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# Underemployment in a Temporal and Spatial Perspective: Overqualification and Involuntary Part-Time Work Since the 1960s

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## Abstract

Underemployment has gained less attention in recent years than other economic indicators, despite the fact that one primary measure of this phenomenon—involuntary part-time work—doubled during the Great Recession (Sum and Khatiwada 2010). Using data from the Current Population Survey (1962-2012), we examine how underemployment (in the forms of involuntary part-time work and over-qualification) has changed over time, with particular attention paid to differences among various recessions across the rural-urban divide. We start with a descriptive analysis and then use logistic regression models to analyze whether factors associated with underemployment, including education, age, race and sex, have changed in recent decades. Preliminary results indicate that involuntary part-time employment increases during recessions, but does not decline to pre-recession levels, thus there has been a dramatic increase in this type of underemployment over time. Additionally, we find that the '07-'09 recession had little effect on over-qualification rates.

## Introduction

Economic indicators suggest a slow recovery following America's "Great Recession" that began in December, 2007 and ended in June, 2009 (NBER). Unemployment reached rates not seen since the 1930s and remains persistently high at 8.1% (Bureau of Labor Statistics 2012). Additionally, the overall poverty rate is nearing its mid-1960s levels: according to the most

recent estimates, poverty in 2011 was 15%, a rate not seen since the early 1990s (DeNavas-Walt, Proctor and Smith 2012). Another important economic indicator, underemployment, has garnered much less attention from policymakers, the media and social scientists alike.

Underemployment merits further empirical consideration for a number of reasons. It exacerbates racial inequality, affecting nonwhites substantially more than white workers (Tigges and Tootle 1993). Underemployment historically has been higher among nonwhites in rural places (Slack and Jensen 2002). The most recent recession significantly worsened among all workers, though nonwhites (in both rural and urban places) were particularly hard hit, as were younger workers, many of whom saw their underemployment rates more than double (Young, forthcoming). Historically, rural workers have been more likely to slip into underemployment than their urban counterparts (Jensen et al. 1999). Whether this rural disadvantaged persisted during the Great Recession is unclear, however. In our analyses, we will pay particular attention to demographic factors such as race and age in the context of rural/urban residence to further our understanding of how the influence of such factors on underemployment has changed since the 1960s.

The underemployed also accrue much less human capital than their fully employed counterparts (Hirsch 2005), adding more strain to the already fragile economy by diminishing worker earnings and lowering economic output more broadly. Sum and Khatiwada (2010: 13) note that underemployment during the Great Recession resulted in "slightly $68 billion dollars in lost earnings" among the employed. In the last several decades, overqualification—in which workers hold credentials exceeding those required by their occupations—has increased rapidly as well. Vaisey (2006) estimates that overqualification rates have increased from at least 10 percent in 1972 to about 20 percent in 2002. These rates increased more rapidly among nonwhites and

women, according to Vaisey, but little attention has been paid to rural/urban residence, though researchers have documented a loss in rural America's urban capital in recent years (Carr and Kefalas 2009)

Apart from these economic concerns, underemployment—like its counterpart, unemployment—has a strong, negative effect on emotional well-being (Dooley 2003; Dooley and Prause 2009). Dooley, Prause and Ham-Rowbottom (2000), for instance, find that underemployment influences workers' mental health in a way akin to unemployment, with inadequately employed persons being more likely than other workers to experience increases in depression. Despite underemployment's deleterious effects on worker and family financial wellbeing and economic output, we know little about the extent to which underemployment in its various forms has changed in recent decades. Moreover, as Vaisey (2006) points out, overqualification in particular has generated scant attention from social scientists in the US. Given the economic restructuring, including deindustrialization, globalization, the rise of the service sector, an increased emphasis on obtaining a four-year degree (coupled with increased access to higher education; see Berg 1971) and widespread worker insecurity (Kalleberg 2011), we argue that underemployment warrants closer examination.

We know little about how recessions influence underemployment, its decline during post-recession recovery periods, or the extent to which the relationship between underemployment and factors associated with it (including education, age, and race-ethnicity) have changed over time. In this research, we will illuminate these trends across the rural/urban divide and racial-ethnic lines.

**Data and Methods**

Data for this research come from March Current Population Survey (CPS) provided by the Integrated Public Use Microdata Series (IPUMS) at the University of Minnesota (Miriam et al. 2010). Under the guidance of the Bureau of Labor Statistics (BLS), the CPS surveys approximately 50,000 households each month. Results are used by the federal government to gauge the state of the US economy. Researchers utilize the CPS to paint a more nuanced statistical portrait of the labor force. The CPS has been used to collect data on a number of economic indicators, including employment and poverty, since the late 1950s. The CPS has been used by many researchers to measure underemployment, particularly in the case of involuntary part-time work, including Slack and Jensen (2002), Jensen et al. 1999, and Sum and Khatiwada (2010), and Lichter (1987, 1988, and 1989).

The BLS does not provide an official definition for underemployment, and past research has defined the term in a variety of ways (see especially Dooley and Prause 2009; Maynard and Feldman 2011). Some, such as Jensen, Findeis, Hsu and Schachter (1999) define the term to include not only those involuntarily employed part-time, but also the working poor and those who have given up looking for work altogether. Sum and Khatiwada (2010) included only the involuntary part-time workers in their definition of underemployment. The underemployed themselves often construct their own definitions of underemployment that often do not fit any of these conceptualizations (Stofferahn 2000). In this research, we examine two specific dimensions of underemployment: 1) Involuntary Part-Time Work and 2) Overqualification.

**Research Questions**

This analysis considers change over time in underemployment, including both involuntary part-time work and overqualification for the present job. Specifically, we ask:

1. How has each dimension of underemployment changed over time, and how highly correlated are involuntary part time work and over qualification with economic cycles?
2. What are the characteristics of the underemployed, and how have these changed over various recessions across rural and urban places?

Dependent Variables - Underemployment

We follow Sum and Khatiwada's operationalization of *involuntary part-time work*. Workers are considered involuntarily part-time if they are 1) working part-time (defined by the CPS as less than 35 hours per week) and 2) state that they want full-time work and are unable to obtain it, either because their hours have been reduced due to lack of work or they are searching for but cannot find a full-time position. Slack and Jensen (2002) defined involuntary part-time employment in this manner as well. *Overqualification* is defined when someone with a four-year degree or higher is working in low-skill occupations—those that, according to the BLS, require less than a month of on-the-job training, no prior experience and no more (and often less) than a high school diploma[1]. Vaisey (2006) measured overqualification somewhat differently, differentiating between the "simply overqualified" (workers whose education exceeds that required by their occupation by about 1-year) and the "highly overqualified" (whose education-occupation mismatch is at least 3-years). Our proxy for overqualification is a more conservative estimate that offers us further insight into underemployment among the college educated—whose ranks have increased dramatically in recent years. As the number of jobs requiring at least a four-year degree increases, so too might overqualification rates among those pursuing the credentials required of these jobs.

Key Independent Variables

[1] Bureau of Labor Statistics, "Definitions for Education and Training Classification System": <http://www.bls.gov/emp/ep_definitions_edtrain.pdf>

*Recession Year*. In our regression models, we include a series of dummy variables for various recessionary periods identified by the National Bureau of Economic Research, with the earliest recession (December, 1969 to November of 1970) used as the reference category. This is necessary to answer our research question regarding the effects of the Great Recession in comparison to earlier ones with respect to underemployment. The following dummy variables represent recessionary periods: 1) 1974 (November 1974 to March 1975), 2) 1980 (January 1980 to July 1980), 3) March 1982 (July 1981 to November 1982), 4) 1991 (July 1990 to March 1991), 5) 2001 (March 2001 to November 2001) and 6) 2008 and 2009 (the Great Recession: December 2007 to June 2009). We also test the Great Recession as a binary variable against all past recessions (in which respondents surveyed in 2008-2009 are coded as "1" and those in other recessions as "0") and against other individual recessions.

*Place Type.* The CPS includes a variable describing whether respondents live in metropolitan areas or outside them, based on their county of residence. We include a dummy variable for rural status, coded 1 for those living outside metropolitan areas and 0 for urban residents—those in metropolitan areas (whether in central cities, outside central cities, and those whose central city status is not known).

*Race*. We include three racial-ethnic groups in our analyses: non-Hispanic white, non-Hispanic black, and Hispanic (of any race). Those of other races (e.g., Asian) are excluded from analysis unless they list their ethnic status as Hispanic. Prior to 1988, respondents were categorized as white, black/negro or other. Categories such as Asian and Native American were added later, making comparisons prior to 1988 difficult. The small rate of Asians and other races also makes statistical analyses using these groups less reliable. Our logistic regression models will include two dummy variables—black and Hispanic—leaving white as the reference group. Moreover,

the CPS did not ask respondents about their Hispanic status until 1972. Prior to this year, the majority of Hispanics are coded primarily as white. Our discussion of racial-ethnic differences in underemployment begins with the recession of 1974-75.

*Gender*. Women may be more likely to experience underemployment in the form of overqualification more so than male workers (Jensen et al. 1999; Lichter 1989; Vaisey 2006). Gender is therefore included in our logistic regression models as a dummy variable where male is coded as 1 and female as 0.

*Education.* Less educated workers were more likely to experience underemployment in the form of involuntary part-time work during the most recent recession (Sum and Khatiwada 2010; Young, forthcoming). In examining involuntary part-time work, we include dummy variables in our analyses representing the following educational categories: 1) Less than High School, 2) High School Diploma or GED, 3) Some College, 4) Associate Degree and 5) Bachelor Degree. More than a four-year degree (including a Masters, Doctorate, or professional degree) is the reference category. When examining overqualification, our analyses include only those with at least a four-year degree, but we differentiate between various forms of higher education by including a dummy variable for four-year degree and retaining more than a four-year degree as the reference group.

*Age.* A series of dummy variables representing the following age groups are included in our logistic regression models: 1) 18 to 21, 2) 22 to 29, 3) 30 to 39, 4) 40 to 49 and 5) 50 to 64. The reference category is 65 and older.

Control Variables

*Region*. Lichter (1987, 1988) observed that rates of underemployment are higher among workers in the south. In the south, racial-ethnic differences (particularly black/white differences) are

especially acute. We therefore control for region in our logistic regression models, including dummy variables representing the Midwest, West and the South (with the Northeast being the reference category).

*Poverty*. Those below the poverty line are more likely than others to report experiencing underemployment (Sum and Khatiwada 2010). We include a dummy variable representing poverty status, in which "1" is coded as "below the poverty line" and "0" above for the survey year.

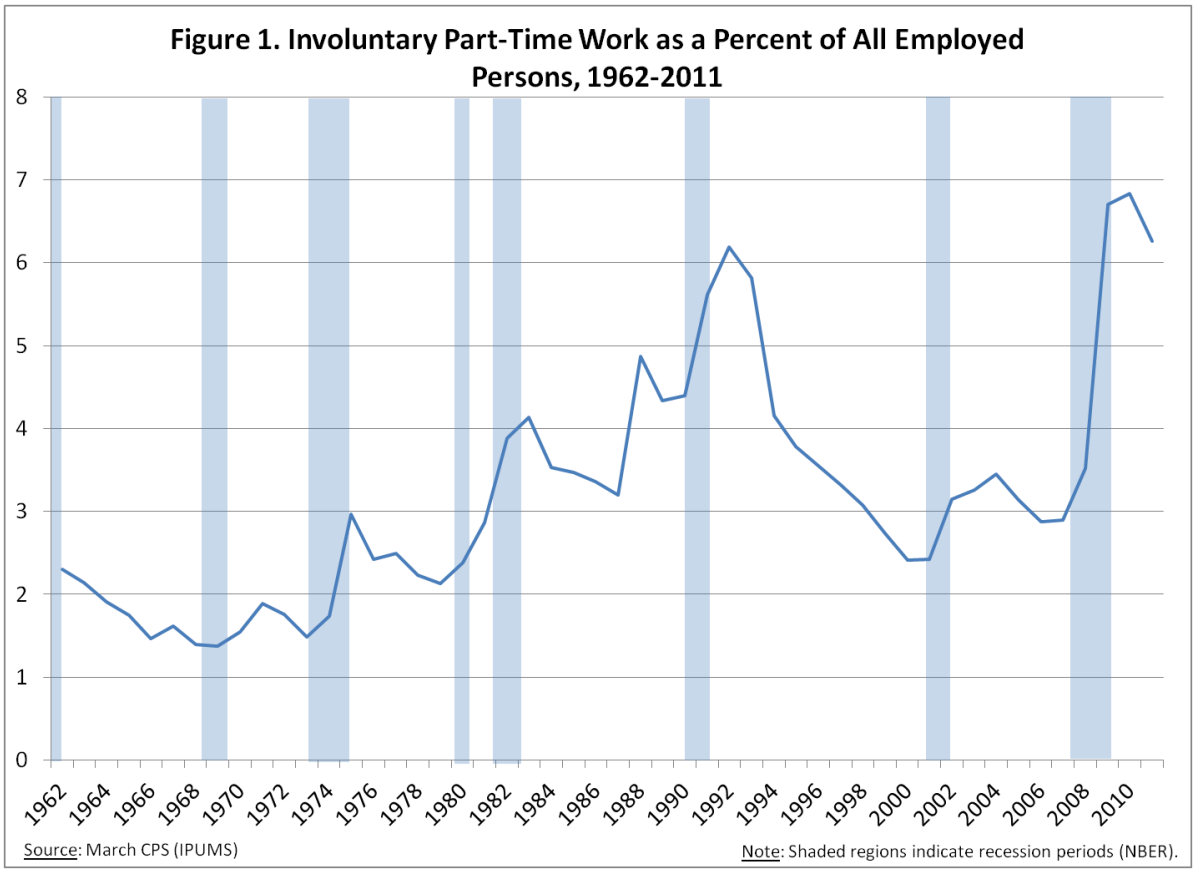
We begin our analysis by examining change over time in involuntary part-time work and overqualification. In addition to showing overall trends, we illustrate changes by demographic groups. Note that while the overall trends are currently presented, the sub-group analyses are still underway and will be completed over the coming months. We then use binomial logistic regression estimate separate models for the two types of underemployment. First and second order interaction terms will allow us to examine the extent to which various factors associated with underemployment, such as education and race-ethnic status, have changed over time and whether their effects differ across the rural-urban divide. Following Sum and Khatiwada (2010), we exclude the unemployed and those not in the labor force in order to gauge specifically the rate of underemployment among the working population. Those under 18 are also excluded from analysis, given that their likelihood of seeking full-time work is relatively low and that college-educated adults under age 18 are not likely to be representative of the US population. All analyses are weighted to account for sampling error and adjust on demographic characteristics including age, sex, and race-ethnic status (See the CPS's technical documentation for a more in-depth discussion of the survey's weighting procedures[2]).We begin by using descriptive statistics to discuss changes during the Great Recession in comparison to past periods of economic

[2] Current Population Survey, "Design and Methodology": http://www.census.gov/prod/2002pubs/tp63rv.pdf

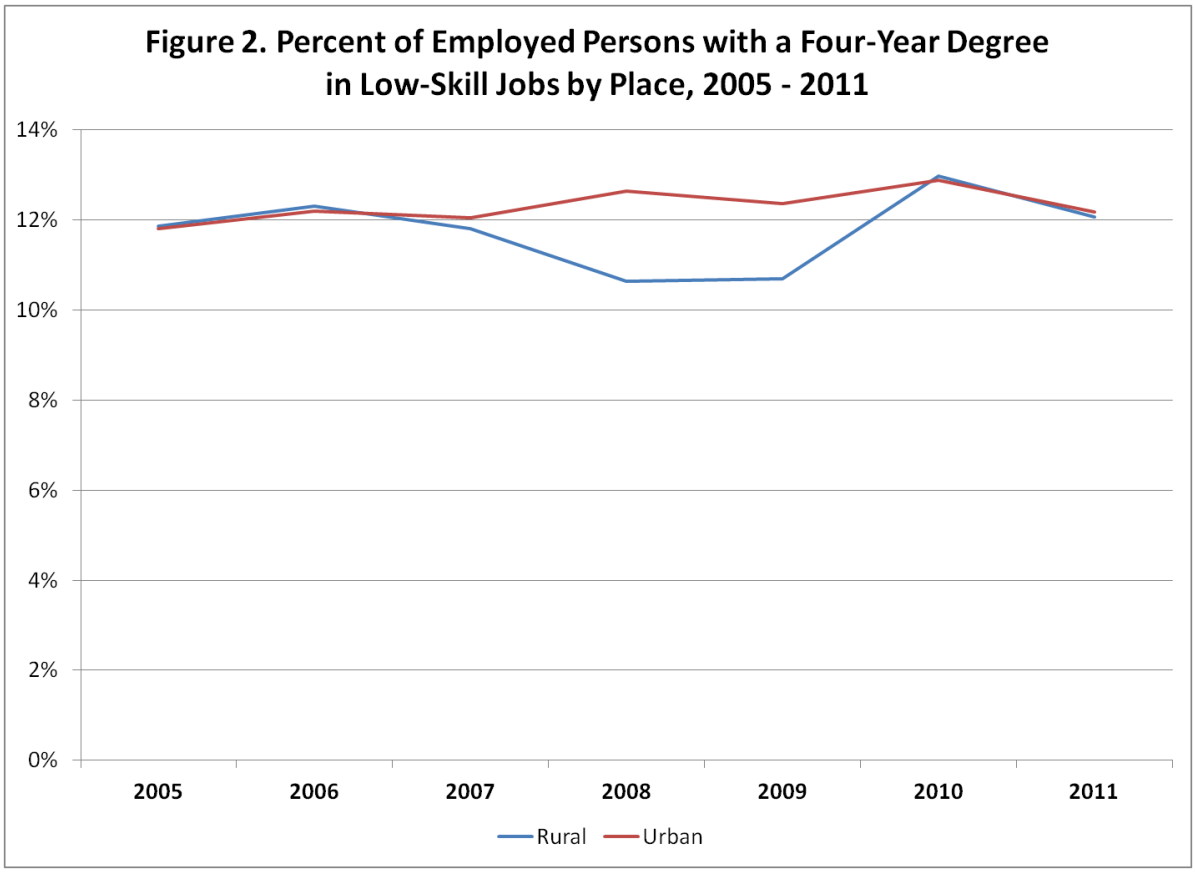
decline, with particular attention paid to rural/urban differences among the demographic factors of interest outlined above. Here, we use bivariate logistic regression to test for statistical significance. We then utilize multivariate models to estimate the effects of various recessions on involuntary part-time work and overqualification.

**Preliminary Results and Future Analyses**

Figure 1 displays rates of involuntary part-time work from 1962 to 2011. As this figure illustrates, involuntary part-time work reaches new peaks with each recession. Although it continued to climb throughout the 1980s, during the 1990s economic boom involuntary part-time work declined sharply. The most substantial increase in this form of underemployment, however, took place during the Great Recession. Between 2007 and 2009, rates of involuntary part-time work doubled from 3.5% to nearly 7%, and like unemployment have dropped relatively little, falling less than a percentage point since the recession's end. The bulk of this increase took place between 2008 and 2009 (see Figure 1). Binary logistic regression models suggest that the most recent recession had a stronger effect on involuntary part-time employment compared to previous recessions, with the exception of the 1991 recessionary period (regression models available upon request). In addition, the rural-urban gap in involuntary part-time work, though statistically significant, is smaller in 2008-09 compared to previous recessions. While our rural dummy variable is positive, the interaction term for our rural*2008-09 dummy variables reduces the effect of rural residence, suggesting that the rural disadvantage was weaker (but still statistically significant) during the Great Recession. Race also played a major role during this recession, with 7.6% of blacks and 12.7% of Hispanics experiencing involuntary part-time work in 2009, compared to 5.4% of whites. Such differences were statistically significant in our logistic regression models.




With the exception of a slight drop in overqualification rates in rural areas, following by an increase in 2009, incidences of overqualification changed little during the recession and the few years preceding it, suggesting that this form of underemployment speaks to a more persistent challenge in the workforce. Regression models suggest that black and Hispanic workers remain more likely than their white counterparts to be overqualified, though place has no significant bearing on this relationship, as per the non-significance of our black*rural and Hispanic*rural interaction terms in our 2009 sample. We will continue to examine these different types of underemployment separately as this research moves forward.




This research is not without its limitations. Other than considering the effects of past recessions, our models cannot account for demand-side factors that likely influence underemployment (e.g., the number of high-skill jobs available compared to the number of workers with four-year degrees). Additionally, our measure of overqualification, while conservative, does not reflect workers' attitudes toward their positions in the way our measure of involuntary part-time employment does. Despite these limitations, however, estimating the effects of the Great Recession on these two forms of underemployment can expand our knowledge of this recession, the extent to which it operated differently than past ones, and whether its effects were more strongly felt among disadvantages groups (e.g., women and nonwhites) and the moderating role that place played during the 2007-09 recession. Moving forward, we will examine whether the statistical power of our race and place variables have

declined in significance over various recessions. In doing so, we will demonstrate the extent to which race and place matter for underemployment during the Great Recession compared to previous periods of decline.

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