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ADDED AND DISCOURAGED WORKERS  
IN THE LATE 1930s:  
A RE-EXAMINATION

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ABSTRACT

We revisit a famous controversy in labor economics: the debate between W.S. Woytinsky and Clarence Long over "added" and "discouraged" worker effects in the late 1930s. According to Woytinsky, the Depression created large numbers of added workers, persons who entered the labor force when the head of the household became unemployed. Long, on the other hand, believed that the number of added workers was trivial compared with the number of discouraged workers, and subsequent research has largely supported Long.

Using a sample of married women drawn from the public use sample of the 1940 census, we show that added worker effect was alive and well in the late 1930s, but that its viability was muted by the operation of work relief. Wives whose husbands held "public emergency work relief" jobs with the Works Progress Administration (WPA) or related agencies were far less likely to participate in the labor force than wives whose husbands were employed in a private sector or non-relief government job, or whose husbands were unemployed, so much so that the added worker effect disappears in the aggregate if the impact of work relief is ignored.

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The effect of unemployment on labor force participation during the Great Depression has long been a subject of controversy. According to W.S. Woytinsky, the Depression created a large population of "added" workers, persons who entered the labor force when the head of the household was thrown out of work. Woytinsky suggested, however, that added workers would leave the labor force as recovery progressed in the late 1930s, so that "the number of jobs necessary to reduce unemployment ... [was] less than the reported volume of unemployment would suggest."<sup>1</sup> Disagreeing with Woytinsky, Clarence Long asserted that the number of added workers was negligible compared with the number of "discouraged" workers -- persons who would enter the labor market only when unemployment began to fall.<sup>2</sup> William G. Bowen and T. Aldrich Finegan's econometric analysis of labor force participation of married women in 1940 appeared to support Long. On net, participation rates of married women in 1940 were significantly lower in cities with higher than average unemployment rates, suggesting that the discouraged worker effect dominated the added worker effect.

We revisit the controversy over added and discouraged worker effects among married women in the late 1930s in this paper. Our analysis is based on the public use microdata sample (PUMS) of the 1940 census, a rich source of microeconomic data unavailable to Woytinsky and his critics. We also probe the sensitivity of Bowen and Finegan's findings to the improvement in regression specification made possible by the 1940 PUMS.

## I. Added and Discouraged Workers in the Theory of Labor Supply

This section presents a brief discussion of the theory behind the added and discouraged worker effects. Readers desiring mathematical detail should consult the paper by Lundberg and the book by Kiefer and Devine cited in the references.

### The Added Worker Effect

The added worker effect refers to labor force participation by individuals who, absent certain conditions, would not ordinarily be in the labor force. To fix ideas, consider a married couple, possibly with children living at home. Subject to an intertemporal budget constraint, the household allocates its endowment of time to maximize expected household utility, which depends on current consumption, "leisure" (nonmarket uses of time), and future values of these variables. Initially, the head of the household, say the husband, is employed, while his wife is at home. The household then experiences a shock to the flow of its current income -- the husband loses his job. While the job loss may not have been unanticipated, the duration of the unemployment spell is uncertain at the time of its occurrence. The expected duration of the spell, however, is assumed to be brief relative to the expected life of the household; that is, the loss of income is presumed to be transitory.

What happens next depends on the household's wealth and capital market imperfections. Suppose the household's ability to borrow against its expected future earnings is imperfect; there may be limits to the amount the household can borrow, or perhaps it can borrow only at a very high rate of interest.<sup>3</sup> To meet the shortfall in current consumption, the household could consume out of its wealth, that is, draw down its savings. Alternatively, the spouse could reallocate time from nonmarket uses to job search. Effectively, the husband's unemployment lowers his wife's reservation wage, creating an incentive to reduce nonmarket time. If the incentive is large enough, the spouse enters the labor market, becoming an added worker.

Without further assumptions, the timing and mix of dissaving and labor force participation cannot be predicted in advance. If the opportunity cost of dissaving is small, the household would likely choose to consume first out of savings before sending the wife to work, particularly if the wife's labor market skills are limited, demands on her nonmarket time are great (for example, because there are children at home), there are fixed costs to entering the labor force, or if the household's initial wealth is substantial.<sup>4</sup> At some point during the spell of unemployment, however, the benefits of labor force participation may exceed the costs, and the added worker effect will be observed.

Entry into the labor force is one half of the added worker effect. The other half is the delayed exit of labor force participants. Imagine another married couple, both of whom are

employed. Suppose the current plan is for the wife to leave the labor force in the near future. Facing the constraints described earlier, the household may decide to change its plan if the husband becomes unemployed. Instead of leaving the labor force, the wife keeps her job, thus helping to maintain the household's current consumption. She, in effect, is also an added worker.

Putting both sides together, the combination of a higher probability of transition from nonparticipation to participation, and a lower probability of transition from participation to nonparticipation, implies that the labor force participation rate of married women whose husbands are unemployed will exceed the labor force participation rate of married women whose husbands are employed, ceteris paribus.

We extend the above discussion to allow for two additional aspects of the added worker effect. If the job loss were discovered to be permanent at some point, it would be optimal for the household to revise downward its expected level of consumption at all future dates. Thus the added worker effect should be larger in the short run than in the long run.<sup>5</sup> Second, the added worker effect may be reduced in size by the availability of unemployment compensation or other forms of unemployment relief. Effectively, unemployment compensation acts like an increase in household wealth, replacing lost income and lessening the pressure on secondary workers to look for jobs.

## The Discouraged Worker Effect

The discouraged worker effect refers to the behavior of persons not in the labor force and to the currently unemployed. Consider a model of labor force status in which persons can be employed, unemployed, or out of the labor force.<sup>6</sup> At any point in time an individual is in one of the three states and, with some probability, an event occurs which affects the value of remaining in the current state. For example, a currently unemployed worker might receive a job offer to which the worker could respond by taking the job, continuing search, or dropping out of the labor force. In general, the value of remaining in the current state for some period of time,  $h$ , will depend on (1) net income flows received while remaining in the state, (2) the expected present value of choosing the optimal status should an event occur, such as a job offer, and (3) should an event not occur, the value of optimally remaining in the current state at the end of the period  $h$ .

Now imagine an increase in the frequency of job offers or an increase in the mean wage associated with job offers. It may now be optimal for individuals not in the labor force to engage in job search (that is, become unemployed) and for some unemployed to continue searching (that is, to remain unemployed instead of leaving the labor force). Thus, the labor force participation rate increases. A decrease in the frequency of job offers or in the mean of the wage offer distribution has a reverse effect on

participation.

The change in labor force participation in response to a change in the expected frequency of job offers, or in the expected wage should an offer materialize, is the discouraged worker effect. Empirically, the effect has been identified with the elasticity (cross-sectional or time-series) of the participation rate with respect to unemployment: as the unemployment rate increases, the participation rate falls, and conversely. In the context of the model sketched above, a rise in the unemployment rate lowers the probability of finding an acceptable job. This could occur because the rate of arrivals of job offers diminishes or because the expected wage declines.

If there are fixed costs of entering or leaving the labor force, the size of the discouraged worker effect will depend upon the duration of the shock. In particular, if the shock is persistent, the discouraged worker effect will be larger (holding constant the size of the shock). Intuitively, a negative shock that is expected to be brief in duration is not likely to deter many job seekers from further search, if they know that they would incur start-up costs once the shock was over. A prolonged positive shock, to take the opposite case, provides a longer period of time over which to amortize the fixed costs of labor force participation.



## II. Added and Discouraged Workers in Practice: The 1930s

The debate between Woytinsky and his critics occurred in the context of a broader effort to understand the dynamics of labor force participation, of which the added and discouraged worker effects were an integral part of the story. Woytinsky's primary goal was to count the number of added workers. In his view, the added worker effect was ideally measured through a "painstaking analysis of the work history and family status" of individuals, which could discern whether a person was "a usual gainful worker or an additional worker who entered the labor market because of the unemployment of the usual family breadwinner".<sup>7</sup> Absent such detailed information, insights could be derived from cross-sectional differences in labor force participation of family members correlated with employment status of the head of the household (see below).

Unfortunately, either type of information was scarce for specific areas, and nonexistent at the national level at the time Woytinsky wrote. He therefore devised several estimation methods that made use of data at hand.<sup>8</sup> Application of these methods produced (to Woytinsky's critics) surprisingly large estimates of the added worker effect. For example, applying one method to data from Philadelphia for 1936, Woytinsky estimated that the ratio of added workers to unemployed usual workers was 14.1 percent in Philadelphia in 1936. Applying another method to the same data, the estimated ratio of added workers to unemployed usual workers

was 16.2 percent, or 4.4 percent of all usual gainful workers.<sup>9</sup> In absolute terms, the added worker effect was small, but it did not look small relative to annual fluctuations in labor force participation, as they were perceived at the time.

Clarence Long devoted a full chapter of his book, The Labor Force Under Changing Employment and Income, towards refuting Woytinsky's "theory that unemployment of the main breadwinner would make it necessary for other members of the family ... to follow the 'help wanted' notices ... thereby result[ing] in additions to both the labor force and unemployment."<sup>10</sup> Long attacked Woytinsky using a variety of arguments and sources, but his coupe de grace was a table showing labor force participation rates of married women cross-classified by husband's employment status that he constructed from a special report of the 1940 census.<sup>11</sup> Long's table revealed that the participation rate of wives (ages 18 to 64) with unemployed husbands was 13.6 percent, slightly lower than the participation rate of wives whose husbands were employed (13.7 percent).<sup>12</sup> Further, the same data, when disaggregated by race, residence, and childbearing produced no consistent patterns relating wives' participation to the employment status of husbands.

Taken at face value, Long's table appeared to offer compelling evidence against Woytinsky. Long failed to point out, however, that the special report counted husbands with public emergency work relief jobs (PEW) as unemployed.<sup>13</sup> This procedure, which was standard at the time, would not matter if wives of

unemployed men and wives of men on work relief had similar labor force participation rates. As we show below, however, wives of men on work relief had vastly lower labor force participation than wives of unemployed men -- so much so in the aggregate that the employment status of husbands appeared to be irrelevant as far as the labor force participation of married women was concerned.

Using published census data for cities in 1940, William Bowen and T. Aldrich Finegan studied the determinants of labor force participation in a multivariate regression context. Controlling for various factors, Bowen and Finegan discovered a large, statistically significant, negative correlation between city-level unemployment and labor force participation rates for married women, which they interpreted as a (net) discouraged worker effect. Several problems with Bowen and Finegan's analysis can be noted. First, the variables available from the published 1940 census that are plausible determinants of labor force participation are small in number and do not, in general, correspond to the proper demographic group -- married women or their husbands. For example, Bowen and Finegan used the median wage and salary income of all males in the labor force as a proxy for the median income of all husbands, and the median years of school completed of all women aged 25 and over as a proxy for the educational attainment of married women. The sensitivity of their conclusions for 1940 to these specification issues has never been investigated.

Second, the published 1940 census data analyzed by Bowen and Finegan do not distinguish wives by their husband's employment status. Hence, while published data can be used to examine the net cross-sectional association between area unemployment and labor force participation, they cannot be used to study the added and discouraged worker effects simultaneously (that is, the gross flows associated with different levels of unemployment). Thus Bowen and Finegan could not separate the added worker effect from the discouraged worker effect.

Third, Jacob Mincer argued that Bowen and Finegan's cross-sectional approach measured the cumulative effect of persistent unemployment on participation, not what would occur in response to short-run fluctuations in unemployment.<sup>14</sup> Mincer's argument had two parts. First, the ranking of cities by unemployment levels tended to be fairly stable over time, regardless of the aggregate level of unemployment. Thus, for example, if unemployment was relatively high in, say, Birmingham, Alabama in 1957, it was likely to be relatively high in 1958. Second, Mincer claimed that, over time, there would be a selective outmigration from high unemployment cities of persons with strong attachment to the labor force to cities with low unemployment. The consequence was a cross-sectional responsiveness of participation to unemployment that was larger than would be observed in any city (or, for that matter, the nation) due to a reduction in unemployment from year  $t$  to year  $t+1$ . Subsequently Bowen and Finegan confirmed Mincer's point for the 1963-1967

business cycle expansion, showing that the cross-sectional elasticity was an accurate guide to cumulative changes in participation over several sustained years of economic growth, but not to yearly movements in unemployment.<sup>15</sup>

### III. Data, Analysis, and Results

Our empirical analysis is based on the public use sample (PUMS) of the 1940 census.<sup>16</sup> The public use sample is a large (1/100) random sample of the population containing extensive information on household and personal characteristics. Unlike earlier censuses, which measured labor force participation using the gainful worker concept, information on labor force status in 1940 pertained to the census week (March 24-30, 1940). For each person aged 14 and over, one of nine labor force statuses was reported, including whether the person was employed in a "emergency" government job (that is, on work relief). For persons deemed unemployed during the census week (including persons on work relief), the number of weeks of unemployment since the last private or non-relief government job of one month or more was recorded.

We restrict our attention in this paper to nonfarm married women between the ages of 14 and 54, who were not disabled, and whose husbands were (1) present at the time of the census (2) employed as a wage or salary worker (the self-employed and unpaid family laborers are excluded) or unemployed or not in the labor

force. Further, we excluded married couples who had migrated across county boundaries between 1935 and 1940.<sup>17</sup>

Our investigation of the added worker effect proceeds in two steps. First, we examine cross-sectional differences in participation among married women. Second, we examine transitions in labor force status, using the (limited) information available in the PUMS. Specifically, we construct a dummy variable, WW39, indicating whether or not a woman worked at least one week in 1939. Labor force "entry" is defined as the move from zero weeks worked in 1939 (WW39=0) to being in the labor force in the census week. Labor force "exit" is defined as the move from positive weeks worked in 1939 (WW39=1) to being out of the labor force in the census week.

We classify husbands into four labor force categories, according to their employment status during the census week: (1) employed at a private sector or nonemergency government job, (2) employed at a work relief job, (3) unemployed, (4) out of the labor force. Within the unemployed category, we distinguish individuals by the duration of unemployment, and by whether they held a work relief job in 1939. We are able to identify the latter due to a peculiarity of the 1940 census. Information on wage and salary income and weeks worked in 1939 was collected for persons aged 14 and over. But, because income in 1939 included income from work relief jobs, weeks worked in 1939 and weeks of unemployment (as measured by the census) can overlap. For example, individuals could report 65 weeks or more of

unemployment (that is, all of 1939 and 1940 up to and including the census week) and 52 weeks worked in 1939. Given the census conventions, we can be virtually certain that such persons held a work relief job in 1939.<sup>18</sup> Section 4 argues that this information is useful in determining whether the association between work relief and labor force participation is causal.

We measure the discouraged worker effect as Bowen and Finegan did. Using information on their location, we identified a subsample of married women in the 1940 PUMS who lived in 71 of the urban areas included in Bowen and Finegan's study (see the data appendix). The urban unemployment rate was included as an independent variable in the participation regressions (see below). If a discouraged worker effect, as Bowen and Finegan defined it, is present, we expect to see a negative correlation between the urban unemployment rate and the fraction of wives in the labor force, ceteris paribus.

Although our primary interest in this paper is investigating the sensitivity of Bowen and Finegan's finding of a large, cross-sectional discouraged worker effect to the improved regression specification made possible by the 1940 PUMS, we conduct a limited exploration of Mincer's criticisms. First, as noted above, we focus on non-migrants solely. By restricting attention to nonmigrants, we eliminate the possibility that a negative association between individual wives' labor force participation and area unemployment reflects selective migration of labor force participants into cities with low unemployment rates. Second, we

analyze whether transitions in labor force status (as defined above) were correlated with urban unemployment rates in 1940. Suppose that participation in 1940 is negatively correlated with unemployment in 1940, but the transitions are uncorrelated (or the correlation is low, as we report below). This outcome can arise if WW39 is negatively correlated with unemployment in 1940, which implies that urban areas with relatively high unemployment in 1940 had relatively high unemployment in 1939, consistent with the thrust of Mincer's argument.

In addition to the unemployment rate, we also include three other city-level variables: the percent female (age 14 and over); industry mix; and median annual (full-time) female earnings in 1939 (see the data appendix). Following Bowen and Finegan, the percent female is expected to have a negative effect on participation in 1940; the industry mix variable, which captures the extent to which urban employment was biased towards industries in which female labor was concentrated in, is expected to have a positive coefficient; and female earnings is also expected to have a positive effect on participation.

Various limitations of the 1940 PUMS should be noted. There was concern at the time of the census that the data on unemployment durations were frequently approximate, that weeks worked were not always reported correctly, and that employment on work relief was understated.<sup>19</sup> Less information on nonwage income and on wealth was gathered in 1940 than by more recent censuses or the Current Population Survey. The "transition"



probabilities referred to above will not capture all the relevant transitions, because we have no information on labor force status in 1940 before or after the census week.<sup>20</sup> Finally, the 1940 PUMS sheds no light on added and discouraged workers in the early or middle years of the Depression.

Despite these limitations, the sample is far superior to data analyzed in previous studies. Because we can identify the employment status of husbands, we can effectively reconstruct a replica of Long's table without the problems afflicting his analysis, and we can study the discouraged worker effect in a multivariate context (a la Bowen and Finegan) simultaneously with the added worker effect (which Bowen and Finegan could not do). Because we can match individual husbands to their wives, we have much better information on the intra-household determinants of labor force participation than did Bowen and Finegan.

Turning to the results, Table 1 presents labor force participation rates of married women conditional on the labor force status of their husbands. Following the procedure used in the 1940 special report, here we include husbands on work relief among the unemployed, but we also tabulate the labor force participation of wives by husband's PEW status and duration of unemployment (among unemployed husbands not on work relief). The column labelled Full Sample refers to all women meeting the sampling criterion in our extract from the 1940 PUMS. The column labelled Bowen-Finegan refers to observations in the Bowen-Finegan subsample (see the data appendix).

In the full sample, 16.3 percent of the women were in the labor force during the census week. The participation rate was higher (by 1.4 percentage points) in the Bowen-Finegan subsample, presumably because participation rates were generally higher in urban areas, and the Bowen-Finegan subsample is, by construction, urban. Contrasting the wives of employed and unemployed husbands, neither column shows much of an added worker effect. In the full sample, the participation rate of married women with unemployed husbands was 1.2 percentage points lower than the participation rate of married women with employed husbands. An added worker effect is visible in the Bowen-Finegan subsample, but it is small (1.4 percentage points).

The conclusion changes radically if unemployed husbands are disaggregated by work relief status. Wives whose husbands were on work relief in 1940 were far less likely to be participating in the labor force than wives of unemployed or employed husbands. In the full sample, the participation rate of married women whose unemployed husbands were not on work relief in 1940 was 6.7 percentage points higher than that of wives of employed men, and a full 16.2 percentage points higher than the participation rate of married women whose husbands were on work relief. Clearly, Long's failure to find a cross-sectional difference in labor force participation among married women whose husbands were employed or unemployed was a consequence of the treatment of work relief in the 1940 special report.

Among wives with unemployed husbands not on work relief,

participation rates rose slightly with the duration of unemployment; in the Bowen-Finegan subsample, the relationship followed an inverted-U pattern. Consistent with the theory in section 2, wives of men who were out of the labor force had a slightly lower participation rate than the peak rate observed among wives of unemployed men. Women whose husbands had held a work relief job in 1939 had lower participation than women whose husbands had not held such jobs, but they were far more likely to be in the labor force in 1940 than women whose husbands were on work relief at in 1940.

Table 2 shows estimates of transition probabilities, using the procedure outlined earlier, along with the proportion of women working at least one week in 1939 ( $WW39=1$ ). Before discussing Table 2, it is important to note that transitions were relatively infrequent. Although this is partly due to the brevity of the time interval over which the transitions are measured, it also is a consequence of the fact that, prior to World War Two, labor force participation among married women tended to be heterogenous. Specifically, among married women in the labor force at a given point in time, a relatively large fraction had been in the labor force continuously for several years. The infrequency of transitions observed in the 1940 PUMS is consistent with other evidence showing a high degree of long term attachment to the labor force among women currently in it.<sup>21</sup>

The probability of entering the labor force was higher, and the probability of leaving the labor force was lower, among wives

whose husbands were unemployed than among wives whose husbands were employed in a private or nonemergency government job. Wives whose husbands were on work relief in 1940 were less likely to enter the labor force than wives whose husbands were unemployed, and they were also vastly more likely to leave the labor force than wives whose husbands fell into any of the other labor force categories. Wives of men on work relief in 1940 were also far less likely than other wives to have worked at least one week in 1939.

Tables 1 and 2 suggest that an added worker effect was present among married women in 1940. The observed effect, however, may simply reflect other factors correlated with the husband's employment status that also influenced participation.<sup>22</sup> Further, our analysis thus far has said nothing about the discouraged worker effect.

Accordingly, Table 3 presents logistic regressions of participation in 1940 and labor force transitions by wives in the Bowen-Finegan subsample. Column 1 shows the samples of the independent and dependent variables. In column 2, the dependent variable takes the value 1 if the woman was in the labor force during the 1940 census week, 0 otherwise. In column 3, the sample is restricted to women who did not work in 1939 ( $WW39=0$ ); the dependent variable takes the value 1 if the woman was in the labor force in 1940, 0 otherwise. In column 4, the sample is restricted to women who did work in 1939; the dependent variable takes the value 1 if the woman was not in the labor force in

1940, 0 otherwise. The independent variables are demographic characteristics of the woman (age, schooling, and race), a dummy variable indicating the presence of own children under age 18 in the home, characteristics of the husband (labor force status, predicted weekly wage), characteristics of the household (homeownership status, receipt of nonlabor income), the four urban-based labor market variables (unemployment rate, percent female, female earnings, and industry mix), and region. Predicted weekly earnings, which were computed from an auxiliary regression, are intended to capture the effect of the husband's "permanent" income on wives' participation.<sup>23</sup>

With respect to the labor force status of husbands, the multivariate analysis does not alter the findings in Tables 1 and 2. Controlling for other factors, wives whose husbands were unemployed or out of the labor force were more likely to be in the labor force than wives whose husbands were employed (the reference group). Wives whose husbands were on work relief were the least likely to participate in the labor force. The patterns with respect to labor force transitions are also not changed in a multivariate context.

A cross-sectional discouraged worker effect, a la Bowen and Finegan, is clearly present. In the regression of participation in 1940, the area unemployment coefficient implies a surprisingly large one-for-one effect, evaluated at the sample means: every one percentage point decrease in the unemployment rate increases the participation rate by one percentage point.<sup>24</sup> The analysis

of transitions, however, reveals that the effect of area unemployment was to reduce the likelihood of entry but the magnitude was economically small -- a one percentage point decrease in area unemployment raised the probability of entry by 0.08 percentage points. While statistically significant, the size of the entry effect is much too small to explain the one-for-one reduction in participation in 1940, as mentioned above. Our proxy for market work in 1939 (WW39), therefore, was low in cities with high unemployment in 1940 -- which could only have been true if unemployment in 1939 was similarly high.<sup>25</sup> Thus, consistent with Mincer's argument, the ranking of cities by unemployment could not have changed much from 1939 to the first quarter of 1940, and the large cross-sectional unemployment coefficient more likely reflects a medium or long-run adjustment of participation to local aggregate demand conditions than a short-run discouraged worker effect.

In addition to her husband's employment status and the level of unemployment in her city of residence, the likelihood a married woman would participate in the labor force was a function of age, schooling, among other factors. The nature of these relationships was conventional for the period. Younger women and women with no own children living at home were more likely to participate in the labor force than older women or woman with children living at home. Nonwhite women had higher participation rates than white women; more schooling also increased the likelihood of participation. Economic status mattered: wives'

participation was a negative function of the husband's predicted weekly wage, and homeownership. The effects of childbearing and race operated through both entry and exit transitions, while those of economic status appeared to have influenced only the entry decision, not the odds of leaving the labor force once a woman was in it. Consistent with Bowen and Finegan's findings, a city's female population rate and its industry mix influenced the likelihood of participation. The higher the proportion of women in the population, the lower the odds of participation, apparently because of a higher rate of exit. An industry mix biased towards female employment encouraged a higher entry rate and a lower exit rate. Contrary to Bowen and Finegan, annual female earnings had no significant effect on participation, once other factors were controlled for.

#### Is the PEW Effect "Real"?

The preceding analysis establishes the existence of an added worker effect late in the Depression. The absolute size of the added worker effect, however, appears to have been reduced by the availability of work relief. Wives were far less likely to participate in the labor force if their husband held a work relief job than if their husband was otherwise employed or was unemployed.

What accounts for the negative impact of work relief on wives' labor force participation? One explanation invokes

eligibility requirements for work relief.<sup>26</sup> To become eligible for work relief, an unemployed person had to meet various criteria, including an upper limit on family income established by local relief authorities. If family income exceeded the limit, the person could not be certified for work relief.

Even if family income was less than the absolute limit, the family typically faced a "relative need" standard. Qualified families with relatively lower incomes were, other things equal, assigned a higher priority for any work relief jobs that were available. In addition, by the late 1930s, persons on work relief were subject to periodic or continuous reviews of eligibility, by state or federal authorities. The "relative need" standard, along with eligibility reviews, were a consequence of the queue for PEW jobs. At any one time, the number of people eligible for work relief exceeded the supply of jobs. Since the earnings of family members other than the head would normally be included (in whole or in part) in the determination of family income, families with working wives risked having the unemployed husband declared ineligible for work relief, or else be placed far down the queue.

Yet, while PEW eligibility requirements provide a prima facie case that labor supply incentives within families were altered, correlation does not prove causation. The strongest case for a true PEW effect is the difference in participation rates and transition probabilities between wives whose husbands were on work relief in 1940 and wives whose husbands were not on



work relief in 1940 but who had been on work relief in 1939. If the observed PEW effect were merely an indicator of generally low tastes for market work, we would expect to see these women participate in the labor force at a similar rate compared with women whose husbands were currently on work relief. While their participation in the labor force was less than among women whose husbands were unemployed (see Tables 1 and 3), they were much more likely to participate than women whose husbands were on work relief in 1940. This difference in participation, along with the much greater likelihood of leaving the labor force among women who had worked in 1939 and whose husbands were on work relief in 1940, suggests that work relief did alter labor supply incentives within households.<sup>27</sup>

If work relief did reduce incentives for married women to enter the labor force, more would have been in the labor force in 1940 in the absence of the work relief. An estimate can be derived by assuming that wives of men on work relief in 1940 would have participated as frequently as wives of men who were not on work relief in 1940 but who had been on work relief in 1939. Under this assumption, the participation rate of wives whose husbands were unemployed (including those who would have held a work relief job) would have been 19.9 percent in the full sample (compared with an observed rate of 14.9 percent), and the participation rate of married women in the full sample would have been 16.9 percent, instead of 16.3 percent. In terms of numbers, this translates into approximately 153,000 "added workers", or

1.2 percent of the female labor force in 1940.<sup>28</sup>

#### IV. Additional Implications

The principal finding of this paper is the discovery of the flaw in Clarence Long's argument and the consequent rehabilitation of Woytinsky's point of view on the added worker effect. The results also bear, however, on several related issues in the literature.

The first concerns the appropriate labor force classification of persons on work relief. As noted earlier, the 1940 census counted persons on work relief as unemployed. This classification was challenged by Michael Darby, who argued that persons with work relief jobs were voluntarily "employed" by the government, and should therefore be subtracted from the count of unemployed.<sup>29</sup> A major implication of our results is that accepting Darby's definition of the labor force entails acceptance of an added worker effect even larger than that revealed in Table 1.<sup>30</sup> One cannot, in other words, simultaneously agree with Darby on work relief and with Long that the added worker effect was negligible.

A related issue concerns the impact of work relief programs on the economic behavior of unemployed workers. Jonathan Kesselman and N.E. Savin rejected Darby's revisions partly on the grounds that persons on work relief and persons otherwise unemployed were "look-alikes", that is, very similar in their

economic and demographic characteristics and therefore, presumably, in behavior.<sup>31</sup> But, with respect to family labor supply, persons on work relief and those otherwise unemployed clearly were different, and these differences appear to have been behavioral. In this regard, our findings are consistent with recent work by John Wallis and Daniel Benjamin, who argue that New Deal relief programs (including work relief) reduced the supply of labor to the private sector, potentially displacing some private employment growth that would have occurred in absence of the programs.<sup>32</sup>

Finally, we have demonstrated the robustness of Bowen and Finegan's finding of a large cross-sectional discouraged worker effect in 1940 to the improved specification made possible by the 1940 PUMS. Yet our results also suggest that Mincer's criticism is valid. If so, annual movements in the female labor force in the 1930s could have been dominated by added workers, as Woytinsky believed. In the early 1930s, there were no PEW jobs, and rising unemployment could have generated more added workers than discouraged workers (as Woytinsky believed). When aggregate demand conditions finally improved late in the decade, more individuals moved from unemployment to employment than vice versa, while the share of the unemployed on work relief actually increased.<sup>33</sup> Such shifts (according to the results in this paper) would have caused the aggregate labor force participation rate of married women to decline. If the increase in aggregate demand was perceived, at the time, to be transitory rather than

permanent, comparatively few discouraged workers (among married women) would have chosen to enter the labor force. The labor force participation rate of married women would then have declined due to the dominance of the added worker effect.<sup>34</sup> Only a sustained reduction in unemployment would have brought forth the increase in the labor supply among discouraged workers implied by our cross-sectional results.

Such a sustained increase happened during World War Two. Among women aged 18 to 45 who were not in the labor force on the immediate eve of Pearl Harbor, 14.3 percent were in the labor force in March of 1944.<sup>35</sup> On a quarterly basis, this translates into an entry rate into the labor force of about 1.7 percent per quarter, or 55 percent higher than the rate reported in Table 2 for the full sample, aggregated over all employment statuses of husbands (the row labelled Total).<sup>36</sup> The official unemployment rate in 1944 was 1.2 percent.<sup>37</sup> Using the logistic regression of entry transitions in Table 3, the elasticity of the entry transition rate with respect to the area unemployment rate is 0.67 (evaluated at the sample mean transition rate). A reduction in unemployment to 1.2 percent is equivalent to a 90 percent fall in the mean urban unemployment rate in the Bowen-Finegan subsample -- which, in turn, would have increased the mean entry rate by 61 percent. An increase in the mean entry rate in March 1940 of 61 percent accounts for about 70 percent of the difference between the wartime entry rate (1.7 percent per quarter) and the rate reported in Table 2. The remainder of the

increase in the entry rate may reflect changes in social norms during the war years regarding the suitability of women for certain types of jobs, a decline in the value of time devoted to home production (because husbands were off at war), and the effect of patriotism on the willingness of married women to contribute to the war effort by going to work.<sup>38</sup>

## V. Conclusion

This paper has re-examined added and discouraged worker effects in the late 1930s. We find that the added worker effect was alive and well, but its visibility was muted by the operation of work relief policies. For many households, work relief for the husband, with his wife at home, appears to have been more attractive than having the husband remain unemployed and sending her into the labor market. Our analysis of the 1940 PUMS does not change the prevailing view of a large cross-sectional discouraged worker effect among married women in 1940, but it does suggest that, as in the post-World War Two period, the predicted change in labor force participation from such cross-section data reflects a long-run response to a persistent change in aggregate demand. Among married women, therefore, the added worker effect might well have dominated the discouraged worker effect in the 1930s.

## VI. Data Appendix

Data on the labor force status, economic and demographic characteristics of each married woman and her husband were taken directly from the public use sample of the 1940 census, as were data on homeownership, region, and receipt of nonwage income by the household. Each of these variables is defined in the text, the tables, or relevant footnotes. The full sample included all nonfarm, nonmigrant, non-disabled married women, ages 14 to 54, who were living with a non-self-employed husband during the census week.

The Bowen and Finegan (B-F) subsample comprised those married women in the 1940 PUMS (as described above) residing in 71 urban areas. Most of these areas were cities of 100,000 population or more that had been included as observations in the original B-F intercity regressions for 1940.<sup>39</sup> There were 92 cities in the original regressions, but central city residents in 20 of them were not identified by city in the 1940 PUMS, either to protect confidentiality of respondents, or because the city was not classified as a central city of a standard metropolitan area (SMA) in 1950 (the classification used in constructing the 1940 PUMS). Most of these cities had to be dropped from the reconstructed B-F sample, but we were able to salvage five of them by using observations for the SMA containing the (unreported) central city. We made such substitutions only when the central city accounted for over half of the total population

of the SMA (recall that residents of farms were excluded from our sample). In three cases, we combined nearby pairs of central cities (for example, Minneapolis and St. Paul) into a single urban area when these cities belonged to the same SMA and had very similar unemployment rates in 1940.

Data on the labor market variables for each urban area were taken directly from the original work sheets of the B-F study; the definitions and original sources of these variables are shown below:

(a) City unemployment rate. The percentage of the total labor force, ages 14 and over that was seeking work in the census week of 1940. Source: U.S. Bureau of the Census, Sixteenth Census of the United States: 1940, Population, Volume IV, Table 5.<sup>40</sup>

(b) Industry mix. A measure of the percentage of jobs in each city that would be expected to be held by women, based on the industrial breakdown of total employment. For a detailed explanation of how this variable was constructed, see Bowen and Finegan, The Economics of Labor Force Participation, Appendix B. Source: U.S. Bureau of the Census, Sixteenth Census of the United States: 1940, Population, Volume IV, Table 17.

(c) Percent female. The percentage of the city's total population, ages 14 and over, that was female. Source: U.S. Bureau of the Census, Sixteenth Census of the United States: 1940, Population, Volume IV, Table 5.

(d) Earnings of Females. Estimated median wage or salary income received in 1939 by all females in the city who worked twelve

months and earned at least \$100.00 of such income that year.

Source: U.S. Bureau of the Census, Sixteenth Census of the United States: 1940. Population, Volume IV, Table 16.

A floppy disk containing the city-level data is available from Robert A. Margo on request.



## Notes

1. Woytinsky, Three Aspects, p. 106.
2. Long, The Labor Force, ch. 10.
3. In the absence of credit constraints, the added worker effect is likely to be very small, since the only incentive to enter the labor force is a cross-substitution effect (see Lundberg, "The Added Worker", p. 12). If capital market imperfections were common knowledge, a rational household would presumably choose to accumulate additional savings in anticipation of future periods of unemployment.
4. Mincer, "Labor Force Participation and Unemployment," p. 95.
5. This assumes that there is no hysteresis or state dependence in participation via the added worker effect. That is, the fact that the wife participates in the labor force for, say, the six months her husband is unemployed does not permanently raise her odds of being in the labor force in the future.
6. Devine and Kiefer, Empirical Labor Economics, pp. 24-26.
7. Woytinsky, Three Aspects, p. 114.
8. Woytinsky, Three Aspects, pp. 129-135.
9. Woytinsky, Three Aspects, pp. 135, 176.
10. Long, The Labor Force, ch. 10. The quote is from p. 181.
11. Long, The Labor Force, p. 193. Long constructed his table from information reported in U.S. Bureau of the Census, Sixteenth Census of the United States: 1940, The Labor Force, pp. 164-175.

12. A small added worker effect can be observed in the aggregate if the data are "standardized" (Long does not explain how the standardization was performed).

13. See U.S. Bureau of the Census, The Labor Force, p. 6, which states "[i]n the tables on employment status of husband" those "seeking work" (the unemployed) "were included with the group 'On public emergency work". In making this point we are not suggesting that Long's mistake was deliberate; as far as we know, he was unaware that wives of men on work relief had very low labor force participation.

14. Mincer, "Labor Force Participation and Unemployment."

15. In a later critique, Belton Fleisher and George Rhodes ("Unemployment and the Labor Force Participation of Married Men and Women") contended that Bowen and Finegan's cross-sectional OLS regressions overstated the cyclical responsiveness of labor force participation to unemployment because the unemployment rate is (allegedly) endogenous in such regressions, acting as a proxy for unobserved average characteristics of married women that are negatively associated with participation. Any such bias is presumably negligible in our study because we are examining interhousehold variation at the micro level, holding constant the characteristics of the cities in which these households lived.

16. U.S. Bureau of the Census, Census of Population, 1940: Public Use Microdata Sample.

17. By construction in the 1940 PUMS, a woman classified as "disabled" was not in the labor force; that is, there is no way to measure the effect of a disability on labor force participation. We therefore excluded disabled women from the sample because their husbands' employment status could not, by definition, affect their labor force participation. We exclude women over the age of 54 because their husbands were at risk of retirement (or would have retired already), and the decision faced by a married women to participate in the labor force when the husband retires is likely to be very different from the decision to participate when the husband is unemployed at a younger age. We exclude self-employed husbands and farm households, for whom the meaning of the census question on unemployment is not clear and for whom the majority of income was not reported. The restriction to nonmigrants is explained in the text.

18. We take a conservative approach in measuring work relief experience in 1939. By definition the maximum number of weeks a person in the labor force could actually work or be unemployed during the period January 1, 1939 to March 30, 1949 is 65. As noted in the text, duration of unemployment is measured from the last private or non-emergency government job that lasted longer than one month (which we assume is equal to 4 weeks). We make the conservative assumption that if the sum of weeks unemployed and weeks worked exceeds 73, the individual held a work relief job at some date in 1939. It is likely that this assumption

biases downward the fraction on work relief in 1939, for three reasons. First, weeks worked in the 1940 census are "full-time equivalent" weeks; that is, if a person worked 52 weeks at a half-time job (eg. 20 hours per week), weeks worked is reported as 26, not 52. The majority of work relief jobs were part-time jobs in this sense. Thus, some persons reporting weeks worked and weeks unemployed equal to, say, 70, might have held a work relief job (half-time) for 14 weeks or more in 1939, but they will be missed by our algorithm. Second, the greater the sum of weeks worked and weeks unemployed (in excess of 73), the lower the probability that no job held in 1939 exceeded one month in duration. It is implausible, for example, that an individual reporting 65 weeks of unemployment and, say, 48 weeks worked held 12 different private or non-emergency jobs, each less than a month's duration, in 1939. However, it is plausible that a person reporting 65 weeks unemployed and 5 weeks worked might have held two non-relief jobs of short duration. The selection of 73 weeks is a compromise, but the cutoff could be set at 69 (the minimum implied by the census) or higher (eg. 79) with no change in the substantive results. Third, we are ignoring nonparticipation; a person could have held a work relief job in 1939 but have been out of the labor force for some period, such that the sum of weeks unemployed and weeks worked is less than 73.

19. See Jenkins, "Procedural History", pp. 96, 101.

20. In particular, we will fail to observe transitions among women who did not work in 1939 but who entered and left the labor force between January 1, 1940 and March 23, 1940, or who entered the labor force after March 30, 1940.

21. See Goldin, "Life-Cycle Labor Force Participation". The infrequency of entry may also reflect the operation of "marriage bars". Marriage bars, whose incidence apparently increased in the 1930s, refer to personnel policies adopted by firms that prohibited the hiring of married women (the "hire" bar) or the retention of women who married while employed (the "retain" bar). Marriage bars were concentrated in service-sector industries employing women in clerical or office work (eg. insurance, banking) and in the public sector (eg. public school teachers). Marriage bars, however, do not appear to have been adopted in factory work, and they were much less common in small firms (see Goldin, Understanding the Gender Gap, ch. 6, for a discussion of marriage bars). Thus, while the existence of marriage bars limited married womens' employment opportunities, the bars did not make labor force participation impossible.

22. We have in mind the following "assortative mating" argument. Suppose that men who are prone to unemployment are more likely to marry women with a strong attachment to the labor force. Then we would observe a cross-sectional difference in wives participation due to husbands' employment status, but not because of the added worker effect. An example of such a characteristic is race. Black men experienced higher rates of unemployment in the 1930s

than white men (see Sundstrom, "Last Hired, First Fired"); black women were more likely to participate in the labor force than white women, even after controlling for racial differences in household income and other factors (Goldin, Understanding the Gender Gap). By controlling for observable factors such as race, age, education, and other factors, the possibility that assortative mating explains the observed added worker effect is mitigated.

23. The sample for the auxiliary regression of weekly earnings consists of husbands in the Bowen-Finegan subsample who were not on work relief in 1940 and who worked 48 to 52 weeks in 1939. The independent variables were experience, experience squared, race, years of schooling, and regional dummies.

24. The expression for  $dp/dX$ , where  $p$  is the probability of participation and  $X$  is the unemployment rate, is  $dp/dX = \beta p(1-p)$ . The conclusion in the text is reached by setting  $p$  equal to its sample mean, 0.174,  $\beta$  equal to -0.072, and evaluating the expression. The one-for-one effect in Table 3 is larger than the corresponding effect in the original Bowen and Finegan regression for 1940 -- as it should be, because Bowen and Finegan measured the discouraged worker effect net of the added worker effect, while we are measuring the two effects simultaneously.

25. To demonstrate this point formally, we begin with the following equation:

$$LF40 = P_e \times (1 - WW39) + (1 - P_x)WW39$$

where LF40 is the labor force participation rate in 1940,  $P_e$  is the entry rate as defined in the text, and  $P_x$  is the exit rate. Differentiating with respect to U, the area unemployment rate, gives:

$$\begin{aligned} dLF40/dU &= dWW39/dU \times (1 - P_x - P_e) + (1 - WW39) \times dP_e/dU \\ &\quad - dP_x/dU \times WW39 \end{aligned}$$

The term,  $-dP_x/dU \times WW39$  can be ignored because the coefficient of the unemployment in the exit regression was statistically insignificant. Evaluating the above expression at the sample means and solving for  $dWW39/dU = -0.011$ , that is, a one percentage point increase in U is associated with a 1.1 percentage point reduction in WW39.

26. The discussion in this paragraph and the next are based on Howard, The WPA, chs. 15-17 ("Eligibility: Measuring Need", "Eligibility: Relative Need", and "Eligibility: Social Security Benefits and Continued Need").

27. We acknowledge that our argument is vulnerable to the following criticism: women whose husbands were on work relief could have systematically concealed their employment from census enumerators, possibly out of a fear that the census would report them to the authorities, despite assurances of confidentiality.

An analogous pattern of concealment of employment is observed today in the case women receiving welfare; see Jencks, Rethinking Social Policy, pp. 204-235. Because there was a queue for work relief jobs, however, there were incentives to report egregious violations of eligibility requirements to the proper authorities.

28. In making the calculation, we assume that the percentage increase in participation observed in our full sample in the absence of work relief would apply to the nation as a whole. Accordingly, the participation rate of married women would have increased by 3.68 percent ( $= 16.9/16.3$ ). According to the published 1940 census, the participation rate of married women was 13.8 percent (Goldin, Understanding the Gender Gap, p. 17), there were 30,090,488 married women, and 13,007,000 women of all marital statuses in the labor force (U.S. Bureau of Census, Historical Statistics, pp. 20, 133). Multiplying the number of married women times the increase in the participation rate, measured in percentage points ( $0.51 = 13.8 \times 0.0368$ ) gives 153,461 additional labor force participants, or 1.2 percent ( $= 153,461/13,007,000$ ) of the female labor force in 1940.

29. Darby, "Three-and-a-Half Million U.S. Employees Have Been Mislaid".

30. If persons on work relief are counted among the employed, the difference in labor force participation between wives of employed and unemployed husbands not on work relief rises to 7.3 percentage points in the Full Sample (from 6.7 percentage points, see Table 1) and to 8.8 percentage points in the Bowen-Finegan



subsample (from 8.3 percentage points, see Table 1).

31. Kesselman and Savin, "Three-and-a-Half Million Workers Never Were Lost," p. 211. On the characteristics of persons on work relief and persons otherwise unemployed, see Margo, "Interwar Unemployment".

32. Wallis and Benjamin, "Private Employment and Public Relief". For the opposite point of view that displacement of private employment was small, see Kesselman and Savin, "Three-and-a-Half Million Workers Never Were Lost."

33. See Margo, "Employment and Unemployment," Table 1.

34. Oddly, evidence that such a decline took place is presented in Long, The Labor Force, pp. 182-183. Long noted that between the 1937 Enumerative Check Census reported about 3 million more females in the labor force than did the 1940 Census of Population, yet he concluded that it was not possible to explain "the higher than normal participation" in 1937 "by analysis".

35. Goldin, "Women's Employment," p. 748.

36. The entry rate,  $p$ , is estimated by the following equation:

$$1 - (1-p)^{1/n} = F$$

where  $n$  is the number of quarters and  $F$  is the proportion entering. In the application in the text,  $n = 9$  (there were approximately nine quarters between December 1941 and March 1944, the time period to which the calculation refers) and  $F = 0.143$ .

37. U.S. Bureau of the Census, Historical Statistics, p. 135.
38. Goldin, "Women's Employment."
39. For the results of the original 1940 B-F regression for married women, see Bowen and Finegan, The Economics of Labor Force Participation, Appendix Table B-101, pp. 836-837.
40. Contrary to the stated definition of this variable in Bowen and Finegan, The Economics of Labor Force Participation, Appendix Table B-100, p. 835, persons on work relief were not counted as unemployed in the original Bowen-Finegan regressions.

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Table 1

## Labor Force Participation of Married Women By Husband's Employment Status, March 1940

Husband	Full Sample		Wife	
	N	LFPR	Bowen-Finegan N	LFPR
Employed	103,898	16.1%	40,308	17.0%
Unemployed	15,947	14.9	5,529	18.4
On PEW in 1940	7,734	6.6	2,135	7.6
Not on PEW in 1940	8,213	22.8	3,394	25.3
Not on PEW in 1939	7,093	23.9	2,978	26.1
< 6 months unem.	3,945	22.6	1,411	25.6
6-12 months	1,379	25.0	593	27.2
>=12 months	1,769	25.3	974	26.1
On PEW in 1939	1,120	16.9	416	19.7
Out of Labor Force	5,439	24.5	1,959	24.4
Total	125,284	16.3	47,796	17.4

Source: see data appendix

PEW: public emergency work (work relief)

LFPR: percent of married women in labor force in census week [(employed + unemployed + PEW)/population]

Full Sample: married women, ages 14-54, not disabled, in a nonfarm household, husband is present and not self-employed, husband and wife are non-migrants (lived in same state and same county in 1935 and 1940).

Bowen-Finegan: restricted to residents of central cities of standard metropolitan areas successfully matched to the cities used in Bowen and Finegan's (The Economics of Labor Force Participation) 1940 cross-sectional regressions (see the data appendix).

Table 3

## Logistic Regressions: Labor Force Participation of Married Women

	Sample Means (1)	In Labor Force in 1940 (2)	Transitions	
			Entry (3)	Exit (4)
		B	B	B
Constant		1.121 (1.211)	-1.733 (0.520)	-7.245 (3.082)
Wife:				
Age				
25-34	0.31	0.302 (6.586)	-0.072 (0.472)	-0.543 (5.379)
35-44	0.33	0.076 (1.500)	-0.389 (2.286)	-0.769 (6.378)
45-54	0.27	-0.774 (13.610)	-0.910 (4.666)	-0.587 (4.157)
Years of Schooling				
5-8	0.47	0.190 (3.590)	0.450 (2.425)	0.155 (1.004)
9-12	0.37	0.328 (5.710)	0.264 (1.279)	0.266 (1.628)
>=13	0.06	0.804 (10.981)	0.796 (2.960)	0.096 (0.476)
Nonwhite	0.07	0.276 (5.258)	0.632 (3.670)	-0.415 (2.825)
Presence of own children in household under age 18	0.66	-1.376 (50.959)	-0.799 (8.109)	0.714 (10.457)
Husband:				
On PEW in 1940	0.050	-0.896 (10.381)	0.332 (1.785)	0.715 (3.740)
Unemployed				
Not on PEW in 1939				
0<months<6	0.027	0.563 (8.416)	1.230 (6.791)	-0.485 (2.439)
6<=months<12	0.011	0.606 (6.047)	1.149 (4.182)	-0.340 (1.188)
12<=months	0.019	0.747 (9.240)	0.706 (2.602)	-0.865 (3.079)
On PEW in 1939	0.008	0.238 (1.813)	0.787 (2.141)	-0.070 (0.201)
Out of Labor Force	0.038	0.643 (10.612)	0.773 (3.910)	-0.629 (3.369)
Predicted Weekly Wage x 10 <sup>-1</sup>	3.11	-0.208 (8.320)	-0.201 (2.105)	-0.029 (0.432)
Household:				
Receipt of non-wage income in 1939	0.22	0.081 (2.489)	0.352 (3.125)	0.079 (0.963)

Table 3 (continued)

Homeowner	0.30	-0.227 (7.012)	-0.451 (3.406)	0.015 (0.180)
City Data:				
Percent Unemployed	0.124	-0.716 (8.306)	-0.696 (2.210)	-0.082 (0.400)
Percent Female of Population, 14+	0.513	-0.500 (2.688)	-0.395 (0.586)	1.440 (3.065)
Industry Mix	0.303	0.571 (8.134)	0.382 (1.452)	-0.624 (3.753)
Female Earnings x 10 <sup>-2</sup>	9.08	0.011 (0.859)	-0.019 (0.414)	0.021 (0.633)
Region:				
Midwest	0.35	-0.027 (0.469)	0.025 (0.119)	-0.232 (1.754)
South	0.14	-0.042 (0.625)	0.065 (0.261)	-0.224 (1.411)
West	0.09	0.015 (0.239)	0.099 (0.414)	0.110 (0.756)
N		47,796	38,822	8,974
Dep.var.-mean		0.174	0.012	0.123
2 x loglik.		4,820.849	335.324	260.913

Notes: Column (1): sample means for the regression in column 2. Column 2: dependent variable = 1 if individual was in the labor force in 1940, 0 otherwise; Column 3: sample consists of all individuals who worked zero weeks in 1939; dependent variable = 1 if individual was in the labor force in 1940, 0 otherwise; Column 4: sample consists of all individuals who worked positive weeks in 1939; dependent variable = 1 if individual was not in the labor force in 1940, 0 otherwise. Left-out dummy variables: age group 15-24, 0-4 years of schooling, husband employed at private sector or non-emergency job, resident of Northeast. Predicted weekly wage: see footnote 23. Absolute value of t-statistics are shown in parentheses. Source: see data appendix.