

Report on CPS Occupational Mobility Measures

Alden Porter

September 2019

1 Introduction

In this report I detail an extension of Moscarini and Thomsson [2008] (henceforth M&T 2008) into 2018. I find that there is a large increase post 2006 in the measure of occupational mobility, however, I also document a large increase in “suspicious” observations, i.e. observations with missing answers to dependent coding questions, during that same period whose time series matches closely the increase found in the original mobility series. Decomposing the mobility series by whether or not the observation is suspicious, I find that the post-2006 increase is driven almost entirely by suspicious observations.

2 Data

The data I use for the analysis below is monthly CPS panel data from 1994 to 2018 which was retrieved from the Center for Advancement of and Research in Economics at the Kansas City Fed. I use this data source because it has a out of the box personal identifier¹ and also because it has all three dependent occupational coding variables used to identify suspicious observations in M&T 2008². The sample consists of men aged 17-64 inclusive who are employed for at least two months.

¹The personal identifier I use in this analysis is called `kc_pid` in the data set, which I validate based on age sex and race.

²I also performed this analysis with data from IPUMS to get qualitatively similar results, I elected to stick with the Kansas city data because IPUMS is missing the second dependent coding question

I use post-1994 data because after 1994 the CPS implemented a “dependent coding procedure”, whereby occupations were recorded for an individual in their first month of sampling, then in follow up samples they were asked a series of questions to determine if a change in occupation was likely. The dependent coding questions are as follows:

1. Last month, it was reported that you worked for (employer’s name). Do you still work for (employer’s name) (at your main job)?
2. Have the usual activities and duties of your job changed since last month?
3. Last month you were reported as (a/an) (occupation) and your usual activities were (description). Is this an accurate description of your current job?

This report has two primary variables of interest. The first variable is an indicator for whether or not a person’s primary occupation changed between months 2 and 3 in the sample³ denoted MOB , and formally defined as

$$MOB_i = \begin{cases} 0 & \text{if } o_{i,t} = o_{i,t+1} \\ 1 & \text{if } o_{i,t} \neq o_{i,t+1}. \end{cases}$$

where $o_{i,t}$ is person i ’s occupation at time t .

The second variable is an indicator for whether or not the dependent coding question had a blank answer when it should not have, which is called a suspicious observation. Formally we denote this with the indicator variable *suspicious* which takes on a value of 1 if the answer to the first coding question is blank; the answer to the second question is blank and the answer to the first question is “yes”; or the answer to the third question is blank, the answer to the first question is yes, and the second is no. The indicator is zero otherwise.

3 Analysis

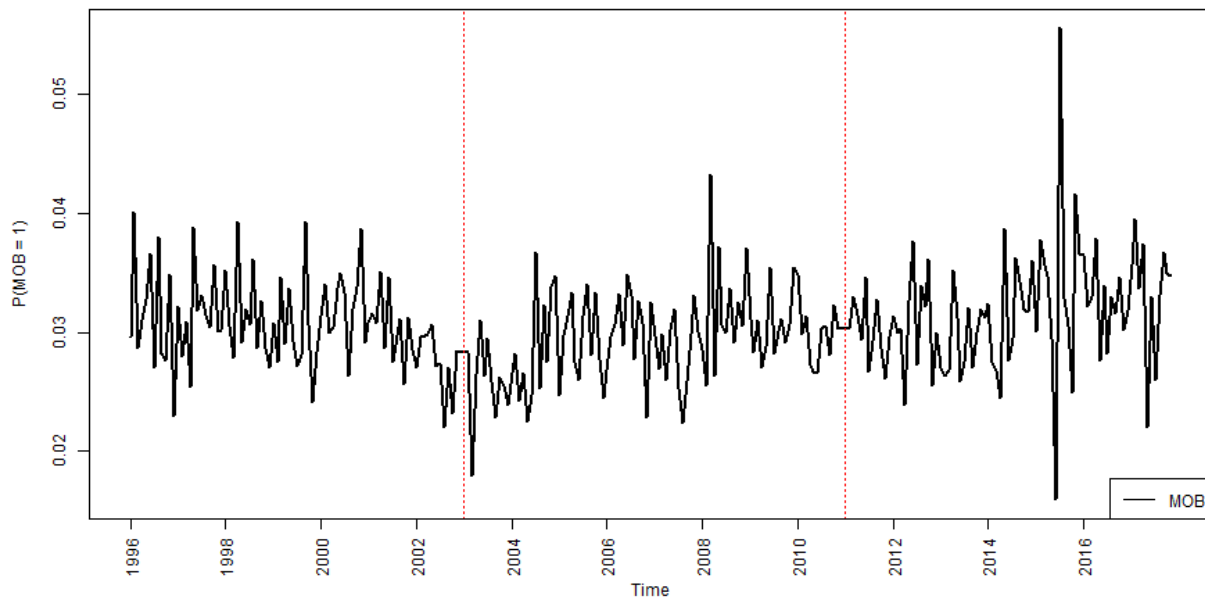
The red dotted lines are years where the occupational coding system changed. I drop observations in a 4 month window around these changes to avoid potentially spurious increases

³The reason I look at transitions from the second to third month is to follow M&T 2008 who use the “trajectory” of occupations to try tease out which suspicious transitions will represent a true change in occupation.

in mobility.

For comparability with M&T 2008 I first attempt to replicate their procedure on my sample. In brief, the procedure sets $MOB = 0$ if we have a suspicious transition and there is no change in industry, whether or not the person looked for work in the past 4 weeks, or what class of worker they are. This procedure also sets to zero any suspicious observation which had an unusual pattern of occupational changes⁴. The results of this exercise are shown in figure, one can see that while the level of the series is reduced by the cleaning procedure, and the post-2006 increase is mitigated to an extent, the rough qualitative pattern is similar to the raw mobility series shown in figure 2.

Figure 1: Mobility Probability Over Time, Cleaned According to M&T 2008



⁴For details see M&T 2008, I follow their post 1994 procedure setting flags 3,10,11,12 and 13 to be zero.

Figure 2: Mobility Probability Over Time, Uncleaned

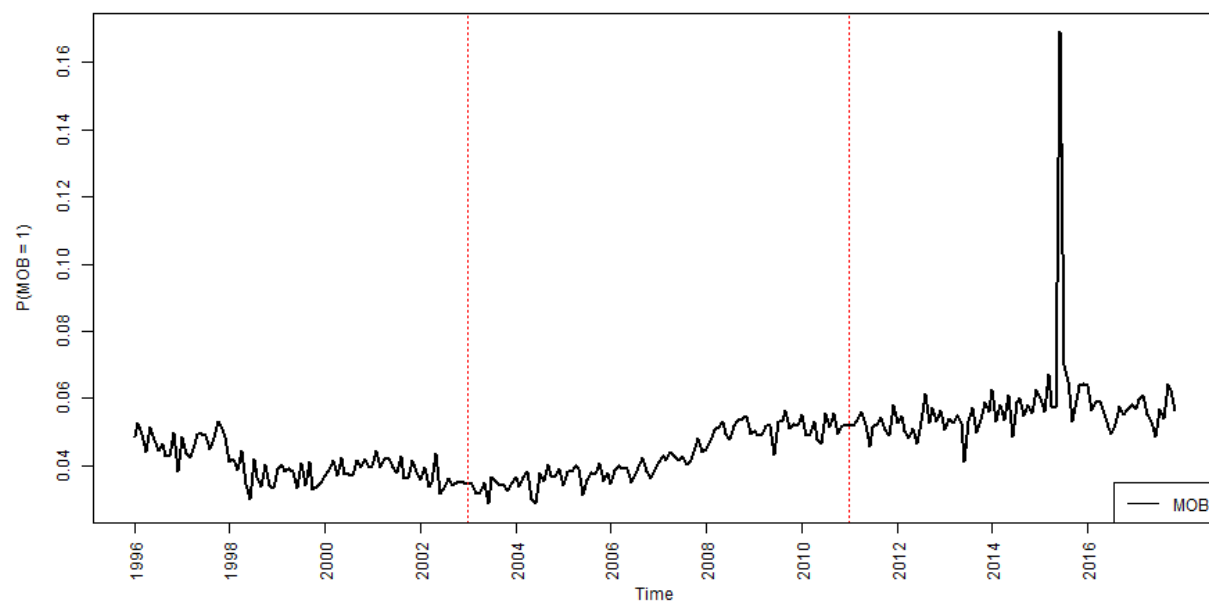
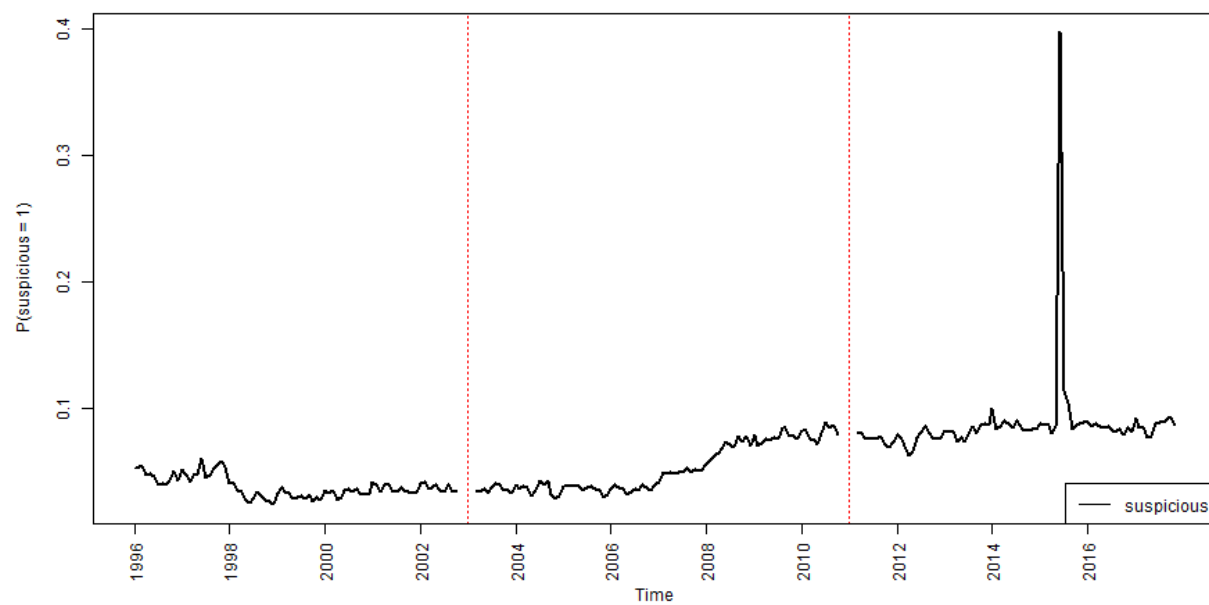


Figure 3: Probability the Observation is Suspicious



I then plot the proportion of suspicious observations over time in figure 3 and show that there is a increase post 2006 closely matching the increase in the previous two mobility series. Decomposing the raw mobility series into suspicious and non-suspicious observations in figures 4 and 5, one can see that the rise in mobility post 2006 is entirely do to suspicious transitions.

4 Conclusion

There appears to be a rise in the frequency of blank answers to dependent coding questions post 2006 which in turn has led to a rise in observed occupational mobility. There are likely many possible reasons for this, one being a change in the way the CPS was conducted in the 2000s. It is of course also possible that suspicious observations systematically differ in some way form non-suspicious ones through some unobservable, and that unobservable has simply increased in recent years. The next steps for this project would be to contact the census and see if there have been significant changes to the survey during this time frame.

Figure 4: Probability $MOB = 1$ Given $Suspicious = 0$

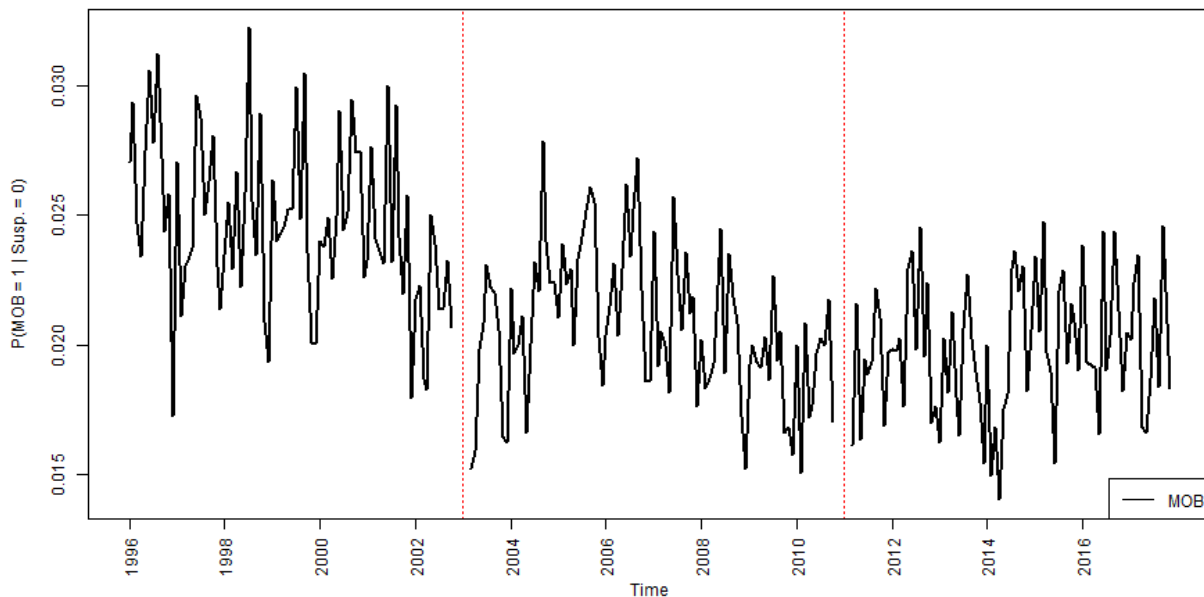
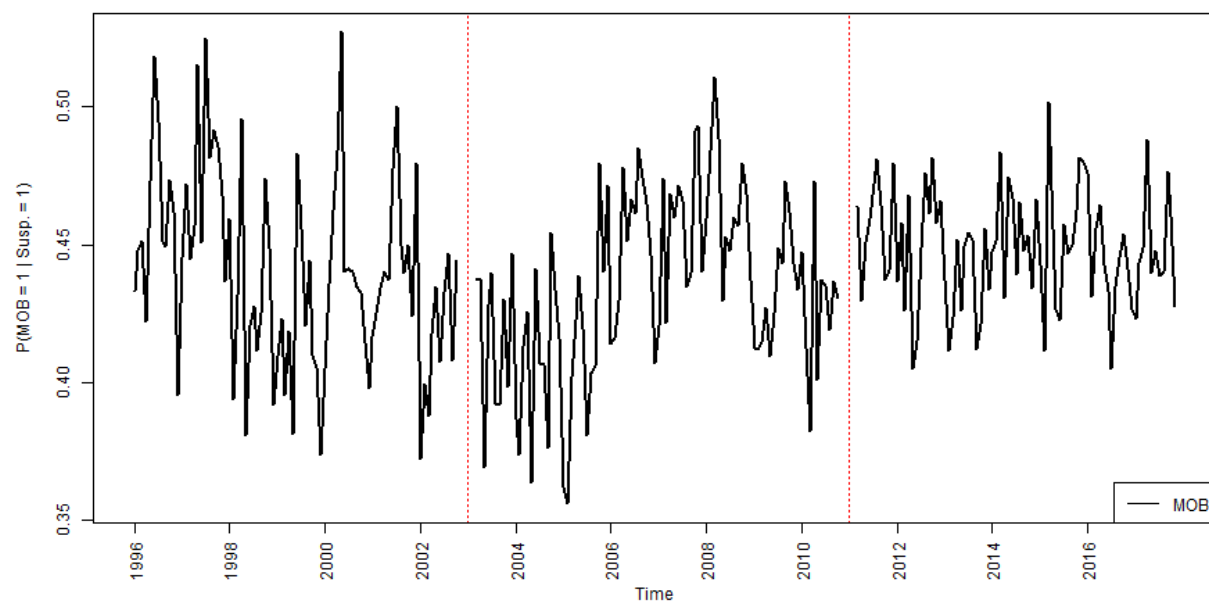


Figure 5: Probability $\text{MOB} = 1$ Given $\text{Suspicious} = 1$



Bibliography

Giuseppe Moscarini and Kaj Thomsson. Occupational and job mobility in the us*. *The Scandinavian Journal of Economics*, 109(4):807–836, 2008. doi: 10.1111/j.1467-9442.2007.00510.x. URL <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1467-9442.2007.00510.x>.