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Discouraged vs. added workers: Variation by gender, age, and marital status

Randall Kesselring[a,*], Dale Bremmer[b]

[a] Arkansas State University, USA
[b] Rose-Hulman Institute of Technology, USA

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ABSTRACT

This paper analyzes the relationship between aggregate unemployment and the labor force participation of males and females of differing ages and marital circumstances. According to the discouraged-worker effect, a higher unemployment rate causes some workers to leave the labor force leading to a reduction in both the labor-force participation rate and the unemployment rate. To shed light on this statistical incongruity, a unique data set consisting of monthly observations from the Current Population Survey is used to extract the labor force participation rates of males and females of three different age categories and three different marital classifications. Impulse functions from vector error-correction models indicate that discouraged workers are more likely though not exclusively to consist of married males and females between 50 and 65 years of age. No statistically significant evidence of a net added-worker effect is found among married females or males in any age group.

1. Introduction

The Great Recession and its associated unemployment problems brought increased attention to the differential impact that economic downturns have on various demographic subsets of the population. Some of that attention is focused on the discouraged-worker effect—a concept long recognized by those studying the labor market. In the United States, only individuals who have actively sought work sometime during the four weeks prior to the survey week of the Current Population Survey are officially counted as unemployed. Consequently, if the reduction in employment opportunities which normally accompanies an economic downturn reduces a person's willingness to seek work, the labor force participation rate and the unemployment rate will both fall. Specifically, an individual will continue to actively seek work as long as the perceived marginal benefit of additional search exceeds the marginal cost of looking. But, once the marginal cost of searching exceeds the marginal benefit—a situation likely to occur frequently during a significant recession—job search ceases and the individual withdraws from the labor force. This process results in a simultaneous reduction both in the size of the labor force and in the measured unemployment rate.

While the discouraged-worker effect is widely discussed in the various media it is not the only possible consequence of a declining labor market. In modern labor markets, households may include more than one potential breadwinner. If a household member loses employment, other household members who were previously out of the labor force may well enter the labor market in order to moderate the family's lost income. This phenomenon, generally referred to as the added-worker effect,

* Corresponding author. Tel.: +1 870 680 8467.
E-mail address: randyk@astate.edu (R. Kesselring).

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works in opposition to the discouraged-worker effect by increasing the labor force participation rate while simultaneously increasing the unemployment rate. Of course, like many aggregate labor force characteristics reported by the Bureau of Labor Statistics (BLS), these effects may vary by age, race, gender, and marital status among other demographic characteristics. As data availability has improved, researchers have discovered a surprising amount of variability in such widely discussed relationships.

Taking advantage of current data availability, this paper uses vector error-correction models and their impulse functions to analyze the relationship between the overall unemployment rate and the labor force participation rate for males and females of various demographic categories. Data for the categories of specific interest are not directly available for analysis in published form. So, a unique data set was created by extracting the necessary information from the monthly Current Population Survey. In the end, twenty series were created reflecting males and females of differing age, and marital categories.

The impulse functions of the vector error-correction models indicate that both married men and women between the ages of 50 and 65 are more likely than their younger counterparts to become discouraged and leave the labor force in times of rising unemployment. The same behavior is observed to a lesser extent for married and single males and females between the ages of 22 and 50. The impulse functions for young, single males and females indicate they are also affected by the discouraged-worker effect, but to a lesser degree. While most of the twenty impulse functions for the various cohorts have negative point estimates, many of these negative point estimates lie in boot-strapped confidence intervals that contain zero, indicating the point estimates are not statistically significant. One distinguishing empirical result is that no statistically significant evidence for a net added-worker effect was found for any age or marital cohort.

2. Literature review

Jacob Mincer (1973, p. 27), a widely cited early writer in the field of labor economics and one who was specifically interested in discouraged workers and their relationship to overall economic conditions, reports this conclusion on discouraged and additional workers:

> . . . the discouragement effect dominates the behavior of most population groups whose labor force participation responds to stages in the business cycle. Such responsiveness is largely a characteristic of the secondary labor force, that is, household members other than the head.

In addition, he points to the problem involved with simply asking individuals who have withdrawn from the labor force why they decided to withdraw and treating only these individuals as discouraged. Labor flows indicate that discouragement is also, and probably more importantly, revealed as a decline in labor force entry and reentry rather than labor force withdrawal. The limited statistical toolbox for early researchers such as Mincer did not provide for the use of impulse response functions such as those used in this research which are able to provide more detailed inferences for labor force changes.

Several authors argue the offsetting importance of the added-worker effect in determining the net impact on overall employment during economic downturns. Lundberg (1985), for example, develops a theoretical model to analyze the importance of added workers during economic downturns. Using approximately 1,000 selected observations—only married families were chosen—from the Seattle and Denver Income Maintenance Experiments (1969–1973), Lundberg estimates transition rates which she uses in mathematical simulations to predict added-worker effects. The results indicate that as males become unemployed in White families, their spouses tend to enter the labor force in significant numbers, a result that also holds to a lesser extent for Hispanic households. However, the results are reversed for Black families. Her explanation for this anomalous result is that women and men with similar labor-leisure tastes and similar labor market opportunities tend to marry each other. She bases this conclusion on her simulation finding that Black and Hispanic females married to employed husbands were more likely to find employment than minority females married to unemployed husbands. Lundberg's results, while interesting, are produced by simulations based on estimates taken from a relatively limited and hand-selected data sample.

Stephens (2002) uses a joint utility model of household behavior to make a theoretical argument that the labor force participation response of married females to the job displacement of a bread-winner husband should be negative. He concludes (p. 510) ". . . there should be a permanent increase in the wife's labor supply following the husband's job loss." Empirical estimates based on 25 years of data (1968–1992) taken from the Panel Study of Income Dynamics (PSID) show that wives increase their labor force participation by small amounts prior to the occurrence of a job displacement, but by larger amounts afterward.

As evidenced by the Lundberg and Stephens papers, much theoretical work indicates the existence of a significant added-worker effect. However, the empirical prevalence of the discouraged-worker effect has led writers to look for explanations of this anomaly. So, writers such as Cullen and Gruber (2000) conclude that the existence of unemployment insurance has had a significant impact on the response of wives to a husband's job loss. Using data from the Survey of Income and Program Participation (SIPP) from 1983 to 1993 and selecting only married couples (2,560 observations) they run a number of cross-sectional regressions to determine the effect of unemployment insurance on the propensity of wives to enter the labor force. In the end, conclude that the existence of government sponsored unemployment insurance crowded out the added-worker effect to a large degree, thus providing at least one explanation for the difficulty researchers have had producing evidence of a significant added-worker effect.

Wasmer (2009) examines the short- and medium-run links between female labor supply and unemployment, comparing the countries in Europe to the United States using yearly time series data from 1956 to 2002. This study is unique in that it examines whether the causal link