The Shadow Labor Supply and Its Implications for the Unemployment Rate

By Troy Davig and José Mustre-del-Río

I n the wake of the Great Recession, with more Americans unemployed than at any other time in the last quarter-century, millions of workers stopped seeking work. The crisis saw a sharp rise in the number of people who, in response to surveys, indicated they wanted a job but were not actively seeking one. As long as these individuals are not actively seeking work, they are not considered part of the labor force and are not counted as unemployed in official government statistics such as the unemployment rate. The group continued to swell through the first few years of the economic recovery and, by early 2013, numbered some 6.7 million—nearly 2 million more than before the crisis. Residing on the periphery of the labor market, this group may be viewed as a "shadow labor supply."

How these people fare in the months and years to come could have an important influence on the unemployment rate. If many of these people start actively seeking jobs as the economy recovers, they will be counted as unemployed until they find work, and that could push the unemployment rate upward or at least slow its descent.

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Demographically, in terms of age, gender, race and other traits, individuals in the shadow labor supply are strikingly similar to the unemployed. A statistical analysis suggests, however, that likely changes in labor force participation by this group will have only a modest effect on the unemployment rate over the next few years. The modest impact is due to the fact that flows from the shadow supply of labor into unemployment are small compared to other labor market flows. Moreover, historical experience suggests these flows are less likely to occur as the expansion matures, further dampening the impact of the shadow supply of labor on the unemployment rate. Thus the shifting status of those who want jobs but are not currently seeking them will probably have little impact alone on the future path of the unemployment rate. Even under extreme assumptions regarding their participation, the unemployment rate by the end of 2016 would shift by slightly less than half of a percentage point. More generally, the larger, non-employed population—which also includes individuals who currently do not want a job—may affect the unemployment rate more considerably. For a given set of economic conditions, the likely range of variation in labor market participation by the entire non-employed population could affect the unemployment rate by as much as 1 percentage point by the end of 2016.

Section I describes demographic characteristics of those who are not searching for work, and thus are not in the labor force, but indicate they do want a job. Section II examines flow rates from this group into employment and into unemployment, the latter indicating a switch to an active job search. Sections III and IV offer unemployment rate forecasts and show how they vary depending on assumptions about the dynamics of different subgroups' labor force participation.

I.   NON-EMPLOYED SUBGROUPS AND DEMOGRAPHIC COMPARISONS

To understand the shadow labor supply and its implications for the unemployment rate, it is necessary to document the demographic characteristics of the group's individuals. To the extent that these individuals are observed to be similar to the officially unemployed, all else equal, their labor market behavior is also likely to be similar to the unemployed. Moreover, documenting demographic distinctions

between the shadow labor supply and other individuals not looking for employment is important because the shadow labor supply is 7.5 percent of those not in the labor force. Thus, inferences about the pool of those not in the labor force may not apply to the shadow labor supply.

This section first describes the data used in the analysis. It then compares and contrasts the shadow labor supply with two groups: those who are actively looking for work—the unemployed—and those who are not in the labor force and indicate they do not want a job.

Data description and definitions

Data used in this article come from the Current Population Survey (CPS), also called the household survey. The CPS is a monthly survey of approximately 60,000 households conducted by the Census Bureau for the Bureau of Labor Statistics (BLS). The CPS provides comprehensive data on labor force status, hours of work, earnings, and other demographic characteristics of the U.S. population. The CPS is a key gauge of the health of the labor market because it quantifies the number of individuals employed, unemployed, and not in the labor force.

Each month, the Census Bureau interviews individuals to determine their labor force status based on recent employment or job search activity. Interviews are typically conducted the third week of the month, and labor force status is based on an individual's activity the prior week, known as the reference week. If during the reference week an individual worked or was associated with an employer—even if on vacation or temporarily away due to illness—that person is considered employed. For the non-employed, the CPS categorizes individuals as unemployed (U) or not in the labor force (NLF) based on their reported job search behavior. An individual who was available to work and actively sought work in the four weeks before the interview week is considered U. An individual who was not available for work or did not seek work is considered NLF.[1]

While these definitions of non-employment are tractable, they are also somewhat arbitrary as can be seen by comparing the activities of two hypothetical jobless individuals. Suppose the first individual searched only during the first week of the four-week reference period and did nothing the remaining weeks. Meanwhile, the second individual searched one week prior to the same four-week reference

Chart 1

THE SHADOW LABOR SUPPLY: THOSE NOT IN THE LABOR FORCE BUT WHO WANT A JOB

Thousands (seasonally adjusted)

Individuals Not in the Labor Force But Who Want a Job (16 Years and Older)

Sources: Authors' calculations, Bureau of Labor Statistics, NBER, Haver Analytics.
Note: Shaded areas represent NBER-defined recessions.

period but did nothing thereafter. By CPS definitions, the first individual is considered U while the second is NLF. The individuals, however, had similar search patterns during the reference week and through most of the four-week reference period. Thus, the different labor force classifications of these individuals reflect the criteria used to classify someone as U, despite their similar behavior.

In 1994, the Census Bureau redesigned its survey and refined the classification of NLF individuals. The new CPS asks all NLF individuals whether they "want a job" (NLF-WJ), or "do not want a job" (NLF-DWJ).[2] The NLF-WJ group is the shadow labor supply and includes individuals identified as marginally attached to the labor force and discouraged workers.[3] The NLF-WJ group, however, is broader and includes about 4 million more individuals than groups comprised of either marginally attached or discouraged workers. Much of the growth in the NLF-WJ group has occurred since the recent recession (Chart 1).

Demographic comparisons

Age. The NLF-WJ and U are similar in age, whereas a comparison between the NLF-WJ and NLF-DWJ groups shows the latter is considerably older (Chart 2). The bars represent the average fraction

Chart 2
AGE DISTRIBUTION BY LABOR MARKET GROUP
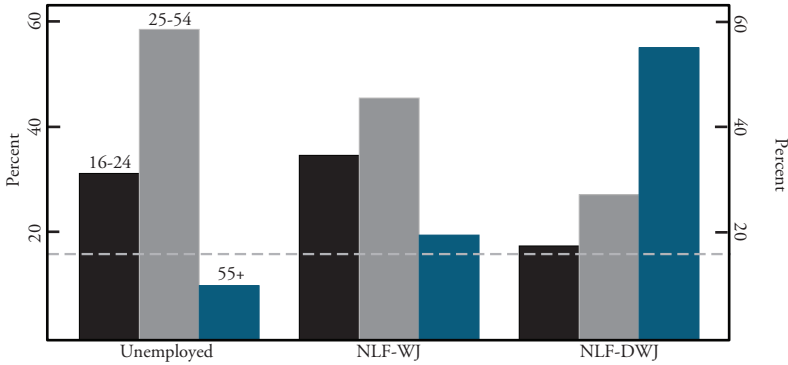
Sources: Authors' calculations, Bureau of Labor Statistics.
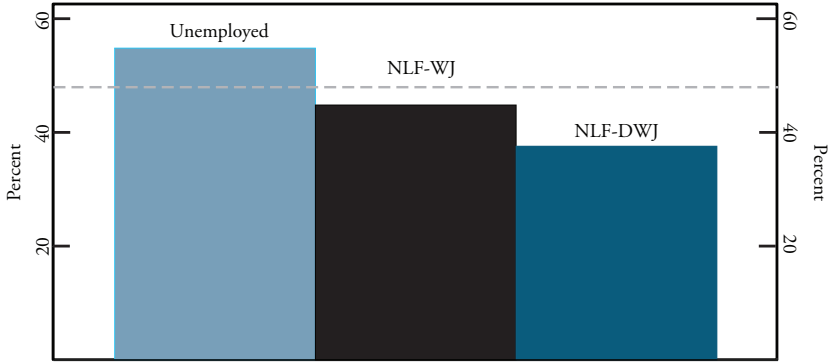Note: Dashed line represents fraction of individuals in the civilian working-age population ages 16-24.

of individuals who are young (16 to 24), prime aged (25 to 54), and older (55 and older) for each non-employed labor market category over the sample period from January 2000 to April 2013. For reference, the dashed line is the fraction of young individuals in the civilian working-age population. Each black bar in Chart 2 representing younger workers is above the dashed line because younger workers comprise a smaller share of the employed population than their share of the working-age population. On average, the U and NLF-WJ have a higher proportion of young individuals (31 percent and 35 percent, respectively) than the whole population (16 percent), while the young NLF-DWJ proportion (18 percent) is similar to the entire population.

Gender. The gender composition of the NLF-WJ group is more similar to the U group than the NLF-DWJ group (Chart 3). Importantly, men are about 45 percent of individuals categorized as NLF-WJ. This proportion is between the percentages for the U (55 percent) and NLF-DWJ (38 percent). Using the dashed line (the share of men in the working-age population) as a reference, both NLF categories have a lower share of males than the whole population (Chart 3).

Race. The racial composition of the NLF-WJ is also similar to that of the U group. (Chart 4). Notably, the share of white NLF-WJ individuals (72 percent) is nearly identical to white individuals in the U

Chart 3

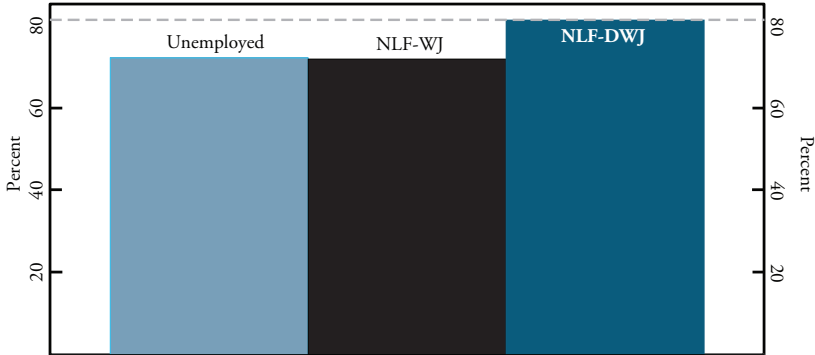## MALE POPULATION BY LABOR MARKET CATEGORY

Sources: Authors' calculations, Bureau of Labor Statistics.
Note: Dashed line represents fraction of the civilian working-age population that is male.

Chart 4

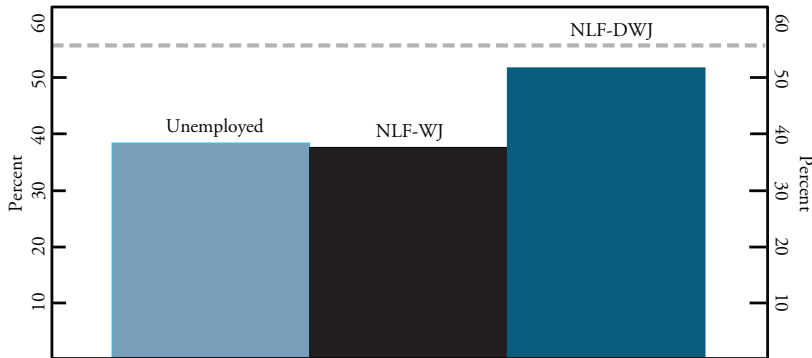## WHITE POPULATION BY LABOR MARKET CATEGORY

Sources: Authors' calculations, Bureau of Labor Statistics.
Note: Dashed line represents fraction of individuals in the civilian working-age population who are white.

Chart 5
MARRIED POPULATION BY LABOR MARKET CATEGORY

Sources: Authors' calculations, Bureau of Labor Statistics.
Note: Dashed line represents fraction of individuals in the civilian working-age population who are married.

pool. However, the percentage for each group is less than for the NLF-DWJ and working-age populations.

Marital status. One key determinant of labor supply, marital status, is nearly identical among the NLF-WJ and U groups, but considerably different for the NLF-DWJ (Chart 5).[4] The percentage of married individuals in the NLF-WJ and U groups (38 percent and 39 percent, respectively) is considerably less than the percentage of married individuals in the NLF-DWJ group and working-age population (dashed line).

Education. Educational attainment is similar across non-employed categories, with each being less educated than the employed population (Chart 6). The educational attainment distributions suggest that the U group is slightly more educated than the rest. However, each group has a higher percentage of individuals with less than a high school education relative to the entire population (dashed line). In general, education is the category in which NLF-WJ is most similar to NLF-DWJ.

Children younger than 18. Lastly, both the U and NLF-WJ are more likely to have young dependents, suggesting a relationship between labor market attachment and children (Chart 7). The U group has the highest share of individuals with children younger than 18, followed by NLF-WJ and NLF-DWJ. Theoretically, the relationship between labor market attachment and children is not obvious since having young children is time intensive, which dampens labor supply, but also requires income, which boosts labor supply. The observed empirical relationship suggests the latter effect dominates.

Chart 6

EDUCATIONAL ATTAINMENT BY LABOR MARKET CATEGORY
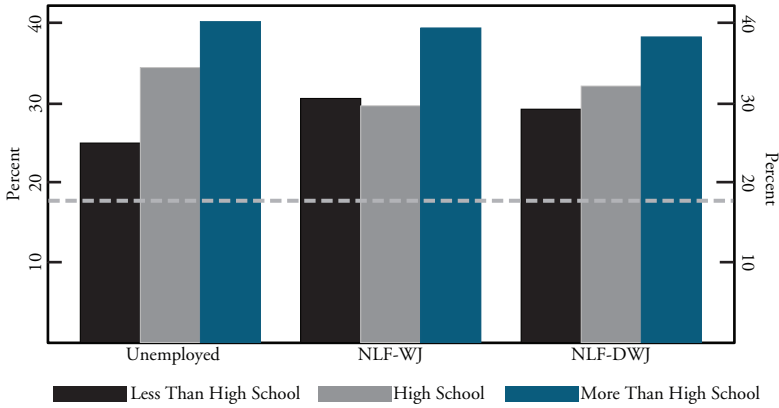
Sources: Authors' calculations, Bureau of Labor Statistics.
Note: Dashed line represents fraction of individuals in the civilian working-age population with less than a high school education.
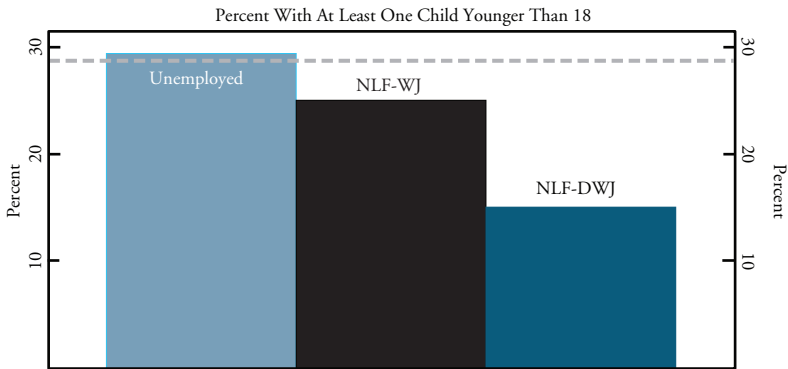
Chart 7

NUMBER OF CHILDREN BY LABOR MARKET STATUS

Source: Authors' calculations, Bureau of Labor Statistics.
Note: Dashed line represents fraction of individuals in the civilian working-age population with at least one child younger than 18.

II.   MEASUREMENT OF LABOR MARKET FLOWS

An analysis of labor market flows reveals that NLF-WJ individuals are more likely to move into the labor market than NLF-DWJ individuals. Notably, the difference in flow rates into unemployment between the two groups is more than tenfold. Moreover, the NLF-WJ flow into employment at a higher rate than the NLF-DWJ, but both groups are less likely than the officially unemployed to become employed. This is relevant because previous studies of labor market flows typically group NLF-WJ and NLF-DWJ into one category—NLF (Blanchard and Diamond; Shimer; and Elsby and others). This categorization masks important heterogeneity in the likelihood of participation within the NLF population, which stems at least in part from the demographic differences highlighted in Section I.
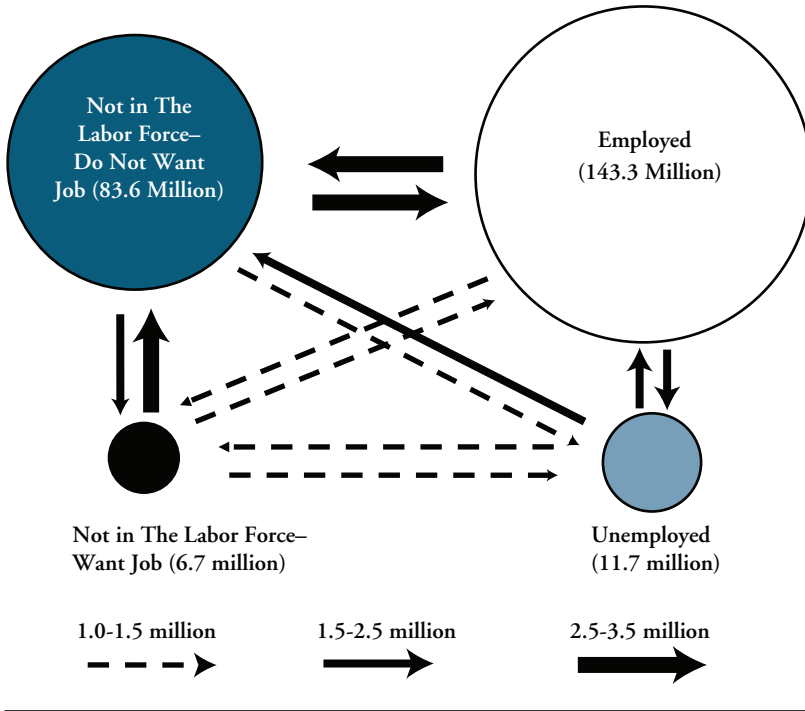
Measurement and evidence

Flows into and out of the labor force illustrate the dynamic nature of the labor market. These flows can be seen through the lens of the CPS data, which tracks individuals over time by matching consecutive monthly interviews.[5]

The records from these interviews can be used to calculate the number of individuals who change labor market categories month to month.[6] This procedure captures, for example, the number of individuals changing from NLF-WJ to U, denoted as NLF-WJ → U.[7]

As shown in Figure 1, the flows across categories can be quite large. The size of each circle and arrow in the figure represents the relative size of each labor market category and flow as of April 2013.

Thus, the NLF-WJ circle is the smallest, with only 6.7 million people. In comparison, the U circle is nearly twice as big at 12 million and the NLF-DWJ circle is more than 10 times as big at 83.6 million. The flows show that, in any month, 1.0 to 1.5 million people move back and forth between NLF-WJ and U. Meanwhile, 1.5 to 2.5 million people move between unemployment and employment. To determine if these differences are large, it is useful to report flows as percentages of the labor market category individuals are exiting. For example, about 19 percent of NLF-WJ individuals become unemployed in the following month. Similarly, slightly more than 19 percent of U individuals

Figure 1

OVERVIEW OF LABOR MARKET FLOWS

Not in The Labor Force– Do Not Want Job (83.6 Million)

Employed (143.3 Million)

Not in The Labor Force– Want Job (6.7 million)

Unemployed (11.7 million)

| 1.0-1.5 million | 1.5-2.5 million | 2.5-3.5 million |

become employed in the following month. Lastly, more than half of all NLF-WJ become NLF-DWJ the next month.

NLF-WJ individuals are considerably more likely to become U and, therefore, participate in the labor market than NLF-DWJ (Chart 8). The lines in the chart are 12-month moving averages of the monthly flow rates described above. The peaks show that both NLF-WJ and NLF-DWJ individuals are more likely to flow into U during and shortly after a recession.[8] While both fractions move in tandem over the observed period, the important difference in these lines is their levels. Since 2000, between 1.3 percent and 2.0 percent of NLF-DWJ individuals have flowed into U within a month. Meanwhile, over 16 percent of NLF-WJ individuals have flowed into U.

The flow rates into employment provide additional evidence that NLF-WJ individuals have a higher likelihood of participating in the labor force in near future than NLF-DWJ individuals (Chart 9). In contrast to the flows into U, flows of the NLF groups into employment

Chart 8

MONTHLY TRANSITION RATE INTO UNEMPLOYMENT FROM THE NLF-WJ AND NLF-DWJ GROUPS
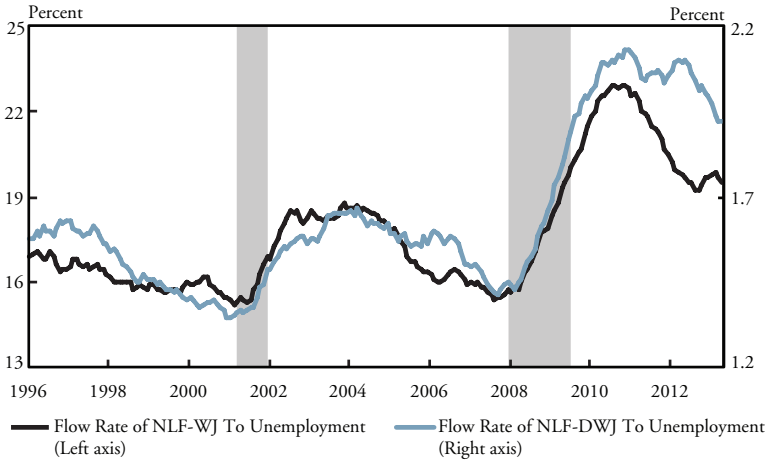
Sources: Authors' calculations, Bureau of Labor Statistics.
Note: Shaded areas represent NBER-defined recessions.

are pro-cyclical, generally increasing in a recovery.[9] Here too, the most notable difference in these flows is in their levels. Since 2000, between 3.5 percent and 5.0 percent of NLF-DWJ individuals flow into employment within a month. In contrast, 14 percent of NLF-WJ individuals flow into employment on average. Yet, the flow rate of the unemployed into employment is higher at around 18 percent.

III. VARIATIONS IN LABOR FORCE PARTICIPATION AMONG NLF-WJ INDIVIDUALS

The absolute size of the NLF-WJ group has increased considerably since before the last recession. This striking increase is illustrated by the movement of the 12-month average for the NLF-WJ group from about 4.7 million before the recession started in December 2007 to about 6.7 million in April 2013. If the NLF-WJ group were to shrink rapidly to its pre-recession size due to increased job-search intensity, the inflow of about 2 million more individuals could cause the unemployment rate to decline much more slowly than its current pace or possibly even rise.[10]

Two approaches may be taken to assess the implications of the NLF-WJ group's elevated size for the future path of the unemployment

Chart 9

MONTHLY TRANSITION RATE INTO EMPLOYMENT FROM THE NLF-WJ AND NLF-DWJ GROUPS
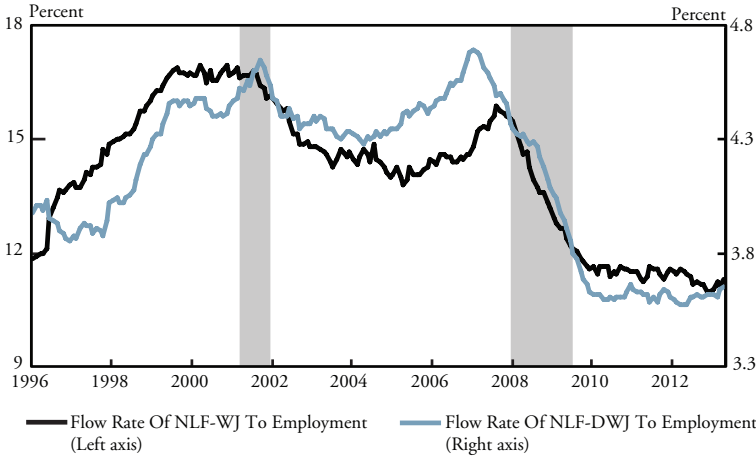
Sources: Authors' calculations, Bureau of Labor Statistics.
Note: Shaded areas represent NBER-defined recessions.

rate. The first approach is to focus only on variation in the flow rate from the NLF-WJ group into unemployment and how that variation may affect the unemployment rate. Looking only at changes in one flow rate, however, neglects the possible impact of shifts in the other flow rates amid varying economic conditions. A second approach takes into account possible variation in all of the flow rates among the three groups—the unemployed, the NLF-WJ, and the NLF-DWJ—to assess how the unemployment rate may be affected by potential shifts in the labor market participation rates of all these subgroups of the broader, non-employed population.

Each of these two approaches uses a statistical framework that captures how the various flow rates interact with each other and broader economic conditions. Specifically, four different vector autoregression (VAR) models are estimated for each labor market group. Each VAR contains the three outflow rates for each group and the Chicago Fed's monthly National Activity Index (CNAI), which captures broad economic conditions.[11] For example, outflows from the NLF-WJ group are included in a VAR model that uses four variables: one is the CNAI and the other three are the flows from the NLF-WJ group into employment, into unemployment, and into the NLF-DWJ group. A

similar VAR is estimated for the employed, the unemployed, and the NLF-DWJ groups, using data from January 1996 to April 2013. Each flow rate is converted to logs before estimation. Estimating four separate VARs is more tractable than estimating a single, larger VAR that combines all 12 flows across each labor market state.

Each VAR uses the Akaike Information Criterion to determine the appropriate lag length, which varies between four and six months. Given each VAR, and a path for the CNAI, the paths of the various flow rates can be projected. In turn, the various flow rates imply a trajectory for the unemployment rate and the labor force participation rate. Population is assumed to grow at an annual rate of 0.9 percent. New entrants are inserted into each labor market category in proportion to each category's size.[12]

Projections of the various flow rates between labor market groups depend on the projected path of the CNAI. This path is calibrated so that the implied aggregate unemployment rate declines through 2014 on a path approximately in line with the May 2013 Blue Chip consensus forecast. Thereafter, the path for the CNAI is chosen to be consistent with a steady decline in the unemployment rate to about 5.5 percent by the end of 2016. The endpoint of 5.5 percent is chosen as the midpoint of the projected long-run range given for the unemployment rate by the Federal Open Market Committee's March 2013 Summary of Economic Projections. The resulting path for the CNAI is given in Chart 10.

Also, the employment to NLF-DWJ flow rate is calibrated to account for demographic forces, including an aging population. As a result, the labor force participation rate remains essentially flat through the projection horizon in the baseline scenario, consistent with the projection in Van Zandweghe (2012). Given paths for the employment to NLF-DWJ flow rate and the CNAI, flow rates can be projected for each labor market category, and the implied unemployment rate and labor force participation rate can be computed.

The flow rates computed in this way suggest that, at least in the absence of any sudden shock, a new surge of the NLF-WJ group back into the unemployed group would seem unlikely. The projected flow rate for NLF-WJ into unemployment gradually declines as the expansion matures (Chart 11).

Chart 10
CHICAGO FED NATIONAL ACTIVITY INDEX
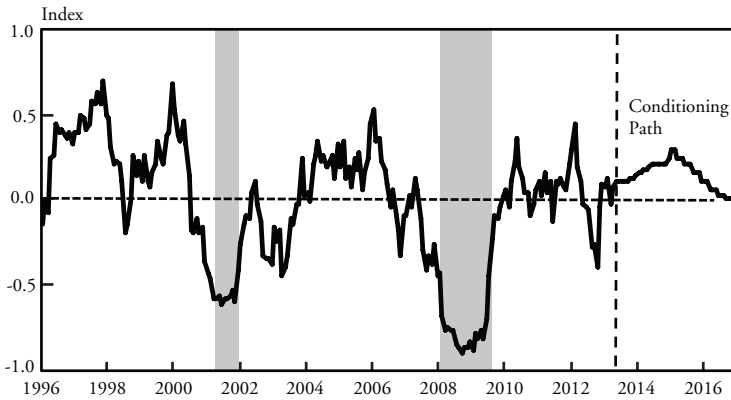
Sources: Authors' calculations, Federal Reserve Bank of Chicago, NBER, Haver Analytics.
Note: Shaded areas represent NBER-defined recessions.

The recent recession, however, was particularly severe. Given this severity, the flow from NLF-WJ into unemployment may vary from flows that followed previous, less severe recessions. As an alternative exercise, allowing the NLF-WJ to U flow rate to increase steadily toward its recent peak—about 23 percent in the second half of 2010—by the end of 2016 provides a sense of how much influence this flow rate might have on the unemployment rate. Such a path lies well above the upper bound of the 95th percentile confidence band in Chart 11. If this scenario were to materialize, perhaps because improving economic conditions lead NLF-WJ individuals to more actively search for work, and all the baseline projections from the model for the other flow rates shown in Figure 1 are used, then the unemployment rate increases about 0.3 percentage points above the baseline projection at the end of 2016 (Table 1 third column). Based on this group's historical behavior, however, such an increase in its flow rate into unemployment would be unexpected at this stage of the business cycle.

At the other extreme is a scenario where the NLF-WJ to U flow rate steadily returns to its pre-crisis low of about 16 percent by the end of 2016—a path almost consistent with the lower boundary of the 95th percentile confidence band. In this case, the unemployment rate is only about 0.1 percentage points below the baseline projection at the end of 2016. Overall, the potential difference in the unemployment rate at the

Table 1

## PROJECTIONS OF LABOR MARKET CONDITIONS AT END OF 2016 UNDER VARYING ASSUMPTIONS

	Conditions as of April 2013	Projections at end of 2016 under alternative scenarios				
		Baseline	Increased participation: NLF-WJ only	Decreased participation: NLF-WJ only	Increased participation: All non-employed groups	Decreased participation: All non-employed groups
Unemployment Rate (percent)	7.5	5.6	5.9	5.5	5.9	5
Labor Force Participation Rate (percent)	63.3	63.3	63.7	63.1	64.5	62
Implied Employment Growth (average monthly change in thousands)		182	197	173	233	129
Date when the UR Hits 6.5 percent		2015 Q1	2015 Q2	2015 Q1	2015 Q3	2014 Q3

Notes: The second column represents the initial conditions imposed on all projections. The remaining columns describe the economy's trajectory through the end of 2016 under alternative assumptions for the pool of non-employed.

Sources: Authors' calculations, Bureau of Labor Statistics, NBER, Haver Analytics.

Chart 11
FLOW RATE FROM NLF-WJ INTO UNEMPLOYMENT
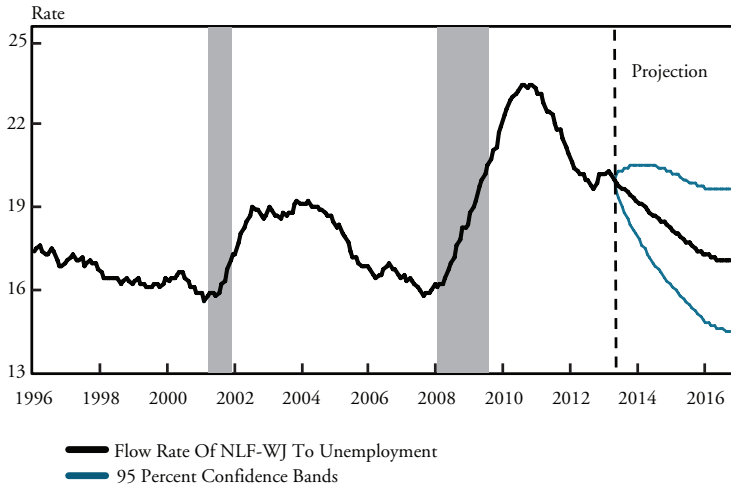
Sources: Authors' calculations, Bureau of Labor Statistics, NBER, Haver Analytics.
Note: Shaded areas represent NBER-defined recessions.

end of 2016 resulting from extreme variations in the flow rates out of the NLF-WJ group is about 0.4 percentage points (Table 1).

Although the possible 0.4-percentage-point range in the unemployment rate may appear modest, it could influence monetary policy. In particular, the NLF-WJ to U flow rate may affect the timing of when the unemployment rate reaches 6.5 percent. The importance of a 6.5 percent unemployment rate stems from the FOMC guidance given in December 2012, when the Committee said it intended to keep the target range for the federal funds rate at 0 to 0.25 percent "at least as long as the unemployment rate remains above 6.5 percent." Inflation must also remain contained, as the FOMC indicated it anticipated the target federal funds range of 0 to 0.25 percent to remain appropriate as long as "inflation between one and two years ahead is projected to be no more than a half percentage point above the Committee's 2 percent longer-run goal, and longer-term inflation expectations continue to be well anchored." Importantly, subsequent communication from FOMC members have indicated that an unemployment rate falling below 6.5 percent does not necessarily imply the federal funds rate target will be adjusted. For example, Vice Chair Janet L. Yellen, in a speech on February 11, 2013, said the values given for unemployment and inflation are

"thresholds for *possible* action, not triggers that will necessarily prompt an immediate increase in the FOMC's target rate" and that when "one of these thresholds is crossed, action is possible but not assured."

With the distinction between thresholds and triggers in mind, the projections indicate that in the scenario with an increase in the NLF-WJ to U flow rate to its previous peak, the unemployment rate remains above 6.5 percent until the second quarter of 2015 (Table 1). In contrast, if the NLF-WJ to U flow rate returned to its low just prior to the last recession, the 6.5 percent threshold is reached at roughly the same date as under the baseline projection, the first quarter of 2015. Thus, the likelihood of the NLF-WJ group's participation in the labor market and its job search activities does have an effect, but a modest one, on the trajectory of the unemployment rate and the time required for it to fall to 6.5 percent.

IV.   BROAD VARIATIONS IN LABOR FORCE PARTICIPATION AND THE UNEMPLOYMENT RATE

Individuals in the NLF-WJ group may flow into the other labor market categories and not just into unemployment. For example, as activity increases, the model projects the NLF-WJ to E flow to rise as the expansion matures, similar to the two previous expansions (Chart 12). The increase in the flow rate during expansions may reflect that, when economic activity is increasing, the NLF-WJ group is relatively successful in quickly finding work once members begin a job search and, therefore, are never classified as unemployed.

As an expansion matures, however, there is also a greater tendency for more NLF-WJ individuals to become increasingly detached from the labor market. In the current and previous expansions, about two to three years after the business cycle trough, the NLF-WJ to NLF-DWJ flow rate moved upward (Chart 13). That is, those who had indicated they wanted a job no longer wanted one. The model's projection shows this flow rate will likely remain close to its current level over the next few years, but then rise slightly in late 2015.

The unemployment rate is affected not only by the flows out of the NLF-WJ group, but also by the flows from all the other categories. The second experiment varies the likelihood of any non-employed individual looking for or wanting a job across all the non-employed labor

Chart 12
FLOW RATE NLF-WJ INTO EMPLOYMENT
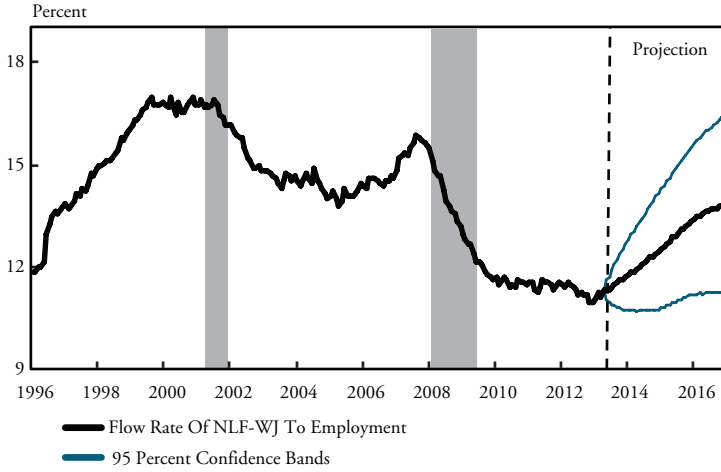
Sources: Authors' calculations, Bureau of Labor Statistics, NBER, Haver Analytics.
Note: Shaded areas represent NBER-defined recessions.

Chart 13
FLOW RATE OF NLF-WJ TO NLF-DWJ
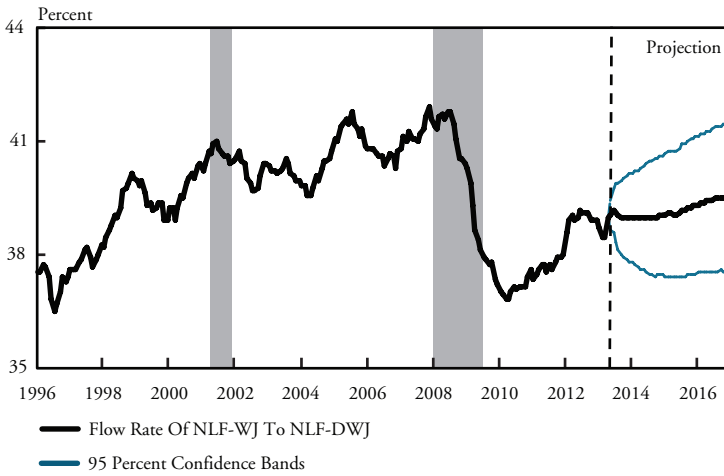
Sources: Authors' calculations, Bureau of Labor Statistics, NBER, Haver Analytics.
Note: Shaded areas represent NBER-defined recessions.

Chart 14
FLOW OF NLF-DWJ INTO UNEMPLOYMENT

Sources: Authors' calculations, Bureau of Labor Statistics, NBER, Haver Analytics.
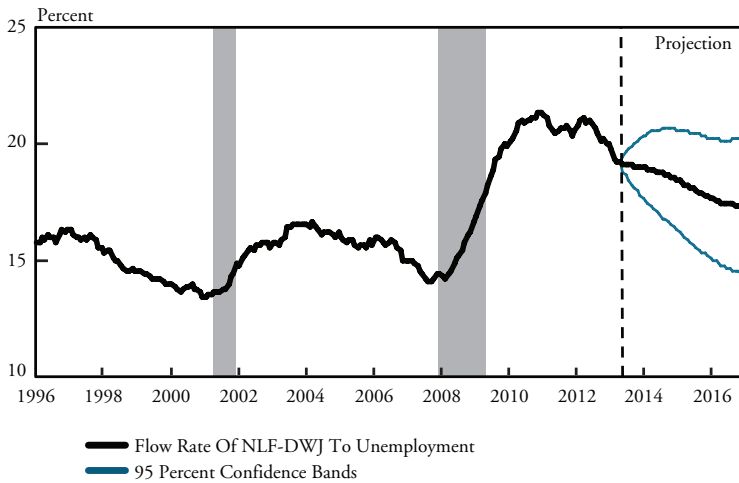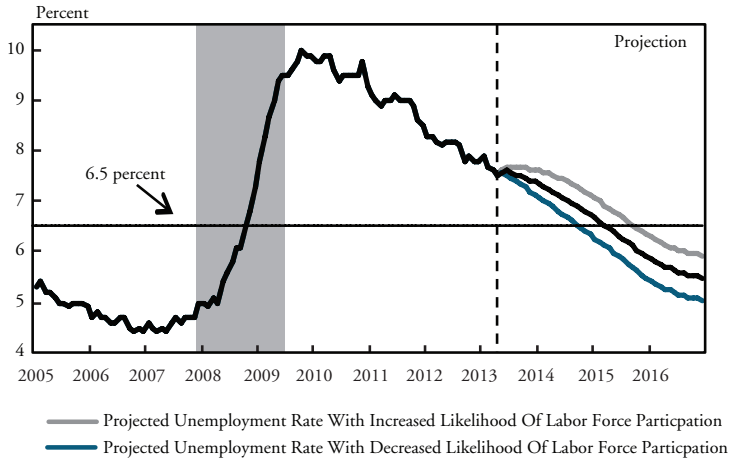Note: Shaded areas represent NBER-defined recessions.

market categories. A plausible range of outcomes is generated by taking the 95th percentile band for each flow rate out of each non-employed group.[13] For example, a decrease in the NLF-WJ to NLF-DWJ flow rate reflects an increase in the likelihood the NLF-WJ group will begin a job search and join the labor force. In this case, a NLF-WJ individual is more likely to continue wanting a job than in the baseline scenario and, thus, is more likely to flow into either employment or unemployment. In another example, an increase in the NLF-DWJ to U flow rate would reflect a re-entry of individuals into the labor market, consistent with a higher likelihood of labor force participation (Chart 14).

Given combinations of flow rates that either maximize or minimize the likelihood of participation for the non-employed population, the unemployment and labor force participation rates follow different paths (Charts 15 and 16). In a scenario where the non-employed population has a higher likelihood of participation, the unemployment rate declines at a slower pace compared with the baseline (Chart 15, gray line). The labor force participation rate rises substantially throughout the projection period, reaching 64.5 percent by the end of 2016 (Chart 16, gray line). In this scenario, the unemployment rate crosses the 6.5
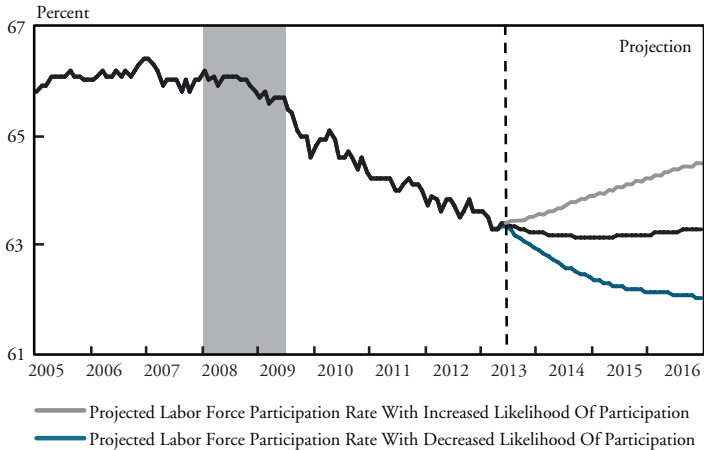
Chart 15

LIKELY EFFECT ON UNEMPLOYMENT RATE FROM JOB SEARCH BY ALL NON-EMPLOYED INDIVIDUALS

Projected Unemployment Rate With Increased Likelihood Of Labor Force Particpation
Projected Unemployment Rate With Decreased Likelihood Of Labor Force Particpation

Sources: Authors' calculations, Bureau of Labor Statistics, NBER, Haver Analytics.
Note: Shaded area represents NBER-defined recession.

Chart 16

LABOR FORCE PARTICIPATION RATE

Projected Labor Force Participation Rate With Increased Likelihood Of Participation
Projected Labor Force Participation Rate With Decreased Likelihood Of Participation

Sources: Authors' calculations, Bureau of Labor Statistics, NBER, Haver Analytics.
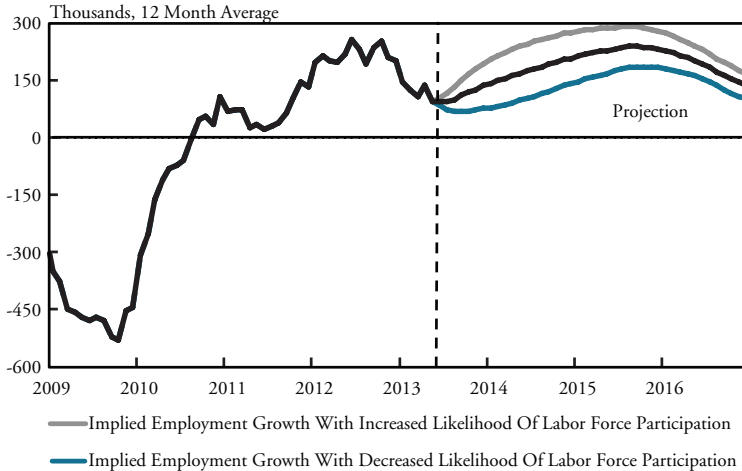Note: Shaded areas represent NBER-defined recessions.

Chart 17

EMPLOYMENT GROWTH UNDER ALTERNATIVE UNEMPLOYMENT AND PARTICIPATION TRAJECTORIES

Thousands, 12 Month Average

Projection

Implied Employment Growth With Increased Likelihood Of Labor Force Participation

Implied Employment Growth With Decreased Likelihood Of Labor Force Participation

Sources: Authors' calculations, Bureau of Labor Statistics, NBER, Haver Analytics.

percent threshold in the third quarter of 2015. At the end of 2016, it has only fallen to 5.9 percent. In the baseline scenario, the unemployment rate declines somewhat faster, reaching the 6.5 percent threshold sooner and falling further to 5.5 percent by the end of 2016. In contrast, in a scenario assuming a lower likelihood of labor force participation, the unemployment rate declines yet faster (Chart 15, blue line), reaching the 6.5 percent threshold in the third quarter of 2014 and falling to 5 percent by the end of 2016. In this scenario, labor force participation is slightly above 62 percent by the end of 2016 (Chart 16, blue line).

Using projections for the unemployment and labor force participation rates, as well as population growth, the implied level of employment growth can be inferred. For example, the baseline projection has the participation rate remaining essentially flat and the unemployment rate reaching 5.5 percent by the end of 2016. With population growth of 0.9 percent per year, the implied average rate of employment growth is 182,000 per month between mid-2013 and the end of 2016 (Table 1).[14] Employment growth would gradually rise and peak in mid-2015 at about 240,000 per month, then decline to about 135,000 by the end of 2016 (Chart 17).

In the alternative scenarios, the average monthly gain in employment growth varies substantially. With an increasing likelihood of participation, the unemployment rate reaches 5.9 percent and the labor force participation rate rises above its current level of 63.3 percent to 64.5 percent by the end of 2016. In this case, employment growth would average about 233,000 per month until the end of 2016. Peak employment growth would be about 290,000 per month in mid-2015, then gradually decline (Chart 17). Alternatively, with a decreasing likelihood of participation, the unemployment rate declines to 5 percent and the participation rate falls to 62.0 percent by the end of 2016. Employment growth in this case is subdued and averages only about 129,000 per month, with peak employment growth of only 185,000 in the second half of 2015.

V.   CONCLUSION

The shadow labor supply, consisting of individuals who are not actively searching for a job but would like to work, has grown considerably in recent years. Although this group has characteristics similar to those who are officially counted as unemployed, individuals in this group flow into employment at a lower rate. Still, they become employed at a much higher rate than those who indicate they do not want a job. Compared with that group, individuals in the shadow labor force are also more likely to start looking for a job.

Nevertheless, despite the swelling size of the shadow labor supply, a return of these individuals to the labor force in numbers that would considerably affect the unemployment rate appears unlikely. Variation in their job search behavior may influence the future path of the unemployment rate modestly, but not greatly. Although individuals in the shadow labor force do flow back into unemployment, the peak in their return to the labor force typically occurs in the first few post-recession years. The recent, post-recession peak of their flow back into unemployment has already occurred, in mid-2010. While another surge back into the labor force by individuals in the shadow labor supply is possible, historical evidence suggests it is unlikely. Broader variation in flows between the different non-employment categories, however, can have a more substantial impact on the unemployment rate over the next few years.

ENDNOTES

[1]According to the BLS website: "Workers expecting to be recalled from layoff are counted as unemployed, whether or not they have engaged in a specific job-seeking activity. In all other cases, the individual must have been engaged in at least one active job search activity in the 4 weeks preceding the interview and be available for work (except for temporary illness)."

[2]The NLF-WJ population has been the focus of previous studies. Blanchard and Diamond show that for 1968-86 the number of NLF-WJ individuals is about the same as the unemployed population. Due to data limitations, they were unable to measure flows by WJ and DWJ individuals. More recently, Daly and others measured the historical increase of NLF-WJs during the Great Recession and recovery.

[3]Persons marginally attached to the labor force are neither working nor looking for work. Additionally, they have indicated that they want and are available for a job and have looked for work in the past 12 months. Discouraged workers are a subset of the marginally attached. Aside from meeting the aforementioned requirements, discouraged workers have also cited a job-market related reason for why they are not currently searching (such as why they have become discouraged). By definition, both groups are included in this article's measure of NLF-WJ. The definition of NLF-WJ includes those who do not have a job and are not looking for one, but indicate they do want work.

[4]Mazzocco and others, and Kimmel and Kniesner discuss the relationship between marital status and labor supply.

[5]The study of gross flows to understand labor market dynamics follows the contributions of Smith, Vanski, and Holt; Clark and Summers; and Abowd and Zellner. Such studies have regained academic interest following the work of Shimer. In any two-month period, the analysis matches, on average, 76,000 individuals for a match rate of roughly 92 percent. Given sample definitions and time periods, this compares favorably with match rates reported by Fallick and Fleishman; Moscarini and Thomsson; and Daly and others. In all, the sample in this article consists of nearly 6 million matched records.

[6]Extensive descriptions on the construction of flows using CPS data include Shimer; and Fujita and Ramey.

[7]The analysis focuses on gross flows that are not adjusted for time aggregation or misclassification bias. See Shimer; Fujita and Ramey; and Elsby and others for discussions on these biases. The flows out of the NLF-WJ group are computed using matched records. Meanwhile, flows between employment and unemployment are computed from BLS published gross flows. Then, the remaining flows for the NLF-DWJ group are backed out. This approach ensures consistency of flows with the published levels for employment and unemployment from the BLS.

[8]The correlation of either flow (HP filtered) with the unemployment rate (also HP filtered) is above 0.75.

[9]The correlation of either of these flows (HP filtered) with the unemployment rate (HP filtered) is -0.72.

[10]See, for example, Daly, Elias, Hobijn, and Jordà.

[11]See Barnichon and Nekarda for a related approach.

[12]Instead of incorporating population growth into the model in a neutral way, another way would be to extend the framework to allow new entrants to enter the different labor groups depending on economic conditions. Or, because new entrants are younger, have them enter with a higher likelihood of being unemployed. However, altering the entry group for new entrants has only a slight effect on the trajectory for the unemployment rate relative to the neutral assumption.

[13]For example, an increase in the overall likelihood of participation of the non-employed population assumes an increase in the flow rates NLF-DWJ $\rightarrow$ NLF-WJ, NLF-WJ $\rightarrow$ U, and NLF-DWJ $\rightarrow$ U, along with a decrease in the flow rates NLF-WJ $\rightarrow$ NLF-WDJ, U $\rightarrow$ NLF-WJ, and U $\rightarrow$ NLF-DWJ.

[14]The average employment growth is a basic calculation performed outside the context of the model and is not incorporated in how variations in employment growth feedback affect broader economic conditions. The calculation infers employment growth based on a constructed path of the employment level which is consistent with the simulated paths for the unemployment and labor force participation rates, assuming a constant population growth rate.

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