Why Did the Unemployment Rate Rise So Little at the End of WWII?

Proposal for the NBER Conference on Economic Impacts of WWII

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I. Introduction

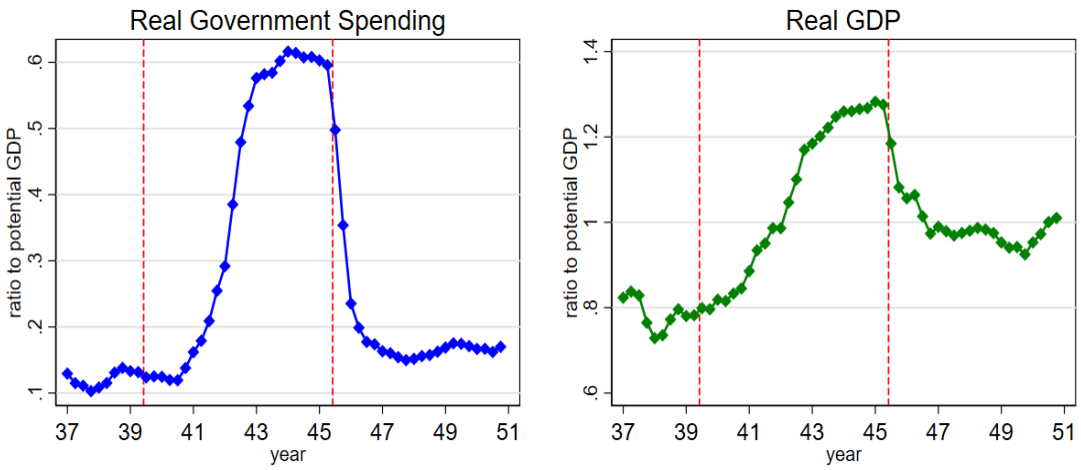
When World War II ended, government spending fell dramatically, demand shifted across sectors, and millions of individuals left their wartime jobs for other pursuits. Government purchases, which had been almost half of GDP at the peak of the war, fell by 70 percent within a year. Over 10 million members of the armed forces were discharged back to civilian life and consumer-focused industries that had converted to war production were seeking to ramp up again. Modern macro models that emphasize aggregate demand and labor market frictions predict that those events would have led to a significant rise in the unemployment rate —but that did not happen. After hitting a low of 1 percent in the first half of 1945, the unemployment rate rose to a peak of 4.2 percent in spring 1946 and hovered just below 4 percent for several years until the 1949 recession pushed it to almost 8 percent.

This paper studies why the upheaval to U.S. labor markets at the end of WWII resulted in only a small increase in the unemployment rate. It uses aggregate data, sectoral data, government surveys, and a new longitudinal dataset on thousands of individuals from 1940 to early 1950 to understand how the U.S. economy was able to reallocate workers so quickly. It also compares those experiences to modern outcomes to shed light on why labor markets appear to be less dynamic now.

Last but not least, this study aims to provide a new insight into the determinants of the labor market behavior in the post-2020 period. We will point out various similarities (and differences) of the labor markets between two unique periods and then draw some implications for the post-COVID labor market.

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Figure 1: Real Government Spending and Real GDP During WWII



Note: Ramey and Zubairy (2018) data. Both series are divided by potential GDP. Vertical red lines show start and end of WWII.

II. Backdrop of the Period

The economy of the 1940s was exceptional both because churning and sectoral reallocation were unusually high and because it ushered in changes in labor markets that persisted for decades. Figure 1 shows the behavior of real government spending and real GDP during WWII, expressed as the values relative to potential GDP. As noted in the introduction, real government spending rose at the start of WWII and then fell quickly after its end. Real GDP fell but to nowhere near to its pre-WWII levels, which were significantly below potential GDP.

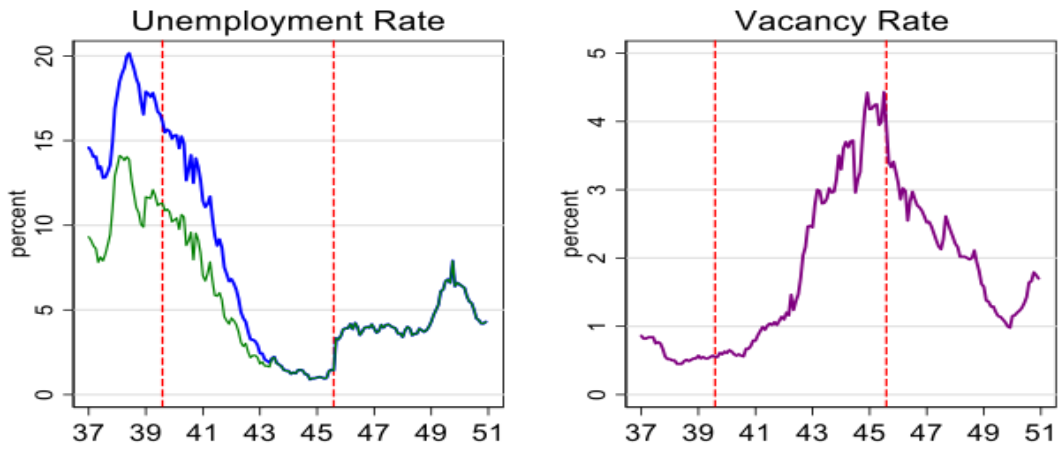
Figure 2 shows the unemployment rate and vacancy rate during the 1940s.[1] As the graph shows, the unemployment rate appears to have risen to its peacetime natural rate rather than spiking up as was widely expected at the time. The declines in the vacancy rate were much more substantial even though it remained higher than its pre-war level. This is notable in that in the post-war period, such large declines in the vacancy rate have always been accompanied by similarly large increases in joblessness. Note that a better understanding of this episode could provide an important insight into the current labor market debate on whether job vacancies, which are currently elevated at an usually high level, can fall without inducing a large increase in the unemployment rate even if the economy slows down. [2].

Figure 3 presents labor force participation rates during the 1940s. The participation rates increased sharply during the war. While they came down quickly after the war, the participation rate of women remained higher than the pre-war level. This figure shows that

[1]The unemployment rate is from Ramey and Zubairy (2018) and the vacancy rate is from Zagorsky's (1998) help-wanted series, divided by the labor force.

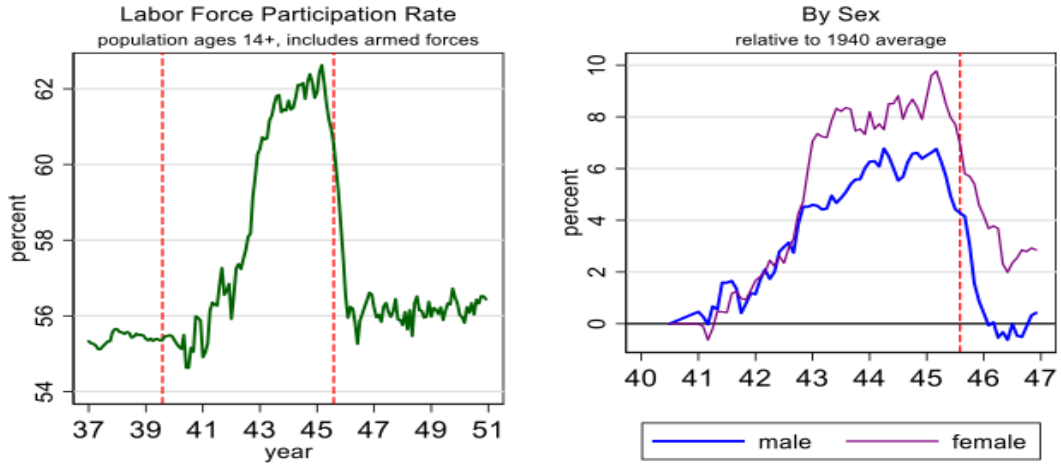
[2]See Blanchard, Domash and Summers (2022) and Figura and Waller (2022) on this debate.

Figure 2: Monthly Unemployment Rate and Vacancy Rate



Note: The blue line on the left panel adds emergency workers to the official unemployment rate given by the green line.

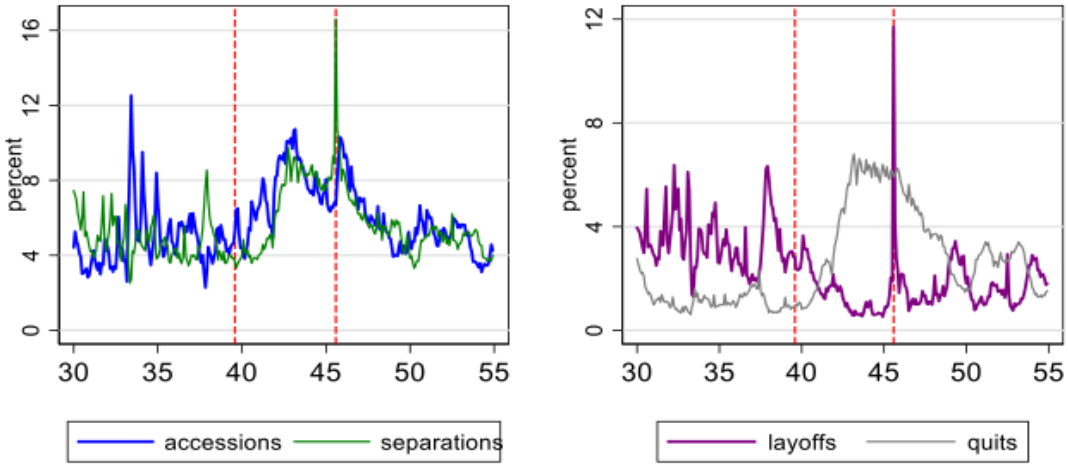
Figure 3: Labor Force Participation Rates



extensive margins of the labor supply decision played important roles in driving the labor market during this period. Importantly, the behavior of labor force participation has also been at the center of attention among policymakers and researchers in the post-COVID period.

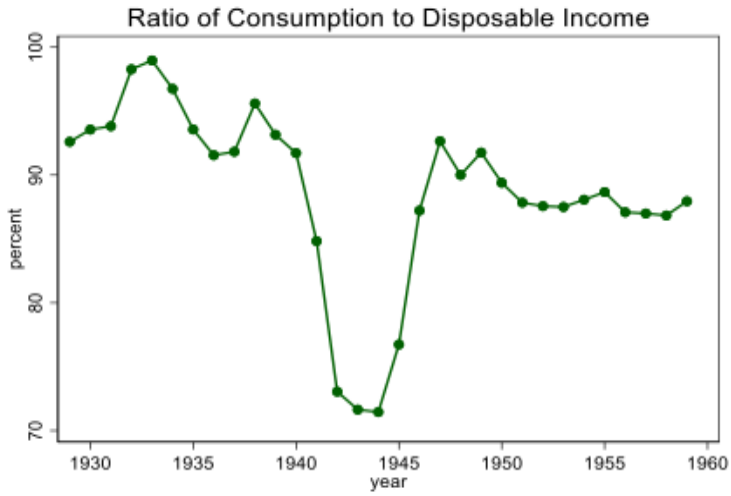
Figure 4 shows turnover rates in manufacturing. Gross flows rose significantly during the war, with both accession and separation rates rising to unprecedented levels. They fell only gradually at the end of the war. The end of the war in August 1945 resulted in a dramatic spike in the layoff rate. During the war, the quit rate increased dramatically and then fell

Figure 4: Manufacturing Labor Turnover



gradually but substantially after the war.

Figure 5: The Behavior of Consumption During the 1940s



The traditional story for the quick recovery of the economy after the war is that the lifting of price controls and rationing unleashed the U.S. consumer demand that had been pent up by WWII. However, Figure 5 shows that the story might be more nuanced. Annual NIPA data shows that the ratio of consumption to disposable income certainly rose relative to the war years but did not exceed its pre-war level. This suggests the aggregate demand story may be more complicated than suggested by the traditional explanation for the fast recovery of the U.S. economy.

III. Data Used

Our analysis uses a variety of data sources to uncover the factors behind the small rise in the unemployment rate. The main data source is a new longitudinal version of the Palmer data. However, because these data are not nationally representative, we augment our analysis with other data sources to paint a more complete picture.

A. The Palmer Data

In January and February 1951, Gladys Palmer of the University of Pennsylvania, in conjunction with the Census Bureau, conducted a survey of individuals in six cities: Philadelphia, New Haven, St. Paul, Chicago, San Francisco and Los Angeles. Limited information was gathered for all members of each sample household. A second interview gathered additional demographic data as well as retrospective work histories for the over 13,000 individuals who were ages 25 and over and who had worked at least one month in 1950.

A number of economists and sociologists analyzed the data in the 1950s and 1970s but it was forgotten until Claudia Goldin rediscovered some of the original records and arranged for them to be archived. Goldin (1991) digitized and analyzed some of the information on women from the front of the transcription cards and Collins (2000) did the same for many of the men. The front-of-the-card information they used includes background demographics, detail about current, first, and longest employment, as well as snapshots of a couple points in time during the 1940s. The back-of-card data, however, contains spells that detail the entire labor market history for each individual, at least from 1940 and often before. Each spell contains data on the start date (month and year), end date (month and year), and reason for leaving that spell. Employed spells provide the 3-digit occupation and industry codes, employer name, job title, and employment location (city and state). Non-employed spells specify the activity, e.g., looking for work, keeping house, retired, etc. Of the 13,555 individuals interviewed for the Palmer sample, we have front-of-card information for 12,341 and back-of-card information for 7,207. Using these spell data, we created a consistent monthly panel on labor market status, occupational standing, and geographic mobility from January 1940 to January 1951 period.

B. Supplemental Government Data

A worry about the Palmer data is its lack of representativeness of the entire population, due both to its focus on just six cities and its selection for obtaining worker histories, i.e., those histories were gathered only for individuals who worked at least a month in 1950. This latter selection makes it challenging to use the data to analyze the outcomes for women. To determine how important this selection is, we compare our data to a variety of other sources and we use those sources to augment our analysis. For example, we compare our data to the 1940 and 1950 Censuses. We also use two types of data collected by the U.S. government during the 1940s and early 1950s. The first are the numerous special surveys conducted on the outcomes of defense plant workers after the end of the war, the experiences of veterans, and the experiences of women. The second are the government's regular surveys of the time,

such as the Current Population Reports (CPR), which contain rich labor market data for individuals.

In addition, we use detailed industry data on hiring, layoffs, quits for manufacturing, as well as sectoral employment data and vacancy rates for the overall economy. With all these data to augment the Palmer data, we can construct a more complete picture of the state of the labor market.

IV. Analysis

Using the data discussed in the last section, we track what happened to individuals at the end of WWII. Using these rich data, we are able to quantify the various factors that might help explain the rapid reallocation of labor. In particular, we seek to provide answers to the following questions.

- *To what extent can the withdrawal of women from the labor force explain the small rise in unemployment?*

It is well-known that the large increase in female labor force participation during the war was reversed in part at the end of the war. We document the extent of this withdrawal and shed light on the extent to which women were "crowded out" of the labor force versus enticed out by non-market alternatives (e.g. home production). Our digitized data include detailed codes for reasons for leaving the previous job for the entire work history during the 1940s, allowing us to address this question directly. Since our longitudinal data can only take us so far in this question because of a sample selection issue that particularly affects women, we use rich auxiliary data from government surveys conducted in the early 1950s that asked women about WWII work experience and that don't suffer from selection effects.

- *How important was the GI bill and time spent in school in reducing unemployment?*

The GI bill offered subsidized education to returning veterans. If a number of veterans went to school rather than entering the labor market right after the war, then this might explain why the unemployment rate did not rise more. We combine information from our longitudinal data and other government sources to measure the impact of the GI bill for keeping individuals out of the labor force. For example, both our data and that of a government survey of veterans find that 6 percent of veterans were in school in spring 1946.

- *How important was recall employment for the high job finding rates at the end of the war?*

Fujita and Moscarini (2017) show the importance of recall employment for quick labor market transitions. Thus, a key question is whether recall employment might have been important for keeping the unemployment rate low. Government regulations required employers to give preference to returning veterans that had been employed by them before the war. Our monthly longitudinal data allow us to track workers between labor market spells and

employers, and also gives a reason that the individual left each spell. For example, our data show that 35 percent of veterans who went directly from employment into the armed forces returned to their original employer after the war.

- *How important were government programs in helping labor market transitions?*

The U.S. government was worried that unemployment rates would return to their Great Depression levels after the war and thus set up various bureaus to help returning veterans, etc. We will survey the reports of that time period to determine whether these programs played a role in keeping the unemployment rates low.

- *Did the spike in the inflation rate after the war help keep the unemployment rate from rising, counteracting downward nominal wage rigidity, and allow for a more efficient reallocation of workers?*

In the year after the removal of the wartime price controls, prices rose by 20 percent (as measured by the GDP deflator). We hypothesis that this spike in inflation could have made the sectoral reallocation of works more efficient. Chodorow-Reich and Wieland's 2020 analysis of post-1980 local labor markets found that sectoral shifts only raised unemployment in a local labor market if they occur during a national recession, but not during a national expansion. They explained this asymmetry using a model of search-and-matching frictions along with downward nominal wage rigidity. In the model, downward nominal wage rigidity impeded the efficient reallocation of workers. Inflation at the end of the war may have loosened the downward nominal wage rigidity constraint, so worker reallocation may have been more efficient.

V. Summary

The proposed research seeks to shed light on the unique features of the labor market at the end of World War II that allowed for such a rapid reallocation of labor. A better understanding of the workings of the labor market during that period is useful not only for economic history, but also for drawing lessons that can shed light on the workings of modern labor markets. In addition, those lessons can help us improve our macro and labor market models.

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