Economic Effects of the Unemployment Insurance Benefit

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The U.S. labor market has remained weak in recent years, even though the overall economy itself has started to grow again after the deep recession. For example, in the fourth quarter of 2009, the average unemployment rate was at a double-digit level, a level we have not seen since the early 1980s, even though real GDP grew by more than 5 percent. One of the main policy reactions to painful developments in the labor market has been the expansion of unemployment insurance.

The unemployment insurance (UI) system constitutes one of the major components of the social security programs in the U.S.[1] It provides income (and thus consumption) protection for those who have lost their jobs involuntarily. During "normal" times, unemployment insurance benefits are provided through the regular unemployment compensation (UC) program, which is funded and administered at the state level. Regular benefits, which are paid weekly, replace 50 to 80 percent of pre-unemployment earnings and last 26 weeks in the majority of states.[2] During economic downturns, however, the federal government often provides additional support by extending UI benefits. Especially in the last few years, the U.S. government has greatly extended the duration of benefits as a means to combat the surmounting joblessness. As of the summer of 2009, unemployed workers who reside in states with a relatively high unemployment rate are entitled to receive UI

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[1] The original framework of the unemployment compensation system is contained in the Social Security Act, which was signed into law by President Franklin Roosevelt in 1935.

[2] The benefit level is also subject to a cap. The weekly maximum ranges from $200 to $600 across states. Because of the cap, the average replacement ratio is roughly 50 percent.

benefits up to 99 weeks (26 weeks of regular benefits and 73 weeks of extended benefits).

Given the painful nature of job losses, the merits of UI benefits are often taken for granted in public policy discussions. In this article, I will review some of the academic literature on the economic effects of UI benefits. This is useful for evaluating the expansions of the UI system in recent years.

First, UI can improve people's well-being, because it helps them avoid large drops in consumption in the face of job losses: The government provides an insurance against job loss. There is, however, a concern that it might produce an adverse effect on the incentive to look for a job. That is, UI benefits could cause job seekers to put less effort into searching for a job, consequently raising the unemployment rate. Some researchers have argued that this incentive effect is large, given the observation that the rate of exit from unemployment at the time of expiration of UI benefits increases noticeably. An important issue here is that the increase in the exit rate from unemployment can be driven by the fact that the worker is simply dropping out of the labor force, thereby losing eligibility for UI benefits. This phenomenon can complicate the interpretation of the incentive effect. Other researchers also point out the possibility that UI benefits enhance a firm's incentive to create more jobs. Below, I will lay out these arguments in detail.

Before getting into the detailed discussion, let's first briefly review recent developments regarding UI benefits and the U.S. labor market.

UNEMPLOYMENT INSURANCE DURING THE GREAT RECESSION

As mentioned above, regular unemployment insurance benefits typically last 26 weeks. However, the federal government often enacts extensions of UI benefits during economic downturns. There are two types of federal emergency programs. The first is called the extended benefit (EB) program, which is permanently authorized, meaning that the extension is triggered automatically whenever the state unemployment rate reaches a certain level. It provides additional weeks of unemployment benefits up to a maximum of either 13 weeks or 20 weeks, depending on the state.

The second type is a federal program that Congress enacts temporarily during downturns. The latest program of this type, the Emergency Unemployment Compensation program (EUC08), represents the eighth time Congress has created such a program.[3] EUC08 was signed into law in June 2008. Initially, the maximum entitlement period under this program was 13 weeks, but it has been extended several times since then. As of April 2010, EUC08 provides extended benefits for up to 53 weeks. This means that, combining the regular benefit and the two emergency programs, an unemployed worker is entitled to UI benefits for up to 99 weeks. (See *The Chronology of the Emergency Unemployment Compensation Program (EUC08)* for details.).

Historically speaking, the scale of the extensions during the current downturn is very large compared with the extensions enacted in the past. During most of the post-WWII recessions, Congress has implemented federal emergency programs, but these programs typically provided benefits for a total of around 60 weeks.[4] Given past experience, the duration of UI eligibility in the most recent downturn (that is, a total of 99 weeks) is quite generous.

Figure 1 plots the number of UI recipients since December 2007, the start of the Great Recession. This includes those who are covered under the regular state programs as well as those covered by the federal extension programs. As can be seen from the figure, the number of claimants has increased steadily since the start of the recession. One noticeable trend is the increase in the number of those covered under the emergency programs — it has more than doubled since the beginning of 2009. Because workers can be covered by the emergency programs only after state UI benefits are exhausted, the increase in the number of federal UI recipients implies that long-term unemployment is increasing.

Figure 2 confirms this trend from a separate data series based on the Current Population Survey. The figure presents the total number of unemployed and those

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[3] Congress created federal programs in 1958, 1961, 1971, 1974, 1982, 1991, 2002, and 2008. See the article by Julie Whittaker for details of these programs.
[4] Again, see the article by Julie Whittaker for details of the previous programs.

who are unemployed for 27 weeks or longer. From this figure, we can see that the proportion of long-term unemployment is rising rapidly.[5]

These empirical observations underscore the importance of reconsidering the effects of UI benefits on current labor market conditions. Now let's move on to the economics of UI benefits.

A SIMPLE SEARCH MODEL

An economic model called a "search model," pioneered by John McCall, is often used to analyze the decisions facing a job seeker. In this model, the worker receives occasional random job offers. How often the worker receives an offer depends on how hard he looks for a job. Once the offer has arrived, the worker decides whether to accept or reject it.

One of the key implications of this model is that higher UI benefits lead to a longer duration of job search. The reason is that the worker puts less effort into searching for a job, because higher benefits mean that he has less to lose from being unemployed. Furthermore, he may hold out for a higher-wage job before accepting an offer, since higher benefits lower the cost of being out of work. This means that the arrival of an acceptable offer becomes less likely (that is, the chance that the worker rejects the job offer is higher), and thus, the waiting time in the unemployment pool is longer. In this simple model, the reduction of the search effort caused by the increased benefit level is often called the moral hazard effect.[6]

An important thing to remember here is that this simple model is designed to focus on the incentives to search for a job, omitting from consideration many issues that are relevant in reality. In particular, workers who have no savings at the time of job loss may experience a large drop in consumption. Moreover, if the economy is not producing many jobs, it will be difficult to exit unemployment by becoming employed rather than dropping out of the labor force. In these cases, UI benefits can

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[5] Comparing the total number of benefit recipients and unemployment allows us to see that a substantial number of unemployed workers do not receive UI benefits. The main reason is that some workers are not qualified to receive the benefit: To be eligible, workers must have at least 20 weeks of full-time insured employment or the equivalent amount of work at insured wages during the previous 12-month period.

[6] In more elaborate models, it can be misleading to label the decline in the effort level as moral hazard. I will discuss those cases below.

improve the economy's welfare, offsetting the negative incentive effect. I will come back to these issues later. But for now, let's take this simple model as a useful benchmark.

EMPIRICAL STUDIES FOR TESTING THE MORAL HAZARD EFFECT

Is there empirical evidence that moral hazard is a serious problem of UI benefits? A seminal study by Robert Moffitt tests the implication of the search model. He looks at how the unemployment exit rate (the rate at which a worker exits from the unemployment pool) changes right before UI benefits are exhausted, exploiting variations of maximum entitlement periods across states and across individuals within states. For example, imagine that two workers who reside in two different states have the same characteristics (for example, gender or education) but have different unemployment exit rates. We can associate the difference in the exit rates with the differences in the generosity of UI benefits.[7] Moffitt uses a high-quality data set collected by state UI offices, which covers the period between 1978 through the first quarter of 1983. Note that this is another period in which federally funded extended benefits were available. More specifically, Congress enacted the Federal Supplementary Compensation (FSC) program in the fall of 1982, which, combined with the regular benefit and the benefit under the EB program, provided UI benefits for more than 60 weeks.[8]

The key finding is that there is a large spike in the exit rate from unemployment at the time UI benefits expire. Using a statistical technique called a regression analysis, Moffitt translates this large spike as indicating that, on average, a one-week extension of benefits leads to an increase in the duration of unemployment of 0.15 week. Using the same administrative data set, studies by Bruce Meyer and Lawrence Katz and Meyer extend Moffitt's work and find a similar spike in the exit rate at the time benefits are exhausted.

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[7] Similarly, there can be differences in the generosity of the benefits even across workers within the same state.

[8] Since the FSC was enacted late in Moffitt's data set, his analysis focuses on the workers who were receiving the benefits for at most 39 weeks.

Figure 3 presents the median duration of unemployment in recent years. It increased dramatically from the pre-recession level of around eight weeks to around 20 weeks at the end of 2009. This has occurred in tandem with the increases in the number of benefit claimants (see Figure 1). There is no doubt that the recession was the cause of the longer duration of unemployment. However, the literature suggests that at least part of the increase in the duration was actually *caused by* the extensions of UI benefits. Estimating "how much" is beyond the scope of this article, but *The Effect of the Extension of UI Benefits on the Unemployment Rate: An Illustrative Example* presents an example in which I calculate the effect of doubling the maximum benefit on the observed unemployment rate using Moffitt's result. The exact magnitude of the effect aside, it seems plausible to say that the extensions played at least *some* part in raising the duration of unemployment and thus the unemployment rate.

While this calculation as an accounting exercise is useful for inferring the effect of the extended benefits on the unemployment rate, there is good reason to be somewhat careful about its interpretation. In particular, should it really be interpreted as moral hazard? In other words, the presence of a spike in the exit rate is consistent with the moral hazard story, but there may be other stories consistent with the empirical observation. One alternative story is based on the so-called "reporting effect" of UI.

REPORTING EFFECT OF UI

To understand the reporting effect, note first that the earlier literature looks at the effects of UI on the "exit rate." However, "exiting from unemployment" does not necessarily mean finding a job. In other words, it is possible that workers are simply dropping out of the labor force when their benefits expire. Because the data set used in the aforementioned studies is based on UI records, it does not tell the status of workers, that is, whether the worker found a job or simply dropped out of the labor force after exiting from the UI system.

Is it realistic to think that workers are actually dropping out of the labor force once their benefits are exhausted? To appreciate this possibility, consider the following example: A worker initially tried very hard to find a job, but after a series of unsuccessful job searches, he became very discouraged. However, to be qualified for UI benefits, he is required to be "unemployed." This means that he needs to fill out claim forms periodically and may even need to report to the local UI claims office to show that he is "actively looking for a job." Once the benefit is exhausted, these requirements cease to exist, and consequently, he officially exits from the unemployment pool. This appears to be a plausible possibility. Note that the reporting effect story involves little change in a worker's decision around the expiration date, yet it induces a large change in the unemployment exit rate. In this sense, it is misleading to infer the extent of moral hazard based on the size of the spike in the exit rate.[9] One simple way to empirically distinguish them is to examine whether the spike in the unemployment exit rate is associated with re-employment or dropping out of the labor force. This is exactly what a recent paper by David Card, Raj Chetty, and Andrea Weber did.

These authors analyzed this issue using a rich data set from Austria. According to the authors, the UI system in Austria is similar to the one in the U.S., although there are some institutional differences. The data set is rich enough so that they can examine the effect of UI benefits on job finding (not just exit from unemployment). When they focus on the unemployment exit rate, they find a very large spike at the time of benefit exhaustion. In their sample, the jump in the exit rate amounts to 200 percent and is of similar magnitude to the one reported by Moffitt. However, when they consider only those who are re-employed, the spike almost disappears. In other words, there is little evidence that people exit benefits by finding a new job. More specifically, Card and co-authors find a modest increase, roughly 20 percent, in the

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[9] Theoretically distinguishing the two stories requires extending the simple search model discussed above along several dimensions. For example, the simple search model does not incorporate the feature that workers' skills can deteriorate while they are unemployed. In the model with such an extended feature, workers would reduce their search effort over time as the value of work relative to being unemployed declines as their skills deteriorate. In such a model, the increase in the re-employment rate right before the expiration date can be much smaller than that implied in the simpler search model.

re-employment rate. They further point out that this modest increase in the re-employment rate implies that less than 1 percent of unemployment spells have an end date that is manipulated to coincide with the expiration of UI benefits.

Several papers look at the effects on re-employment rates using U.S. data. A paper by Bruce Fallick, using data from the Displaced Worker Survey (DWS), finds that there is no significant difference in the job-finding rate after benefits have been exhausted. On the contrary, Katz and Meyer argue that there is a significant spike in the re-employment rate associated with the exhaustion of benefits, supporting the moral hazard story.[10]

While these data sets derived from surveys include information on workers' labor market status (employed, unemployed, and out of the labor force), thus allowing the researchers to distinguish between the re-employment rate and the exit rate, the information in these surveys is necessarily less accurate, compared with the data that come from UI offices. For example, the worker-level information regarding his or her maximum entitlement period and the actual benefit-collection period can be subject to serious measurement errors.[11]

Given the limitations of these survey data sets (DWS and PSID), we can only agree with Card, Chetty, and Weber that "the size of the spike in re-employment rates at exhaustion in the current U.S. labor market remains an open question." This is unfortunate, but the argument made by Card, Chetty, and Weber at least gives us a reason to keep the reporting effect in mind when thinking about the positive relationship between unemployment duration and UI benefits in recent years.

LIQUIDITY EFFECT OF UI BENEFITS

A study by Jonathan Gruber and one by Raj Chetty provide another possible reason (other than the moral hazard story) for the positive relationship between higher UI benefits and the duration of unemployment. That is, UI benefits work as a

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[10] The study by Katz and Meyer (as mentioned in the previous section) mainly focuses on unemployment exit rates, but they supplement their analyses by attempting to distinguish between re-employment and exit. They use the Panel Study of Income Dynamics (PSID) for this purpose.

[11] Another issue is that these survey data contain relatively few observations. For example, in the Katz and Mayer study, which finds a sharp spike in re-employment, there are only 26 observations at the spike.

mechanism to relax the liquidity constraint of unemployed workers. To understand the idea, note first that in the simple search model, the wealth level of the worker has no implications for his or her search behavior. More to the point, it does not suppose a situation in which an unemployed worker accepts a low-paying job simply because he needs to put food on the table. Is the underlying assumption of the standard search model realistic? Probably not. Actually, there is ample empirical evidence that many unemployed individuals do not have enough savings, and thus, their consumption is quite sensitive to cash on hand (see, for example, the study by Gruber).[12] When workers are subject to the liquidity constraint, the wealth level does have an effect on search behavior. In particular, UI benefits increase cash on hand held by unemployed workers to support their consumption. Higher benefits then reduce the pressure to take a low-paying job, leading to the longer duration of unemployment. At least for these workers, UI benefits work literally as insurance against job loss.

Note that, as opposed to the moral hazard effect, the liquidity effect highlights the aspect of UI policy beneficial to the overall economy. The liquidity constraint limits the worker's ability to take an "optimal" action, such as declining what may be a poor job match, an action he might have taken if he had enough savings. Relaxing the liquidity constraint through UI is then desirable from a policy perspective.

Chetty empirically shows that the liquidity effect is sizable. Using U.S. labor market data from the Survey of Income and Program Participation (SIPP), he finds that higher UI benefits are associated with much lower job-finding rates for workers with little wealth, while they have no noticeable impact on job-finding rates for workers with greater wealth. He then estimates that 60 percent of the increase in the duration of unemployment from higher UI benefits can be attributed to the liquidity effect. He further develops a simple method of calculating the economy's welfare gains from UI. Using this method, he concludes that a UI system in which benefits replace 50 percent of pre-unemployment earnings for six months is

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[12] According to Chetty's article, nearly half of job losers in the United States report zero liquid wealth at the time of job loss.

optimal. Note that this "optimal" system is close to the current U.S. system during normal times. Presumably, a more generous benefit structure is desirable during economic downturns,[13] although answering the question of how much more generous the benefits should be during recessions requires further research.

JOB-CREATION EFFECT

The discussion so far has focused on workers' job-search behavior. Daron Acemoglu and Robert Shimer point out another welfare-improving effect of UI, one that works through the feedback effect on job creation. The authors develop a model in which there are two types of jobs: high-productivity and low-productivity. The high-productivity jobs are harder to find, but they pay a higher wage. Similarly, low-productivity jobs are easier to find, but they pay a lower wage.

To understand how Acemoglu and Shimer's model works, think of a job acceptance decision of a worker who has been offered a low-productivity job. Note that the trade-off is whether to accept this low-paying offer or to bet on getting an offer of a high-productivity job in the future. The latter choice involves giving up the income from the low-productivity job. Furthermore, if the worker rejects the offer, he also faces the risk of not getting an offer at all in the near future. This acceptance decision is based on balancing between the two competing effects. In this situation, the higher benefit level shifts the balance toward looking for a high-productivity job, turning down offers of low-productivity jobs.

When the benefit level is raised, firms have a higher incentive to create high-productivity jobs, knowing that workers are more likely to turn down low-paying job offers (the job-creation effect). Through numerical exercises using this model, Acemoglu and Shimer show that higher UI benefits raise the unemployment rate mainly through the moral hazard effect, but aggregate output and welfare increase as a result of the positive feedback between workers' willingness to look for high-productivity jobs and the creation of high-productivity jobs.[14]

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[13] For example, more workers may be liquidity constrained during economic downturns.
[14] Acemoglu and Shimer's model does not feature the liquidity effect, and thus the higher benefit causes workers to devote less effort to job search, raising the unemployment rate. However, its negative effect on output and welfare is more than offset by the positive job-creation effect.

They do not assess the empirical significance of this job-creation effect. We thus do not know how significant the job-creation effect is in reality. However, it is possible to associate the model's implications with a real-world situation in which more generous UI benefits give workers some time to look for a high-paying job, which in turn has some impact on firms' decisions to create such jobs.

SUMMARY AND MISSING PIECE

In this article, I have reviewed some of the key findings on the economic effects of UI benefits. It has sometimes been argued that extending UI benefits causes adverse incentives for searching for a job. However, reporting effects complicate the interpretation that moral hazard effects predominantly account for the spike in the exit rate from unemployment. Furthermore, the arguments based on the liquidity and job-creation effects justify the positive relationship between the level of UI benefits and the duration of unemployment as socially desirable.

The expansions of UI benefits during the most recent recession may be supported by the latter argument at least *qualitatively*. Unfortunately, the profession has not accumulated enough research that tells us how large the extensions should be during economic downturns.

Also, one important issue that has not been studied very much in the literature on UI is the interaction between the benefit level and human capital or skill depreciation. There is a long-standing empirical literature on earnings losses; those who are out of work for a long time tend to lose human capital and thus earn much less than they did pre-unemployment, even if one is lucky enough to find a job. Longer eligibility of UI may exacerbate this effect. The academic research examining this interaction would also be valuable for policymakers and economists.

Box 1: The Chronology of the Emergency Unemployment Compensation Program (EUC08)

As mentioned in the main text, the EUC08 was originally signed into law in June 2008 but has been expanded several times since then. Below is the chronology of EUC08.

June 30, 2008. The EUC08 program was introduced. The maximum duration of the extended benefit under this program was 13 weeks. It was set to expire on March 28, 2009. The expiration date is when the program stops accepting new claimants. The existing claimants can continue receiving benefits until the entitlement period is over.

November 21, 2008. The maximum entitlement period was extended from 13 weeks to 20 weeks. Tier II of benefits was introduced, providing up to an additional 13 weeks of benefits for those who worked in states with a total unemployment rate of at least 6 percent. It was set to expire on March 28, 2009. After this date, the program would no longer accept new claimants and existing claimants in Tier I cannot move to Tier II.

February 17, 2009. As part of the American Economic Recovery and Reinvestment Act, the expiration date of EUC08 was extended to December 26, 2009. It also included a provision to pay an additional $25 weekly benefit for those receiving benefits under the EUC08.

November 6, 2009. The duration of the EUC08 program was substantially expanded. Tier III and Tier IV were introduced. The Tier I benefit continues to be up to 20 weeks. The Tier II benefit was expanded to 14 weeks from 13 weeks and no longer depended on a state's unemployment rate. The new Tier III benefit provided up to 13 weeks to those workers in states with an average unemployment rate of 6 percent or higher. The new Tier IV benefit may be provided up to an additional six weeks if the state unemployment rate is at least 8.5 percent. The expiration date stayed the same as before (December 26, 2009). Again, after this date, the program would no longer accept new claimants, and existing claimants in the lower tier cannot move to the next

tier.

December 19, 2009. The expiration date was extended to February 28, 2010.

March 2, 2010. The expiration date was extended to April 5, 2010.

April 15, 2010. The expiration date was extended to June 2, 2010.

July 22, 2010. The expiration date was extended to November 30, 2010.

Box 2: The Effect of the Extension of UI Benefits on the Unemployment Rate: An Illustrative Example

In his study, Robert Moffitt estimates the effect of the extension of UI benefits on the duration of unemployment. He estimates that a one-week extension of benefits results in an increase in the duration of unemployment of 0.15 week, on average. Here, I take this estimate as given and calculate the effect on the unemployment rate when the benefit entitlement period is doubled from 26 weeks to 52 weeks. As mentioned in the main text and in *The Chronology of EUC08,* the maximum entitlement period in the current downturn is 99 weeks. However, a worker may not have known at the time he lost his job that the entitlement period was 99 weeks because the extension announcement may have come after the initial job loss. Furthermore, as explained in *The Chronology of the Emergency Unemployment Compensation Program (EUC08)*, after the expiration date, workers can continue to be covered under the UI program only up to the entitlement period of that tier. Given these considerations, I only look at a simple case of doubling the entitlement period.

First, assume that the rate at which the average worker finds a job (that is, the job-finding rate) is 30 percent per month, which implies that the duration of unemployment of the average worker is 3.3 months (approximately 13 weeks). These numbers are roughly consistent with empirical observations. Also assume that employed workers are flowing into the unemployment pool at a rate of 2 percent per month. In the "steady state," where flows into and out of unemployment are equal to each other, the job-finding rate of 30 percent per month and the job-loss rate of 2 percent imply an unemployment rate of 6.25 percent.

Now assume that the maximum entitlement period is increased from 26 weeks to 52 weeks. Moffitt's estimate implies that the duration of unemployment goes up by 3.9 weeks. This translates into a decline in the job-finding rate from 30 percent per month to approximately 24 percent. I further assume that the job-loss rate is unaffected by the extension. The steady-state unemployment rate with the extended benefit entitlement period then becomes 7.7 percent.

REFERENCES

Acemoglu, Daron, and Robert Shimer. "Productivity Gains from Unemployment Insurance," *European Economic Review*, 44:7 (2000), pp. 1195-1224.

Card, David, Raj Chetty, and Andrea Weber. "The Spike at Benefit Exhaustion: Leaving the Unemployment System or Starting a New Job?" *American Economic Review Papers and Proceedings*, 97 (2007), pp. 113-18.

Chetty, Raj. "Moral Hazard vs. Liquidity Constraint and Optimal Unemployment Insurance," *Journal of Political Economy*, 116:2 (2008), pp. 173-234.

Fallick, Bruce. "Unemployment Insurance and the Rate of Re-Employment of Displaced Workers," *Review of Economics and Statistics*, 73 (1991), pp. 228-35.

Gruber, Jonathan. "The Consumption Smoothing Benefits of Unemployment Insurance." *American Economic Review*, 87:1 (1997), pp. 192-205.

Katz, Lawrence, and Bruce Meyer. "The Impact of the Potential Duration of Unemployment Benefits on the Duration of Unemployment," *Journal of Public Economics*, 41 (1990), pp. 45-72.

McCall, John. "Economics of Information and Job Search," *Quarterly Journal of Economics*, 84:1 (1970), pp.113-26.
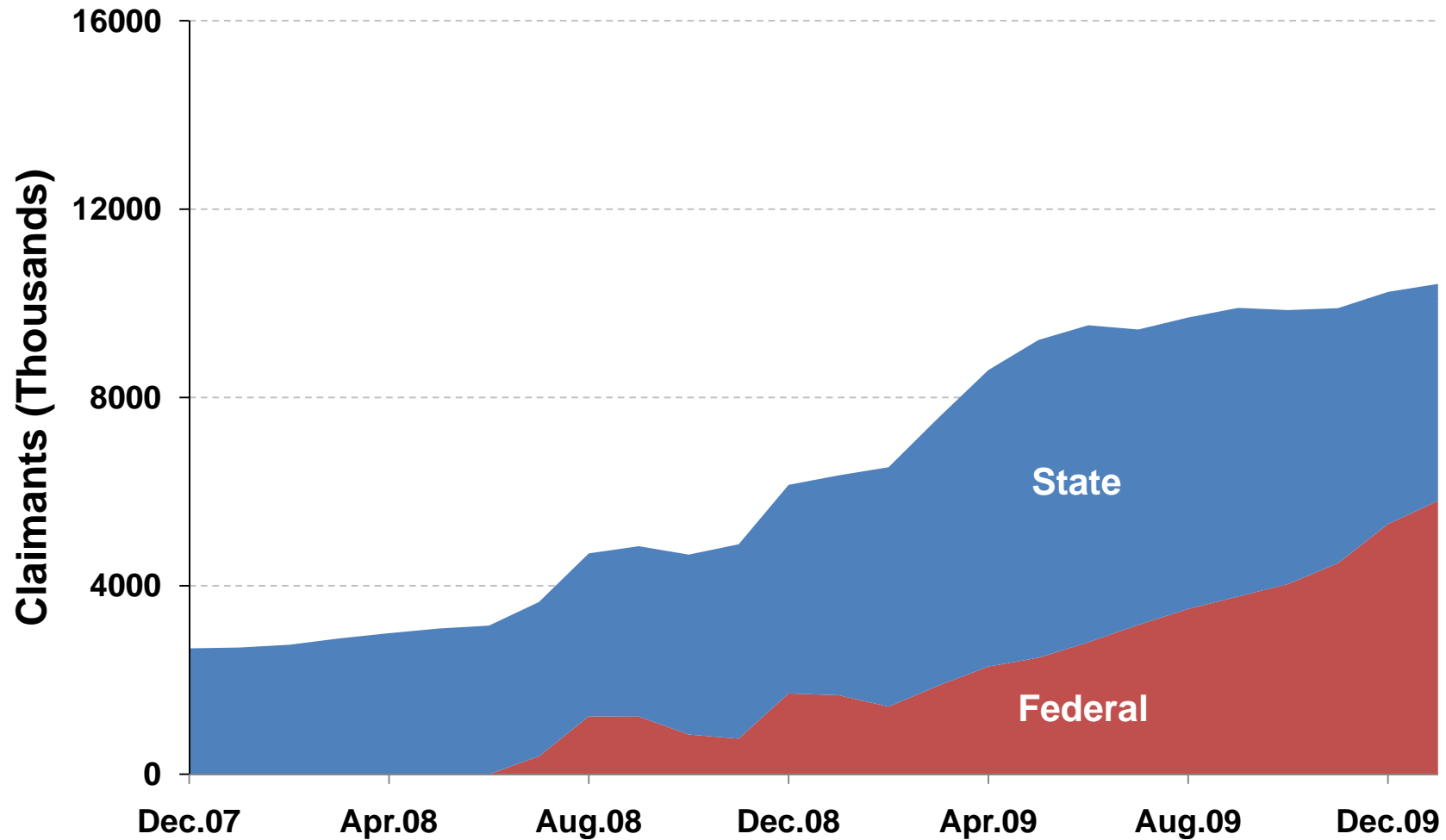
Meyer, Bruce. "Unemployment Insurance and Unemployment Spells," *Econometrica,* 58:4 (1990), pp. 757-82.

Moffitt, Robert. "Unemployment Insurance and the Distribution of Unemployment Spells," *Journal of Econometrics*, 28 (1985), pp. 85-101.

Whittaker, Julie. "Extending Unemployment Compensation Benefits During Recessions," Congressional Research Service Report RL34340 (2008).
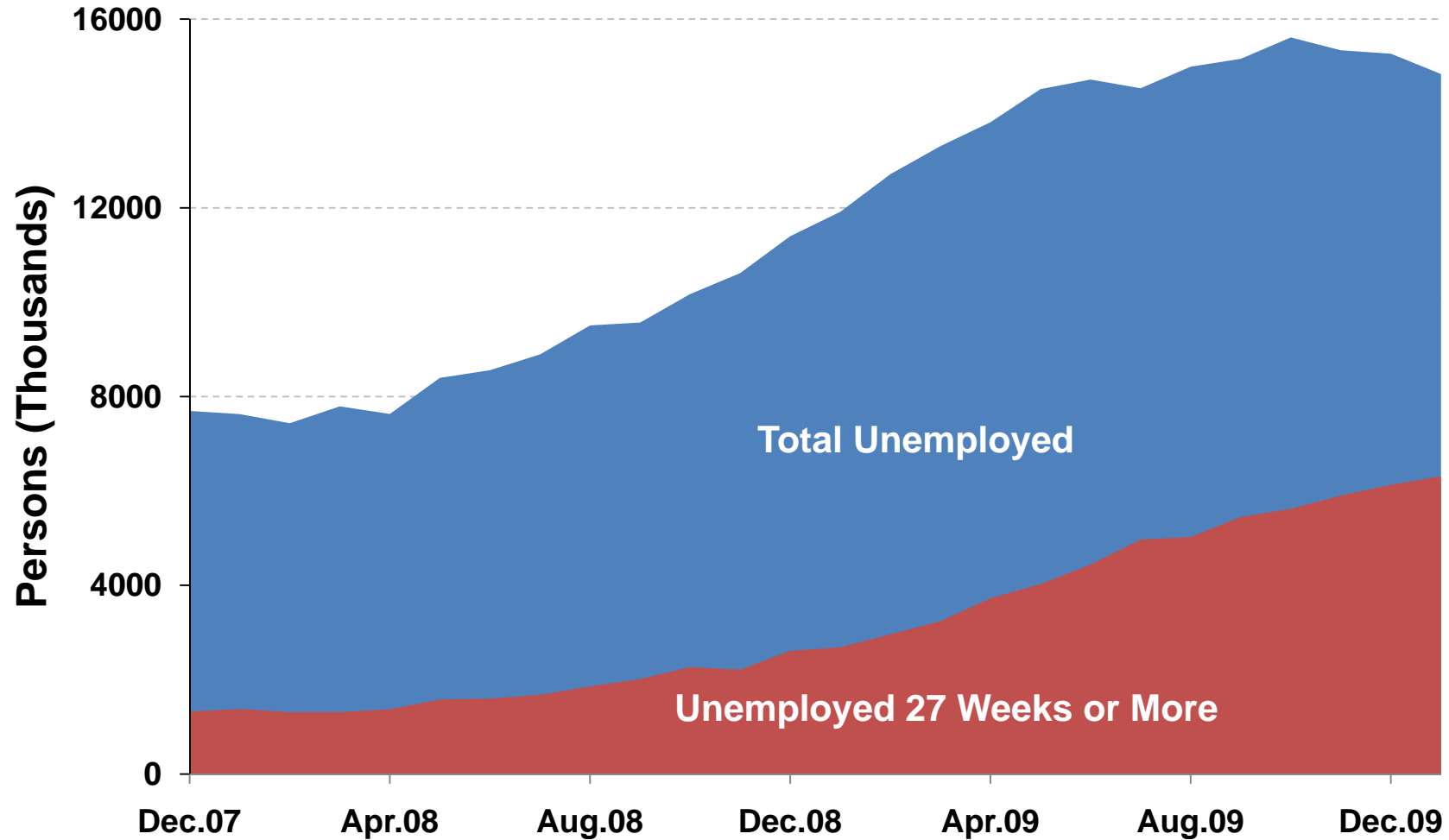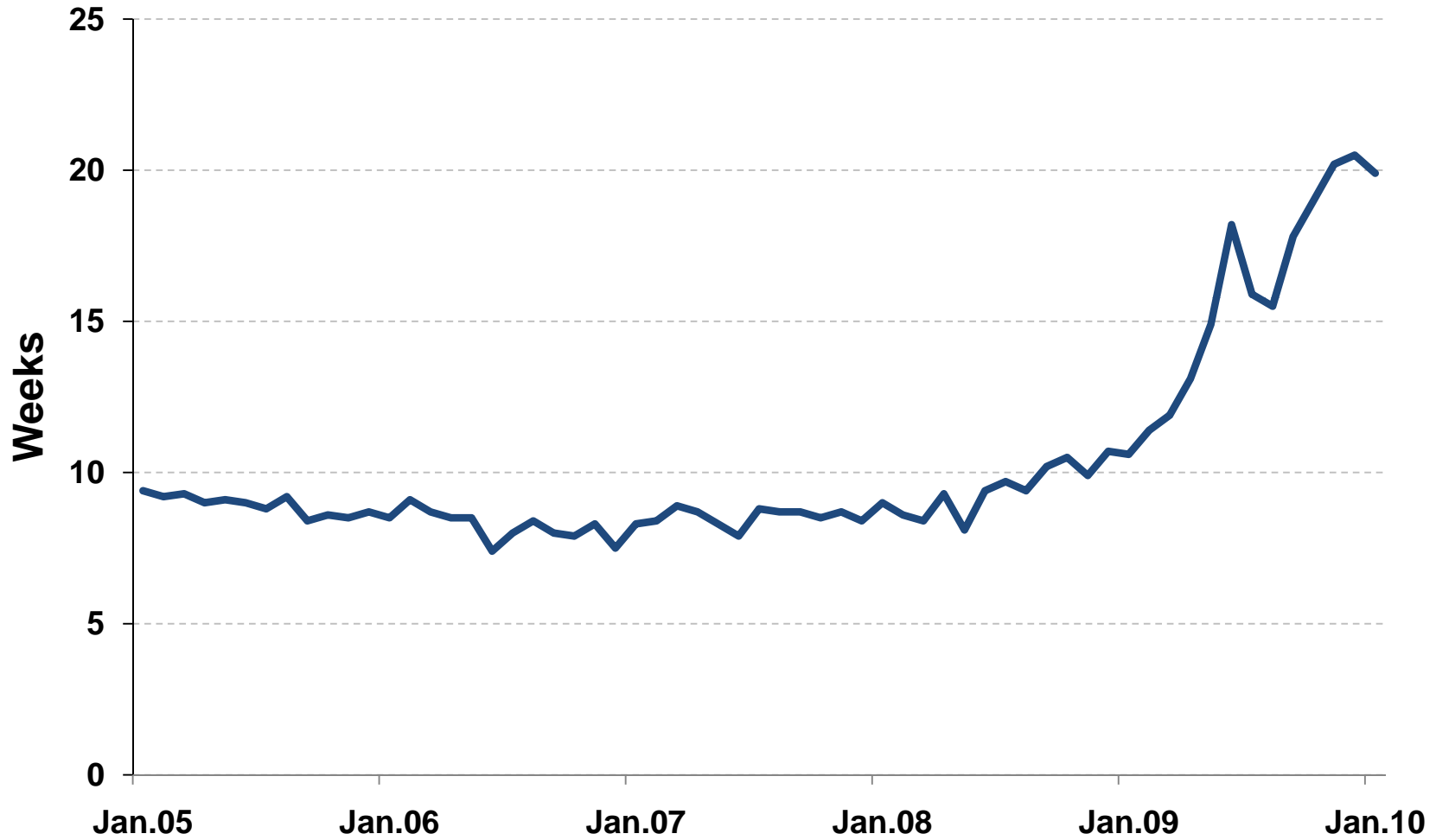
Figure1. Unemployment Insurance Claimants

Claimants (Thousands)

State

Federal

Dec.07　Apr.08　Aug.08　Dec.08　Apr.09　Aug.09　Dec.09

Source: Haver

Figure 2. Long-Term Unemployment

Persons (Thousands)

Total Unemployed

Unemployed 27 Weeks or More

16000

12000

8000

4000

0

Dec.07   Apr.08   Aug.08   Dec.08   Apr.09   Aug.09   Dec.09

Figure 3. Median Duration of Unemployment