotation groups. Rotation group bias worsened over time and could account for as much as one-quarter of the measured decline in multiple job holding.

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1. Introduction

The monthly Current Population Survey (CPS) is a key source for US labor statistics, most notably the monthly unemployment and labor force participation rates. Residences and their occupant households are surveyed over eight 'month-in-sample' periods (i.e., MIS or rotation group). A residence is surveyed over four consecutive months, followed by eight months out of the survey, followed by four additional months (e.g., MIS 1–4 in April–July 2014; MIS 5–8 in April–July 2015).[1] There is no reason to expect true labor force outcomes to differ with respect to MIS, yet Krueger, Mas, and Niu (KMN forthcoming) show that US unemployment rates are highest in MIS 1, declining in MIS 2–4, rising in MIS 5, and declining again in MIS 6–8. 'Rotation group bias' (RGB) in the unemployment rate was noted previously (Hall, 1970; Bailar, 1975; Solon, 1986), but was not widely known to researchers or analyzed in depth prior to KMN. The authors do not argue that RGB is universal; they find no evidence for RGB in unemployment in the Canadian labor force survey.

In this note, we show that another official employment measure compiled from the CPS, the multiple job holding (MJH) rate, exhibits substantial rotation group bias. Multiple job holding provides opportunities for individuals and households to increase incomes and lower risk, to acquire a broader portfolio of human capital, and, in some cases, increase job satisfaction. Secondary jobs tend to be short-term; hence, MJH rates at a point in time greatly understate the proportion of workers who have held multiple jobs

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[1] The first and fifth rotation groups require (with some exceptions) that a Census field representative conducts the household survey in person. For MIS 2–4 and 6–8, most surveys are conducted over the phone rather than in person.
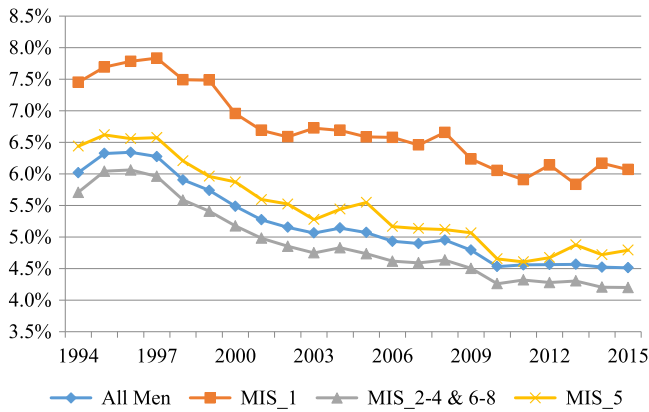
Fig. 1a. Male multiple job holding rates by year for all, MIS 1, MIS 5, MIS 2–4 & 6–8.
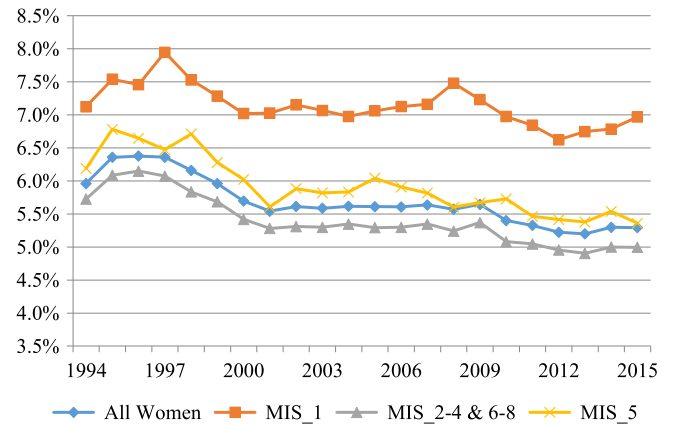

Fig. 1b. Female multiple job holding rates by year for all, MIS 1, MIS 5, MIS 2–4 & 6–8.

within the past year or at some point in the past.[2] The Bureau of Labor Statistics (BLS) and the Census Bureau began measuring multiple job holding on a regular monthly basis following a major overhaul of the CPS in January 1994. Using an index suggested by KMN, we show that MJH rates in the first rotation group (MIS 1) are 21% larger than the rate using all rotation groups in 1994–95; the difference in 2014–2015 is 33%. This rotation group bias for multiple job holding is substantially higher than the 9% level found for unemployment by KMN over the 1994–2014 period (KMN, forthcoming, Table 2).[3] Because rotation group bias is substantial and worsened over time, it is likely that the true MJH rate is higher than the official rate and that measured decline in MJH is overstated. We document these patterns below.

2. Data and analysis

Multiple job holding was measured on a regular basis beginning in January 1994 following the major redesign of the CPS. All employed individuals ages 16+ are asked the question: "Last week, did you have more than one job (or business), including part-time, evening, or weekend work?" The Bureau of Labor Statistics (BLS) defines a multiple job holder as an individual who: (a) holds wage and salary jobs with two or more employers; (b) combines a wage and salary job with self-employment; or (c) combines a wage and salary job with one as an unpaid family worker. In this paper, we use the same data and methodology as BLS, including all rotation groups of the CPS from January 1994 through December 2015 (22 years). The combined sample size for years 1994–2015 is 16,736,173, an average 760,735 workers per year.

Following BLS procedures, Figs. 1a and 1b show annual MJH rates (diamonds) for men and women based on all CPS rotation groups, respectively, from 1994–2015. Men's rates fell from an average 6.2% in 1994–95 to 4.5% in 2014–15; women's rates fell from 6.2% to 5.3% over the same period (the combined rates fell from 6.2% to 4.9%). Also included in the figures are MJH rates compiled separately for MIS 1 (squares), MIS 5 (crosses) and from the remaining six (MIS 2–4 & 6–8, triangles). Clearly evident is that individuals report substantially higher rates of MJH in their first month in the survey than in subsequent months. The official rate is substantially lower than the MJH rate reported by workers in MIS 1, modestly lower than for those in MIS 5, and higher than the average for the remaining six rotation groups.
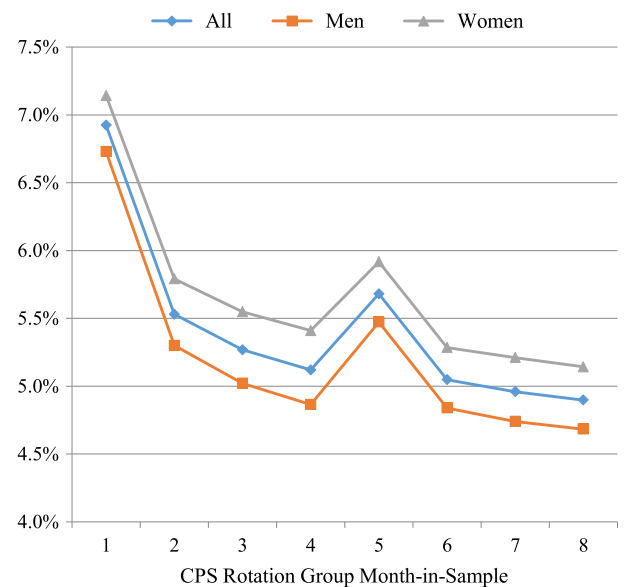

Fig. 2. Mean multiple job holding rates by rotation group and gender, 1994–2015.

Fig. 2 provides summary evidence of differences in reported MJH rates by rotation group based on the average across 22 years, showing overall MJH rates and those for men and women. Focusing on combined male and female rates, MJH for those in MIS 1 averages 6.9%, as compared to only 4.9% for MIS 8 (and 5.2% for MIS 2 through MIS 8). The 'tilted-W' pattern seen in Fig. 2 mimics that seen for the unemployment rate (KMN forthcoming), although rotation group bias is more extreme for MJH than for unemployment.

We draw three general takeaways from the evidence. First, households appear to provide more comprehensive labor market information when surveys are conducted in person, hence the peaks at MIS 1 and MIS 5. Second, lower MJH is reported the longer a household is in the survey, seen by the downward slope as one moves from earlier to later rotation groups.[4] And third,

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[2] For references to the larger literature on multiple job holding, see Lalé (2015) and Hirsch et al. (2016).

[3] The unemployment rate is of course a more important measure of economic performance than is the MJH rate.

[4] An important implication of rotation group bias and declines in MJH or unemployment reporting by month-in-sample is that transitions out of (into) MJH or unemployment are overstated (understated). Lalé (2015) documents reported MJH transitions seen in monthly pairs of the CPS. Numerous papers have examined unemployment transitions.