

## ***The Changing Contours of Long-Term Unemployment: The Need for a More Radical Policy***

**Oren M. Levin-Waldman**

**Abstract:** Since the financial meltdown of 2007, unemployment has consistently been above 6.0 percent. On one level, long-term unemployment can be accounted for by structural changes. But, on another level, the problem of long-term unemployment is really no more complicated than the absence of effective demand. This study looks at the demographics of the long-term unemployed for the years 2007–2010, and compares them to the years 1991–1994 to see what changes have occurred specifically among the long-term unemployed. The data shows that, in terms of structural changes, the 1991–1994 and 2007–2010 periods were not much different. Rather, the nature of this recession resulted in an altered composition of the long-term unemployed. Because long-term unemployment in this recession is a function of a particularly deep recession, a new approach is needed. Based on the data, this study argues for a wage policy that would allow for people to increase their effective demand for goods and services.

**Keywords:** labor markets, long-term unemployment, structural change, unemployment, wage policy

**JEL Classification Codes:** J00, J01, J02, J10, J11, J18

The Great Recession of 2007 will go down in history as one of the deepest recessions that has plagued the nation. In addition to high unemployment, this recession has left the economy with severe long-term unemployment. By April 2009, the fraction of the unemployed who were unemployed for more than six months was 40 percent. During the early 1980s, by contrast, the share of the labor force out of work for more than 26 weeks was only 26 percent. The sharp increase that occurred during 2009 was principally due to changes in the labor force — mainly the aging of the population and the increased labor force attachment of women (Tasci and Burger 2012). But it was also due to weak labor demand. Long-term unemployment spells during the 1980s tended to be concentrated among factory and machine workers who made up 29

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percent of the labor force, but, by 2009, the long-term unemployed population was sectorally more diverse (Aaronson, Mazumber and Schechter 2010). Those experiencing the greatest employment changes were the ones without a high school diploma. Employment for those with some college fell slightly, while it actually increased somewhat for those with a bachelor's degree (Engemann and Wall 2010).

The last time the nation had to contend with the deep effects of long-term unemployment was between 1991 and 1994. The Great Recession may bear some resemblance to the recessions of 1991 and 2001, which were more structural, but it differs from those recessions that occurred between the Great Depression of the 1930s and 1980s, which were more cyclical. Most job losses since the 1991 recession have been permanent due to technological innovation, increases in trade, and lean staffing. Technological advances have allowed employers to replace people with machines and to outsource operations, and trade has allowed for production to occur outside the US. Yet, as much as this may be true, it is still the absence of demand that has served as a trigger (Afxentiou and Chandrasekar 2009). Despite the persistence of unemployment, labor productivity actually increased. But those increases have not been translated into higher wages for workers, or even new jobs.

On one level, long-term unemployment can be accounted for by structural changes. Jobs that used to pay middle class wages no longer exist, particularly in manufacturing. On another level, the problem might appear to be far simpler than one recognizes. Unemployment is really the product of the absence of effective demand. In this paper, using data from the Current Population Survey (U.S. Department of Commerce 1992–1995 and 2008–2011), I look at the demographics of long-term unemployed for the years from 2007 to 2010 and compare them to the years from 1991 to 1994 to see what changes have occurred among the long-term unemployed, and what these changes are telling us about the nature of the recession. That is, are there any identifiable structural elements to the problem of long-term unemployment, or is it simply a matter of absence of aggregate demand?

### ***Causes of Long-Term Unemployment***

Attempts to explain high unemployment have centered around two alternative hypotheses. The first is the inadequate-aggregate-demand hypothesis, which maintains that unemployment increases when the rate of growth of the final demand for goods and services fails to keep pace with the rate of growth in supply that is made possible by productivity increases and in the stock of productive resources. The second is the rise-in-structural-unemployment hypothesis, which holds that unemployment increases despite the presence of a generally adequate demand and a totally sufficient number of job possibilities. That is, because of the changing structure of the economy, the demand for certain types of workers – mainly blue collar and goods producing workers – is less. A variant of the second hypothesis is that structural changes to the economy resulting in more long-term unemployment have only been hastened by the forces of globalization. The mobility of capital has allowed for manufacturing to occur in parts of the world where labor costs are only a fraction of U.S. labor costs. As

globalization has resulted in more skilled jobs disappearing, many of the jobs that remain have been at the two extremes of the economy: the high-skilled, high paying, and well-educated labor market at the top and the low-skilled, low paying, and poorly educated labor market at the bottom. Each of these hypotheses, however, leads to different policies. By the former hypothesis, fiscal monetary policy ought to be enough to reduce unemployment. But if the latter one, then government would need to do more than simply pump more money into the economy. It would need to pursue a more active set of policies and/or programs intended to achieve greater economic growth and development (Simler 1964).

Mainstream economics draws a sharp distinction between short and long-run unemployment. According to the conventional view, short-term unemployment is strongly influenced by monetary policy and other determinants of aggregate demand. In the long run, unemployment returns to a natural rate, which is determined by labor market frictions. But as Laurence Ball (1999) argues, monetary policy and other determinants of aggregate demand do actually have strong effects on both long and short-term unemployment. The conventional view then holds unemployment to be determined by institutions, such as labor unions, unemployment insurance, and firing restrictions. From the 1960s through the mid-1980s, unemployment trended upward throughout the OECD countries. When jobs are destroyed by recession, short-term unemployment is initially created, but if employment remains low then short-term unemployment becomes long-term. What is needed is an expansion of aggregate demand that would generate growth. Unemployed workers need to be attracted back into the labor market by a strong economy, in which it is clear that the rewards to working are greater than remaining unemployed.

A prevailing view in neoclassical economics is that unemployment is the result of wage rigidity and policy interventions, such as unemployment insurance (UI). Unemployment insurance is said to create a disincentive to search for work because it raises workers' reservation wages. Employees who lose their jobs are likely to find that the wages at their next jobs are lower than the wages at their last jobs, but each individual has a private reservation wage which is equal to his/her previous wage. For the individual who is unemployed and looking for a job, the lower cost of unemployment implies a higher reservation wage and, therefore, a longer joblessness period. Among those who are employed, the low potential cost of unemployment induces temporary layoffs in response to reductions in product demand. The more generous the UI, the greater the incentive there may be to look for work that is less than full time (Feldstein and Poterba 1984; Kuhn and Riddell 2010). Extension of unemployment insurance benefits past the usual 26 weeks only exacerbates the problem of long-term unemployment (Rothstein 2011; Tasci and Burger 2012). Recessions, in other words, are only made worse by the policy responses to them because they effectively distort incentives, and also because they might heighten uncertainty about the underlying economic environment (Ohanian 2010).

The fundamental problem with these explanations of long-term unemployment is that they put the onus of unemployment on the unemployed. Employers are absolved of any responsibility they may have in causing a shortfall in aggregate

demand by pursuing a low wage strategy. Bruce Kaufman (2012) rejects this position by responding to those who claimed that the Great Depression of the 1930s was made considerably worse by factors that resulted in rigid wage rates, increased labor costs, and otherwise interfered with flexible demand/supply. Traditional demand/supply theory suggests that lower wages promote prosperity by making it possible to have lower production costs and product prices, increased sales to domestic and foreign buyers, and greater satisfaction of consumer wants. John Maynard Keynes (in Kaufman 2012), in particular, argued that a firm's hiring decisions were based on workers' real wages, but workers would only be able to agree to cut their money wages. A cut in money wages might precipitate a fall in prices, but it would also leave real prices the same, if not higher. On one hand, lower wages would reduce the cost of production, thereby increasing employment. But, on the other hand, it would also reduce household income and spending, thereby leading to lower employment. Wage reductions during the Great Depression were only followed by another year and a half of deepening depression, which was the directly opposite predicted by the demand/supply theory. Although it is possible that New Deal policies – especially the National Labor Relations Act, along with union organizing – may have retarded recovery, the collapse would have been even more catastrophic had wages in the labor market actually functioned more like prices in commodity markets.

The fundamental defect of wage deflation was that it would lead to reduced production and employment. Keynesian economics is predicated on the assumption that unemployment is the result of a deficiency in aggregate demand. Therefore, a general reduction in wages and prices is not likely to lead to readjustment, but it will only make things worse. Even if it is assumed that the demand for labor is inversely related to the real wage, an exogenous decline in the level of money wages cannot increase employment even if the price of wage-goods declines proportionately. Moreover, if deflated wages lead to redistribution of income from wage earners to non-wage earners, it will also result in less spending. An episode of deflation could also result in a decrease of net financial wealth (Brown 1992). But there is also a limit to how much prices can be reduced following wage reductions. Employers still have fixed costs, and if they cannot reduce their prices to meet the new lower wages, the result will be a drop-off in demand because of reduced purchasing power.

Therefore, if the recession is severe enough, because of low aggregate demand, the extension of UI benefits is not going to have much of an impact on the supply of jobs. Rob Valetta and Katherine Kuang (2012) suggest that the real issue with the Great Recession is that there simply has been a weak labor demand. The weak recovery following the 2007–2009 recession is similar to the jobless recovery of the 1990–1992 and 2001 recessions. This suggests that the labor market has changed in ways impeding a cyclical bounce-back that has followed other recessions. Employers may be perceiving uncertainty about the future growth in both product demand and labor costs. There may be special factors associated with this recession that are not easily addressed through monetary or fiscal policies. Although such policies may have an impact on the central obstacle of weak aggregate demand, there are other factors that impinge on people's ability to demand goods and services in the aggregate.

***Who Are the Long-Term Unemployed?***

When looking at the long-term unemployed, the obvious question is whether they have characteristics that are different from the average unemployed population. In Australia, for instance, Bruce Chapman (1993) found the long-term unemployed to be disproportionately from the least advantaged segment of the labor force. The longer one is unemployed, the more disadvantaged one becomes. Similarly, using longitudinal data for Canada, Matthew Robertson (1986) found a great deal of long-term unemployment in seasonal occupations and industries. Long-term unemployment also tended to be concentrated among a minority of individuals experiencing extensive periods of time unemployed and periodic unemployment spells.

On the other hand, Imano Nunez and Ilias Livanos (2010) suggest that in Europe those with high levels of education were less likely to be unemployed, and that when they were unemployed their spells were likely to be shorter as well. Using data from the European Union's Labor Force Survey (LFS), they found that those with academic degrees had greater chances of being employed than those possessing a medium level of education. Graduates were less likely to be long-term unemployed than non-graduates. Nevertheless, the impact of higher education on long-term unemployment was more moderate. Higher education did significantly improve the employment prospects of graduates in Europe. Yet, those with low-levels of education had a higher chance of being employed than those with a medium education. To the extent that higher levels of education may be associated with greater human capital and higher levels of productivity, it may lend support to the skill-biased technological change argument. Higher levels of education were generally associated with low levels of unemployment because higher education generally leads to an accumulation of human capital which, in turn, is linked with higher productivity. An academic degree acts as a signal of ability. Peter Davidson (2011) also notes that the long-term unemployed have a low-skilled profile and face other barriers to employment than simply the duration of unemployment.

Livanos (2007) also found that long-term unemployment in Greece was affected by both marital status and age. Unmarried workers were more likely to be long-term unemployed than married workers, and older people were more likely to be long-term unemployed than younger people. Long-term unemployment was more affected by personal attributes, such as age, gender, marital status, and region of residence, and not necessarily by qualifications. In sum, the relevant literature would seem to suggest that single individuals with less education or skills and older workers are more likely to be unemployed long-term. While the long-term unemployed appear to come from the least advantaged segments of the labor force, it still is not clear what it means to be among the least advantaged. The least advantaged could refer to skills levels, demographics, or simply having the misfortune to be employed in certain industries and occupations.

In the pages that follow, I present data from the Current Population Survey (CPS) on the demographic composition of the unemployed for the years 2007–2010,

and compare them to data for the years 1991–1994. The 1990s are used as a reference because it was a period of relatively high long-term unemployment, although the actual recession ended in 1991. If the unemployment is structural, one should expect to see some significant changes in both industry and occupational composition since the 1991–1994 period. But if these compositions have not changed much, this might imply that long-term unemployment in this recession is due to factors other than structural change. But because the CPS is individual-level data, it can at best tell us about the demographic attributes of the individual. It can only tell us what type of demographics are to be found, for example, in industries and occupations. It cannot tell us what those industries and occupations require in terms of qualifications and skills, or why some people are hired while others are not. Still, the data can provide a clue as to whether labor market demographics have changed significantly from the 1990s to the late 2000s, and whether those changes tell us anything about the current labor market. Table 1 shows unemployment rates by educational categories and Table 2 shows the differences between those rates by category and the overall unemployment rate.

Unemployment obviously rises for everybody during a recession, but what stands out is that unemployment is higher among those with no more than a twelfth grade education, high school diploma, and only some college. It is lower among those with associate degrees, bachelor degrees, and graduate and professional degrees. On the face of it, this might appear to be consistent with the skills mismatch hypothesis. Among those with lesser education, unemployment is higher than the national unemployment rates in each year, and it is lower among those with more education. It may also be the case that unemployment is higher for those with less education because they are being bumped by those with more education who are now in jobs that do not require an advanced degree. This, too, would attest to the depths of the recession. These trends appear to be similar during the two periods, but with one difference. In the recession beginning in 2007, unemployment among those who had some college, but no degree, was higher than the national average as the recession deepened in 2009 and continued into 2010. It was lower among this group from 1991 to 1994. This, in and of itself, might suggest that the latter recession was particularly harsh on those lacking skills to the extent that having some college is considered the beginning of acquiring some skills. To have some college with no degree might also suggest that no real skills were acquired because the college education was never completed. Yet, the percentage increase among all educational categories was much greater during the 2007–2010 period than during the 1991–1994 period, which again would suggest that the recession, beginning with the financial meltdown in 2007, was different from the deep recession during the 1990s.

Overall, unemployment during the 1990s never rose as high as it did in 2009 and 2010. So, while there was long-term unemployment, the recession of the 1990s may not have been nearly as deep. What both periods appear to share in common is a sizeable percentage of long-term unemployed, defined as being unemployed for more than 26 weeks. General demographics for both periods comparing long-term unemployed to the unemployed can be seen in Tables 3 and 4.

**Table 1. Unemployment Rates by Educational Categories (Percent)**

	2007	2008	Change	2009	Change	2010	Change
Overall	4.8	8.3	+3.5	9.2	+0.9	8.3	-0.9
No more than twelfth grade	10.1	15.4	+4.3	16.0	+0.6	15.2	-0.8
High school graduate	6.2	10.7	+4.5	12.2	+1.5	11.0	-1.2
Some college, no degree	4.5	8.3	+3.8	9.5	+1.2	8.7	-0.5
Associate degree	3.2	6.1	+2.9	6.8	+0.7	6.0	-0.8
Bachelor degree	2.3	4.6	+2.3	4.9	+0.3	4.6	-0.3
Graduate and prof. degree	1.5	2.7	+1.2	2.9	+0.2	2.8	-0.1
	1991	1992	Change	2009	Change	2010	Change
Overall	7.1	6.6	-0.5	6.4	-0.2	5.3	-1.1
No more than twelfth grade	12.6	11.9	-0.7	12.9	+1.0	10.5	-1.4
High school graduate	8.0	7.6	-0.4	7.1	-0.5	5.8	-1.3
Some college, no degree	6.5	5.8	-0.7	5.5	-0.3	4.9	-0.6
Associate degree	4.5	4.6	+0.1	4.2	-0.4	3.6	-0.6
Bachelor degree	3.3	3.4	+0.1	3.1	-0.3	2.7	-0.4
Graduate and prof. degree	2.2	2.6	+0.2	2.2	-0.4	2.2	0.0

**Table 2. Differences from the Overall Unemployment Rate, by Educational Categories (Percent)**

	2007	2008	2009	2010
No more than twelfth grade	+5.3	+7.1	+6.8	+6.9
High school graduate	+1.4	+2.4	+3.0	+2.7
Some college, no degree	-0.3	0.0	+0.3	-0.4
Associate degree	-1.6	-2.2	-2.4	-2.3
Bachelor degree	-2.5	-3.7	-4.3	-3.7
Graduate and prof. degree	-3.3	-5.6	-6.3	-5.5
	1991	1992	1993	1994
No more than twelfth grade	+5.5	+5.3	+6.5	+5.2
High school graduate	+0.9	+1.0	+0.7	+0.5
Some college, no degree	-0.6	-0.8	-0.9	-0.4
Associate degree	-2.6	-2.0	-2.2	-1.7
Bachelor degree	-3.8	-3.2	-3.3	-2.6
Graduate and prof. degree	-4.9	-4.0	-4.2	-3.1

Source: Author's calculations based on data from the Current Population Survey's Annual March Supplement (U.S. Department of Commerce 1992–1995 and 2008–2011).

Notes: Each Annual Supplement measures the previous year. These figures are based on surveys of a sample size of 60,000 households nationwide. Overall unemployment figures do differ from monthly figures reported by the media. One reason for this is that the Bureau of Labor Statistics (BLS) releases monthly averages. The Annual Supplements reflect annual averages. Also, the BLS bases its figures on unemployment insurance claims filed. Here one relies on respondents to answer honestly about whether they are unemployed and whether they have been looking for work in the four weeks prior to the survey.

Table 3. Demographics of Unemployed vs. Long-Term Unemployed

	UE	LTUE	UE	LTUE	UE	LTUE	UE	LTUE
	2007		2008		2009		2010	
Education								
No more than twelfth grade	25.1	24.4	20.9	25.3	21.2	17.7	20.0	20.8
High school graduate	39.0	42.4	37.8	32.6	39.1	40.4	37.2	36.6
Some college, no degree	17.5	15.2	19.3	20.2	19.3	19.6	20.0	20.1
Associate degree	6.4	6.7	8.0	7.6	7.4	6.8	7.8	7.9
Bachelor degree	8.8	8.3	10.8	11.1	10.9	10.8	11.9	11.4
Graduate and prof. degree	3.2	3.1	3.2	3.2	3.5	3.8	3.1	3.2
	1991		1992		1993		1994	
No more than twelfth grade	23.4	29.4	22.9	25.4	22.0	26.0	27.1	32.1
High school graduate	39.0	38.5	37.3	39.1	36.6	36.9	38.0	35.0
Some college, no degree	19.1	15.6	19.6	16.2	20.4	17.1	18.4	18.0
Associate degree	5.1	4.7	6.1	5.8	6.4	5.7	5.1	4.9
Bachelor degree	10.0	8.5	10.7	10.0	11.3	10.8	7.2	6.7
Graduate and prof. degree	3.5	3.4	3.4	3.4	3.3	3.6	3.6	3.3
	2007		2008		2009		2010	
Race								
White	76.1	72.4	75.6	70.1	76.5	74.7	75.8	72.6
Black	16.0	18.4	15.5	19.8	15.5	16.8	16.1	18.0
	1991		1992		1993		1994	
White	85.8	81.5	85.1	82.8	84.0	80.6	76.6	71.6
Black	10.0	13.6	10.3	12.5	10.6	13.3	14.1	17.2
	2007		2008		2009		2010	
Age								
16-19	9.4	11.1	7.2	9.2	5.6	6.3	5.7	5.6
20-24	17.1	16.1	13.8	15.2	14.1	13.6	14.7	15.3
25-34	23.9	23.8	23.6	20.8	25.5	24.3	24.1	23.1
35-44	20.4	18.8	23.1	22.6	23.0	22.8	22.6	21.8
45-54	18.8	18.6	21.5	19.4	21.6	21.3	20.9	22.2
55-64	9.9	11.1	10.4	12.2	9.9	11.1	11.6	11.7
65-72	0.6	0.4	0.3	0.6	0.4	0.6	0.3	0.2
73+								
	UE	LTUE	UE	LTUE	UE	LTUE	UE	LTUE
	1991		1992		1993		1994	
16-19	7.8	8.1	8.1	7.0	8.2	8.4	9.2	9.4
20-24	17.6	15.0	17.8	14.4	16.8	15.5	16.4	17.2
25-34	31.9	28.2	30.6	27.8	30.7	26.8	25.5	21.9
35-44	22.6	23.3	23.6	26.4	23.9	25.0	24.9	25.6
45-54	13.2	16.5	13.5	15.8	13.4	17.0	14.6	14.9
55-64	5.9	7.2	5.5	7.6	5.6	6.1	7.9	9.6
65-72	0.9	1.4	0.8	0.9	0.9	0.9	1.0	0.8
73+	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.2
	2007		2008		2009		2010	
Sex								
Male	61.9	57.2	64.2	60.4	64.4	63.9	61.3	59.2
Female	38.1	42.8	35.8	39.6	35.6	36.1	38.7	40.8
	1991		1992		1993		2010	
Male	61.2	65.3	61.6	64.6	59.3	61.0	62.2	60.9
Female	38.8	34.7	38.4	35.4	40.7	39.0	37.8	39.1

Source: Current Population Survey's Annual March Supplement for 1992–1995 and 2008–2011.



**Table 4. Unemployed vs. Long-Term Unemployment by Industry**

	UE	LTUE	UE	LTUE	UE	LTUE	UE	LTUE
	2007		2008		2009		2010	
Agriculture, forestry, fishing	2.7	1.5	2.3	3.7	3.1	3.5	3.3	3.6
Mining	0.5	0.2	0.7	0.5	0.7	0.7	0.6	0.6
Construction	21.7	18.2	19.7	14.5	19.4	16.6	18.3	16.2
Manufacturing	11.4	11.5	14.1	12.2	13.2	15.8	9.5	10.3
Wholesale and retail trade	13.1	13.6	14.9	16.4	13.4	14.3	13.5	14.9
Transportation and utilities	3.7	4.4	4.4	4.2	3.9	4.5	4.2	4.5
Information	2.0	1.9	2.1	2.2	2.1	2.1	2.1	1.9
Finan., insurance, real estate, rental	4.8	3.6	4.4	3.5	5.0	5.2	4.5	4.6
Professional, scientific, mgmt., admin.	14.1	14.4	14.0	15.7	13.6	13.4	13.6	13.7
Education, health, and social services	9.5	11.3	8.0	10.6	9.3	8.5	11.2	10.9
Arts, entertain., recr., accomod., food	12.1	13.1	10.8	11.6	11.2	10.1	12.5	11.2
Other service	3.4	4.4	3.2	3.2	3.2	3.6	3.6	3.8
Public administration	1.1	1.7	1.0	1.4	1.6	1.5	2.9	3.6
Armed forces	0.1	0.0	0.3	0.5	0.4	0.2	0.1	0.1
	1991		1992		1993		1994	
Agriculture, forestry, fishing	3.6	3.9	3.6	3.8	3.7	4.2	5.7	7.6
Mining	0.8	1.2	0.8	0.5	0.7	0.4	0.6	0.6
Construction	15.5	15.9	14.6	15.9	14.2	13.0	17.4	13.5
Durable goods	10.0	9.4	9.6	9.8	9.1	9.3	8.1	5.3
Nondurable goods	7.3	7.1	7.9	7.9	6.8	7.2	8.6	10.4
Transp., commun., public utilities.	5.0	4.5	5.1	4.5	5.1	5.1	4.9	4.5
Wholesale trade	3.4	3.9	3.3	3.4	3.1	2.7	3.6	2.5
Retail trade	20.7	19.9	20.3	18.8	21.4	21.1	19.4	19.8
Finance, insurance, real estate	3.9	3.4	3.8	3.8	3.7	3.9	3.2	3.1
Business and repair services	7.3	9.6	7.7	9.7	8.3	10.5	8.0	11.5
Personal serv., incl. private household	4.2	4.6	4.2	4.9	3.7	3.5	4.9	5.7
Entertainment and recreation	2.3	2.9	2.5	2.7	2.8	3.2	3.4	3.3
Professional and related	13.6	13.3	13.9	11.5	15.1	13.0	10.8	10.8
Public administration	2.5	2.4	2.9	2.9	2.2	2.3	1.4	1.4

Source: Current Population Survey's Annual March Supplement for 1992–1995 and 2008–2011.

The percentage of those with no more than a high school education was only higher among the long-term unemployed relative to the unemployed in 2008. The percentage of those with no more than a high school education was higher among the long-term unemployed relative to the overall unemployed with no more than a high school education consistently from 1991 to 1994. Still, the highest concentrations of long-term unemployed are among those with a high school degree during both periods. Also, the percentage of long-term unemployed with associate degrees is lower relative to the overall unemployed population during both periods. To the extent that an associate degree reflects some skills attainment, this would suggest that those with more skills are less likely to be among the long-term unemployed. In addition, relative to the overall unemployed, blacks appear to be more likely to be among the long-term unemployed than whites in both periods. Women, however, were only more likely to be among the long-term unemployed during the 2007–2010, which was the opposite of the 1991–1994 period, with the exception of 1994.

The real question to have some bearing on the issue of structural change is whether there are significant changes in industrial and occupational compositions

between the two periods. Between 2007 and 2009, long-term unemployment in manufacturing increased by 4.3 percent, while overall unemployment in manufacturing only increased by 1.8 percent. There was then a 1.5 percent decrease in long-term unemployment in manufacturing from 2009 to 2010. During the 1990s, there did not appear to be any great increases in manufacturing (both durable and non-durable goods, together), especially during the 1991–1994 period. Still, there appeared to be a higher concentration of unemployed and long-term unemployed in manufacturing from 1991 to 1994 than from 2007 to 2010. In financial and real estate, there was a 1.6 percent increase among the long-term unemployed compared to a 0.2 percent increase in overall unemployed between 2007 and 2009. Then between 2009 and 2010, there was a 0.7 and a 1.2 percent decrease among the long-term unemployed and overall unemployed, respectively. Between 1991 and 1993, there was a 0.5 percent increase among the long-term unemployed in finance and real estate, followed by a 0.8 percent decrease in the long-term unemployed between 1993 and 1994. Aside from a slight rise in 1992, overall unemployment in real estate during the 1991–1994 period actually decreased. During the 1991–1994 period, there was a 1.9 percent increase in long-term unemployment in business and repair services compared to a 0.7 percent increase in overall unemployment. Otherwise, the largest increase in long-term unemployment during both periods was in agriculture, forestry, and fishing. Between 2007 and 2010, long-term unemployment increased by 2.1 percent, and overall unemployment increased by 0.6 percent. Between 1991 and 1994, long-term unemployment increased by 3.7 percent, and overall unemployment increased by 2.1 percent.

Some of these differences clearly speak to the depth of this recession compared to the one in the 1990s. But it also speaks to a recession that affected more of a cross-section of the American labor market. That there has been an increase in long-term unemployment in manufacturing since the 1990s surely speaks to the absence of demand for manufactured goods. That there is a tremendous increase in the percentage of long-term unemployed in financial employment, real estate, and rentals is no doubt consistent with a recession that began as a financial crisis, particularly in the subprime mortgage market, which then manifested itself in both the crisis of American banks and the bottoming-out of the housing market. A look at industries, however, might not tell us enough. The real issue is what changes occurred in occupational composition. This can be gleaned from Tables 5 and 6.

During the 2007–2010 period, the highest concentrations of long-term unemployed would appear to be in construction trades and extraction. Where long-term unemployment appears to be higher relative to overall unemployment is in sales (and related) as well as office and administrative sectors. With the exception of 2008, it is also higher in production among the long-term unemployed relative to the overall unemployed. In the 1991–1994 period, the highest concentrations of long-term unemployed are in precision production, craft and repair, and services, excluding household and protective sectors. Between 2007 and 2010, long-term unemployment increased by 2.3 percent among transportation and material moving workers, while overall unemployment among these workers only increased by 0.8 percent. Although business and financial operations do not have the highest concentration of long-term

**Table 5. Unemployed vs. Long-Term Unemployment by Occupation, 1991–1994**

	1991		1992		1993	
	UE	LTUE	UE	LTUE	UE	LTUE
Executive, admin., managerial	6.1	5.4	6.5	5.9	6.9	6.5
Professional specialty	6.7	5.7	6.6	5.7	6.9	6.1
Technical and related support	2.2	1.7	2.2	1.8	2.2	2.1
Sales	10.5	9.7	10.8	11.2	11.0	11.8
Admin. support, incl. clerical	12.3	11.6	11.9	11.5	12.3	11.2
Private household	0.6	0.8	0.8	1.2	0.7	0.8
Protective service	1.3	1.5	1.2	1.2	1.2	1.4
Service, excl. household and protective	14.1	16.2	14.4	14.8	15.7	16.9
Farming, fishing, forestry	4.1	4.6	4.1	4.7	4.5	5.0
Precision, production, craft, repair	17.0	16.9	16.4	16.3	15.6	14.9
Machine operatives, assemblers, inspectors	10.1	10.3	10.0	10.6	8.5	9.2
Transp. and materials moving	5.9	5.0	5.9	4.2	5.7	4.2
Handlers, equip. cleaners, helpers, laborers	8.6	10.7	8.5	10.7	8.4	9.7
Armed forces	0.4	0.0	0.6	0.1	0.3	0.2

Source: Current Population Survey's Annual March Supplement for 1992–1995.

**Table 6. Unemployed vs. Long-Term Unemployment by Occupation, 2007–2010**

	2007		2008		2009		2010	
	UE	LTUE	UE	LTUE	UE	LTUE	UE	LTUE
Management occupations	3.6	3.8	5.0	4.5	5.3	6.0	4.4	3.8
Business and financial operations	2.1	1.7	2.2	1.6	2.0	2.2	2.6	2.5
Computer and mathematical	0.7	0.4	1.5	1.0	1.5	1.7	1.0	0.8
Architecture and engineering	0.9	0.6	0.6	1.2	1.3	1.3	0.6	0.6
Life, physical, and social science	0.4	0.8	0.5	0.7	0.3	0.3	0.6	0.4
Community and social service	0.7	0.8	0.7	0.7	0.9	0.7	0.8	0.7
Legal	0.5	0.2	0.5	0.7	0.2	0.4	0.4	0.2
Education, training, library	2.0	2.7	1.6	2.3	1.8	1.3	1.8	2.2
Art, design, entertain., sports, media	1.4	1.9	1.6	1.4	1.7	1.9	1.9	2.2
Healthcare practitioner and technical	0.8	0.6	1.2	1.2	0.8	0.7	1.5	1.6
Healthcare support	1.7	1.9	1.7	1.6	1.8	1.6	1.7	1.7
Protective service	0.9	0.6	1.0	1.3	1.4	1.2	1.4	1.2
Food preparation and service related	8.5	9.6	6.6	7.7	6.9	5.9	7.8	7.4
Buildings and grounds maintenance	6.3	7.1	6.0	7.0	6.1	5.4	6.7	5.7
Personal care and service	2.3	3.3	2.4	2.5	2.9	3.2	3.0	2.8
Sales and related	11.2	12.5	10.9	11.6	10.8	11.6	9.8	10.5
Office and administrative support	11.2	11.7	11.1	12.3	10.9	11.4	13.3	15.1
Farming, fishing, forestry	2.7	1.3	2.0	3.8	2.7	2.8	2.9	3.6
Construction trades extraction	21.2	17.7	17.9	13.6	17.9	16.1	17	16
Installation, maintenance, repair	3.1	2.9	3.6	3.5	3.6	3.6	3.4	3.5
Production	9.0	10.9	10.4	9.5	9.4	10.8	7.6	8.1
Transportation and materials moving	8.7	7.1	10.2	10.4	9.2	9.7	9.5	9.4
Armed forces and military	0.1	0.0	0.3	0.5	0.4	0.2	0.1	0.1

Source: Current Population Survey's Annual March Supplement for 2008–2011.

unemployment, long-term unemployment increased by 0.8 percent compared to an increase of 0.5 percent in overall unemployment in these occupations between 2007 and 2010. In office and administrative support, there was a 3.4 percent increase in long-term unemployment compared to a 2.1 percent increase in overall unemployment. Between 1991 and 1994, long-term unemployment in services

increased by 2.0 percent, compared to a 0.8 percent increase in general unemployment. But there is no serious increase in long-term unemployment in precision, production, craft, and repair. There is higher long-term unemployment relative to general unemployment among handlers, equipment cleaners, helpers, and laborers, but there is a decrease in long-term unemployment among this group (of 0.7 percent) between 1991 and 1994. At the same time, overall unemployment among this group increases by 1.1 percent. As with the changes in industrial composition, increases in long-term unemployment between 2007 and 2010 were considerably greater and more across the board than between 1991 and 1994. Again, this may speak more to the depths of the recession and the absence of aggregate demand to get the economy going again.

Between 2007 and 2010, long-term unemployment appears to increase substantially in almost all occupations. Relative to other occupations, increases in long-term unemployment in management occupations were not that substantial. The overall increase in management occupations between 2007 and 2010 was 0.8 percent, although it was actually 1.7 percent between 2007 and 2009, the actual recession period. Between 2007 and 2009, long-term unemployment in these occupations increased by 2.4 percent, but then dropped back down in 2010 to where it had been in 2007. Again, while there were only small concentrations of overall unemployment and long-term unemployment in healthcare practitioner and technical occupations, they increased by 1.0 and 0.7 percent among the long-term unemployed and overall unemployed respectively.

### ***Regression Analysis***

The real question is whether there are certain characteristics that would predispose one to be among the ranks of the long-term unemployed. A logit regression analysis can provide some clues as to whether certain variables are more likely to have an effect on long-term unemployment. It can also shed light on whether there were differences between lower paying occupations from one period to another that would make long-term unemployment more likely. With long-term unemployment – those being unemployed for more than 26 weeks – as the dependent variable, I test for the effects of the following: having a low educational attainment (less than twelfth grade education); belonging to the 18-24 age cohort; being black and female; working in manufacturing, trade, finance, business, repair services, and services in general; being an executive or manager, a production or craftsperson, a machine operative, and a laborer. All variables are set to 1. Regression coefficients for the 1991-1994 and 2007-2010 periods can be seen in Tables 7 and 8 respectively.

Between 1991 and 1994, those most likely to be unemployed long-term were working in the following occupations: production/craftsperson, machinist/operatives, and laborers. Those working in the trade industry (sales) and the business and repair industry also had a high probability of being long-term unemployed. Relative to other industries, those in manufacturing had a lower probability of being among the long-term unemployed. Still, manufacturing did have a positive effect on being long-term unemployed, and was statistically significant at the percent level. The less than twelfth

grade education variable was not statistically significant, nor was the 18-24 age variable for 1991 and 1992. But where the age variable was statistically significant in 1993 and 1994, it had a negative effect for long-term unemployment. People with low educational attainment, employed in the manufacturing industries, had lower relative probabilities of being among the long-term unemployed.

The determinants of long-term unemployment would appear to be one's occupation, not one's educational level or industry. This alone might undermine what Frank Levy and Peter Temin (2010) call the "Washington Consensus" holding that skill-biased technical change was the source of income inequality, stagnating wages for the average worker, and potentially long-term unemployment. This so-called consensus maintained that the economy could grow through a set of microeconomic policies of deregulation and privatization intended to achieve greater efficiency. Although the consensus policies would certainly affect wages and middle-class living

**Table 7. Regression Coefficients, 1991–1994**

	1991	1992	1993	1994
Less than twelfth grade	-0.058 (0.378)	0.045 (0.515)	0.066 (0.361)	-0.033 (0.677)
18-24 years old	-0.098 (0.166)	0.098 (0.192)	-0.301 (0.000)	-0.235 (0.007)
Black	-0.352 (0.000)	-0.218 (0.016)	-0.268 (0.006)	-0.065 (0.543)
Female	-0.169 (0.010)	-0.272 (0.000)	-0.344 (0.000)	-0.203 (0.011)
Manufacturing	0.371 (0.000)	0.521 (0.000)	0.468 (0.000)	0.427 (0.001)
Trade	0.441 (0.000)	0.473 (0.000)	0.550 (0.000)	0.498 (0.001)
Finance	0.740 (0.000)	0.751 (0.000)	0.271 (0.214)	0.271 (0.202)
Executive/management	0.526 (0.000)	0.416 (0.003)	0.452 (0.002)	0.573 (0.001)
Production/craftsperson	0.881 (0.000)	0.714 (0.000)	0.675 (0.000)	0.817 (0.000)
Machinist/operatives	0.648 (0.000)	0.476 (0.000)	0.326 (0.029)	0.483 (0.002)
Laborer	0.841 (0.000)	0.510 (0.000)	0.640 (0.000)	0.665 (0.000)
Business and repair services	0.564 (0.000)	0.250 (0.058)	0.411 (0.002)	0.118 (0.442)
Services	0.266 (0.008)	0.144 (0.167)	0.374 (0.000)	0.465 (0.000)
Constant	0.953 (0.000)	1.081 (0.000)	1.056 (0.000)	1.215 (0.000)

Source: Current Population Survey's Annual March Supplement for 1992–1995.

Note: *p*-Values in parentheses.

Table 8. Regression Coefficients, 2007–2010

	2007	2008	2009	2010
Less than twelfth grade	0.020 (0.775)	0.062 (0.223)	0.002 (0.975)	0.019 (0.734)
18-24 years old	-0.026 (0.736)	-0.235 (0.000)	-0.088 (0.154)	-0.033 (0.631)
Black	-0.276 (0.002)	-0.189 (0.006)	-0.280 (0.000)	-0.305 (0.000)
Female	-0.372 (0.000)	-0.323 (0.000)	-0.297 (0.000)	-0.274 (0.000)
Manufacturing	0.185 (0.183)	0.160 (0.083)	0.157 (0.131)	0.036 (0.769)
Trade	0.208 (0.043)	0.331 (0.000)	0.486 (0.000)	0.351 (0.000)
Finance	0.529 (0.002)	0.325 (0.010)	0.464 (0.000)	0.293 (0.050)
Executive/management	0.084 (0.650)	0.455 (0.000)	0.464 (0.000)	0.739 (0.000)
Installer/repair person	0.436 (0.030)	0.481 (0.001)	0.615 (0.000)	0.854 (0.000)
Production	0.261 (0.100)	0.374 (0.001)	0.561 (0.000)	0.791 (0.000)
Business and finance	0.556 (0.022)	0.483 (0.004)	0.470 (0.013)	0.839 (0.000)
Office/administrative	0.501 (0.000)	0.458 (0.000)	0.695 (0.000)	0.840 (0.000)
Transportation and materials moving	0.516 (0.000)	0.404 (0.000)	0.645 (0.000)	0.928 (0.000)
Constant	1.024 (0.000)	0.906 (0.000)	1.186 (0.000)	1.397 (0.000)

Source: Current Population Survey's Annual March Supplement for 2008–2011.

Note: *p*-Values in parentheses.

standards, the emphasis on skill-biased technical change also worked to shift responsibility for the plight of workers from employers – as well as policymakers who supported them – to workers themselves. That one's educational attainment appeared to have less of an effect is not something to be taken lightly. Those variables with the greatest effect on long-term unemployment were low paying occupations, but also higher-skilled blue collar workers. None of this is to say that there has not been any structural shift, but only that it might not be the type of structural shift that supports the skills-biased technical change argument.

Throughout the four year period (2007–2010), those in the 18-24 age cohort did not appear to have any real probability of being long-term unemployed, nor was the variable statistically significant. Whereas in the 1990s, manufacturing had positive effects for long-term unemployment that were statistically significant, it was not statistically significant in the period 2007–2010. The highest probabilities for long-

term unemployment, especially by 2010, were specifically in occupations. Those most likely to be among the long-term unemployed were transportation and materials moving workers, office and administrative workers, installation and repair workers, and business and finance workers. The industry with the highest probability for long-term unemployment was executive/management, although it was not statistically significant in 2007. Finance was statistically significant throughout the four year period, with strong positive effects in 2007, which was the beginning year of the financial meltdown, and again in 2009. The effects were weaker in 2008 and 2010, which might potentially reflect the effects of bank bailouts. Relative to other occupations, those working in the production occupations had low probabilities in 2007 and 2008, but the probabilities for long-term unemployment became much stronger in 2009 and 2010.

What could be described as blue-collar occupations appeared to have less of an effect, at least in relative terms. Yet, in 2010, a recovery year, these occupational categories appeared to have greater probabilities for long-term unemployment than being in the finance industry. It would also suggest that certain industries were not going to return. The lower value of the production coefficient would suggest that the difference between the two periods was not a structural change, resulting in a mismatch. That manufacturing was essentially a non-issue in the second period relative to the first might mean that either there has been no real structural change, or that it has had no effect because it has been in decline for a long time now, and the major structural change was evident during the 1990s. Long-term unemployment in this recession appeared to have less to do with structural changes, which might have been the key during the 1990s, and more to do with the depth of the recession. For instance, installation and repair personnel appeared to have less effect during the 2007–2010 period than did machinist/operative during the 1991–1994 period, although only slightly so. If one can say that a person who worked as an installer and repairperson had fewer skills, it might conceivably undermine any claims of a skills mismatch due to any structural changes.

Jesse Rothstein (2012) argues that the claims of an important structural component of unemployment imply that labor markets are tighter than they appear. This tightness should be directly observable in wages. Therefore, the rise in long-term unemployment relative to past downturns can be explained by an extended period of labor market weakness combined with long-run demographics and labor market trends that predate the current recession. Yet, the questions remain: Is it simply a question of being in those industries and/or occupations that are likely to predispose one to long-term unemployment, or might there also be a relationship between industry/occupational characteristics and other characteristics, such as educational and income levels? Do all people in manufacturing, for instance, have the same probability of being long-term unemployed? Are those in – say – middle income ranges in manufacturing (because they may speak to the presence of blue-collar workers) more likely to be long-term unemployed than those in high income ranges in manufacturing (the executive class)? In the next couple of regressions I create some interaction variables to capture the effects of some industries and occupations in

certain income ranges and what might be referred to as disadvantaged circumstances. For the purposes of these regressions, I define disadvantaged or least advantaged circumstances as being in a household earning less than \$30,000 a year. I also test for office/administrative workers in households earning less than \$30,000 a year, and those who are installation and repair persons also in households earning less than \$30,000 a year. Again, the purpose of the interaction terms is to capture the effects – if any – of being in certain occupational groupings which are also among the least advantaged circumstances. Tables 9 and 10 show interaction regression coefficients for the purpose of addressing this question. Again, they are logistical regression coefficients, with long-term unemployment being the dependent variable, and with all variables being set to a value of 1.

In 2007, those in households earning less than \$30,000 a year were among the least likely to be among the long-term unemployed, but those in certain industries and occupations in households earning less than \$30,000 a year did have very strong probabilities of being among the long-term unemployed. Those who worked as installers and repair people in households earning less than \$30,000 a year had the highest probability of being among the long-term unemployed. The second most likely group to be among the long-term unemployed were office/administrative workers in households earning less than \$30,000 a year. In other words, those at the low end of the income distribution in these occupations were most likely to be long-term unemployed. This might conceivably reflect a low-skilled or less experienced segment of the labor market. To the extent that individuals earning within certain wage ranges may be reflective of skills levels, it might suggest that those with no particular skills were more likely to be among the long-term unemployed, which would also be consistent with some of the literature stipulating that those below certain levels were more likely to be among the long-term unemployed. Yet, it is not clear that having no particular skills was necessarily the same as lacking technical skills. The absence of skills could also refer to soft skills.

As with the 2007–2010 period, those in households earning less than \$30,000 a year alone were highly unlikely to be among the long-term unemployed. But those in certain industries and occupations earning less than \$30,000 a year did show strong probability of being among the long-term unemployed. Those in production and craft occupations in households earning less than \$30,000 a year had strong probability of being among the long-term unemployed, although the effects were weaker in 1993. Oddly enough, those working as machine operatives and assemblers in households earning less than \$30,000 a year had strong probability of being among the long-term unemployed in 1993, but this variable was not statistically significant in the other years. Those working in manufacturing in households earning less than \$30,000 a year did have strong probability of being among the long-term unemployed from 1992 to 1994. In 1991, this variable was not statistically significant. But between 1992 and 1994, the coefficient for this variable did get larger. Those working in the services in households earning less than \$30,000 a year also had relatively strong probability of being among the long-term unemployed. Business and repair in households earning less than \$30,000 a year had positive effects for long-term unemployment in 1991 and 1993, but was not statistically significant in 1992 and 1994. What these effects did



Table 9. Labor Market Coefficients, 2007–2010

	2007	2008	2009	2010
Production occupations earning <\$30,000	0.604 (0.041)	0.126 (0.567)	0.661 (0.004)	0.503 (0.067)
Production occupations earning \$30,000-59,999	-0.467 (0.253)	-0.176 (0.470)	0.103 (0.695)	0.535 (0.108)
Production occupations with no more than twelfth grade	-0.342 (0.286)	0.362 (0.118)	-0.140 (0.556)	0.147 (0.614)
Installer/repair with no more than twelfth grade	-0.460 (0.278)	-0.155 (0.582)	-0.048 (0.864)	-0.135 (0.703)
Installers/repair earning <\$30,000	1.169 (0.002)	0.887 (0.001)	0.715 (0.007)	1.299 (0.000)
Installers/repair earning \$30,000-59,999	-0.144 (0.767)	0.045 (0.872)	0.188 (0.527)	-0.440 (0.279)
Those with no more than twelfth grade in manufacturing	0.257 (0.367)	-0.370 (0.056)	0.174 (0.421)	-0.104 (0.702)
Those with bachelor degree in manufacturing	-0.880 (0.092)	-0.052 (0.830)	0.103 (0.712)	-0.174 (0.618)
Those in manufacturing earning < \$30,000	0.140 (0.603)	0.665 (0.000)	0.156 (0.443)	0.309 (0.229)
Those in manufacturing earning \$30,000-59,999	0.082 (0.800)	-0.026 (0.895)	-0.123 (0.574)	-0.101 (0.718)
Office/administrative < \$30,000	0.536 (0.000)	0.485 (0.000)	0.843 (0.000)	0.877 (0.000)
Those in manufacturing earning \$100,000+	0.750 (0.352)	0.029 (0.943)	-0.095 (0.856)	-0.677 (0.356)
Those in executive manag. occup. earning \$100,000+	0.012 (0.984)	-0.601 (0.140)	-0.043 (0.912)	0.189 (0.656)
Those in finance occupations earning \$100,000+	0.148 (0.814)	-0.293 (0.553)	0.137 (0.813)	-0.981 (0.155)
Those in finance occup. with grad./prof. degrees	1.065 (0.174)	0.837 (0.135)	-0.160 (0.765)	0.095 (0.866)
Those in exec./manag. occup. with grad./prof. degrees	-0.538 (0.324)	-0.371 (0.249)	0.071 (0.844)	-0.325 (0.462)
Those earning < \$30,000	-0.425 (0.000)	-0.573 (0.000)	-0.807 (0.000)	-1.046 (0.000)
Those earning \$100,000+	-0.407 (0.260)	-0.175 (0.403)	-0.196 (0.378)	-0.014 (0.958)
Black female	-0.205 (0.132)	-0.103 (0.347)	-0.247 (0.023)	-0.376 (0.002)
Blacks with less than twelfth grade education	-0.239 (0.051)	-0.202 (0.039)	-0.132 (0.157)	-0.123 (0.234)
Constant	0.736 (0.000)	0.500 (0.000)	0.570 (0.000)	0.539 (0.000)

Source: Current Population Survey's Annual March Supplement for 2008–2011.

Note: *p*-Values in parentheses.

not sort out was whether they were likely to be long-term unemployed because they were specifically in those industries and occupations in households earning less than \$30,000 a year, or simply because being long-term unemployed in certain industries and occupations – which predisposed one to being long-term unemployed – made it a foregone conclusion that one would be in a lower income household.

Table 10. Labor Market Coefficients, 1991-1994

	1991	1992	1993	1994
Production/craft occupations earning < \$30,000	0.844 (0.000)	0.835 (0.000)	0.472 (0.014)	0.812 (0.000)
Production/craft occupations earning \$30,000-59,999	0.426 (0.083)	0.141 (0.582)	0.281 (0.278)	0.428 (0.115)
Production/craft occup. with no more than twelfth grade	0.020 (0.906)	-0.021 (0.907)	0.328 (0.103)	0.057 (0.788)
Machine, operatives, assemblers earning < \$30,000	0.314 (0.230)	0.024 (0.933)	0.724 (0.022)	0.009 (0.980)
Machine, operatives, assemblers earning \$30,000-59,999	0.092 (0.837)	0.241 (0.584)	0.338 (0.494)	-0.680 (0.260)
Machine oper., assemblers with no more than twelfth grade	0.376 (0.193)	0.436 (0.080)	-0.536 (0.120)	0.548 (0.160)
Laborers earning < \$30,000	0.965 (0.000)	0.826 (0.001)	0.345 (0.232)	0.505 (0.104)
Laborers earning \$30,000-59,999	1.018 (0.072)	0.436 (0.53)	0.652 (0.243)	0.292 (0.643)
Business and repair earning < \$30,000	0.463 (0.000)	0.157 (0.242)	0.337 (0.013)	0.098 (0.531)
Services earning < \$30,000	0.345 (0.000)	0.309 (0.002)	0.516 (0.000)	0.596 (0.000)
Laborers with no more than twelfth grade	-0.163 (0.523)	-0.218 (0.413)	0.443 (0.152)	0.277 (0.405)
Those with no more than twelfth grade in manufacturing	-0.100 (0.647)	-0.103 (0.651)	-0.170 (0.491)	-0.398 (0.155)
Those with a bachelor degree in manufacturing	0.086 (0.826)	-0.157 (0.662)	-0.120 (0.729)	-0.301 (0.474)
Those in manufacturing earning < \$30,000	0.364 (0.061)	0.497 (0.016)	0.623 (0.005)	0.817 (0.001)
Those in manufacturing earning \$30,000-59,999	-0.180 (0.538)	0.285 (0.299)	-0.095 (0.746)	-0.297 (0.380)
Those in manufacturing earning \$100,000+	-19.490 (0.998)	0.918 (0.372)	-17.610 (0.998)	-17.824 (0.998)
Those in exec./manag. occupations earning \$100,000+	19.681 (0.998)	-2.161 (0.084)	-0.282 (0.828)	18.474 (0.998)
Those in exec./manag. occup. with grad./prof. degrees	0.351 (0.437)	-0.038 (0.917)	-0.363 (0.409)	0.295 (0.577)
Those in Finance Occupations earning \$100,000+	-18.914	-19.810		-38.229
Those in finance occup. with grad./prof. degrees	0.207 (0.794)	0.646 (0.349)	-18.617 (0.998)	1.830 (0.035)
Those earning < \$30,000	-0.631 (0.000)	-0.602 (0.000)	-0.803 (0.000)	-0.774 (0.000)
Those earning \$100,000+	-0.072 (0.937)	0.296 (0.636)	-0.794 (0.243)	-0.697 (0.391)
Black females	-0.264 (0.071)	-0.083 (0.579)	-0.167 (0.284)	0.087 (0.602)
Blacks with less than a twelfth grade education	-0.227 (0.039)	-0.202 (0.087)	-0.166 (0.195)	-0.153 (0.295)
Constant	0.337 (0.008)	0.449 (0.000)	0.363 (0.005)	0.556 (0.000)

Source: Current Population Survey's Annual March Supplement for 1992-1995.

Note: *p*-Values in parentheses.

Despite some variation, however, it would appear that the constant running through the two time periods is that those at the low end of the income distribution in certain industries and occupations were highly likely to be among the long-term unemployed. Is this reflective of the dual nature of the economy with high-skilled and high-paying jobs at one end and low-skilled and low-paying jobs at the other end? Still, it is not clear that there were great changes from the 1991–1994 period to the 2007–2010 period. Rather, most of the structural changes had already occurred by the earlier period.

What then has changed between one deep recession with long-term unemployment and the current one? Manufacturing had strong positive effects on being long-term unemployed during the 1991–1994 period, but was not statistically significant during the 2007–2010 period. This suggests that there was no major structural shift in the economy, at least in terms of manufacturing, other than what might have occurred by the 1990s. What is clearly new is the positive effect of trade and finance, which speaks more directly to the financial meltdown that triggered the recession. Unlike the previous deep recession, low-paying or blue-collar occupations appeared to have lower probabilities. Some might attribute this to the lower reservation wages associated with these jobs. Yet, as the recession appeared to be easing, especially going into 2010, the probability of finance also diminished, which might reflect the various bank bailouts. To the extent that much of the literature on structural change defines it in terms of industrial/manufacturing jobs, the trends observed in the 2007–2010 period were most likely a continuation of the trends that had already been underway in the 1991–1994 period. If there were structural changes during this period, they primarily appeared to be in other industries and occupations. That long-term unemployment was widespread and across the board would suggest that the issue was a decline in aggregate demand, rather than structural changes.

While a higher percentage of those with low educational attainment were unemployed relative to others, low educational attainment did not appear to be a major determinant of long-term unemployment, which is the assumption of the skills-biased technical change thesis for long-term unemployment. Perhaps the question that is not so easily answered is why the higher probability in 2010 for those working as installers and repair persons and those in production over those with low educational attainment? Were these occupational categories necessarily low-paying and/or low-skilled? By itself, low educational attainment may be a proxy for low skills, but not when measured against low-skilled occupations. It could be that those with low educational attainment truly were in the lowest-wage labor market, in which case their reservation wages would certainly be the lowest. But low education was not statistically significant in either time period. Or it may be that those in occupations with the highest probabilities for long-term unemployment were in industries hit the hardest by the lack of aggregate demand. That is, the recession no doubt began at the top of the financial sector, and then the housing market, but as it rippled through the economy, the effects were the same as they always have been. Demand for goods and services declined, firms laid workers off, thereby resulting in further unemployment as those who had lost jobs now found that they, too, lacked the wherewithal to demand

goods and services. If middle-class jobs have disappeared and what replaces them are lower paying jobs, the effect will nonetheless be a reduction in aggregate demand because workers with lower incomes do have less to spend, which demands that efforts be made to increase effective demand.

### ***Implications for Policy***

If the source of long-term unemployment during the 2007–2010 period was ultimately the depth of the recession, rather than any further structural changes since the last economic crisis, then the key issue is the absence of aggregate demand. A wage policy that bolsters the middle class might be a means by which individuals could be assured that they will continue to have purchasing power. This idea does have some roots in institutional economics. John R. Commons (in Kaufman 2003), in particular, took the view that a decline in prices and wages during recessions and depressions would only aggravate them by reducing purchasing power and, in turn, lead to bankruptcy. For Commons, the answer lay in redistributing income from profits to wages through collective bargaining agreements. Collective bargaining would both prevent over-savings and under-consumption, thereby assisting in maintaining purchasing power and aggregate demand. Although he recognized that unions had defects that might hinder economic efficiency in various ways, he also believed that in most cases the benefits to society would outweigh the costs (Commons in Kaufman 2003). The same argument could easily apply to a more general wage policy, of which unionism is only one component.

From a policy standpoint, the obvious solution would be to increase purchasing power, and one way to do this is through wages. If the issue is aggregate demand, a policy that buttresses the purchasing power of the middle class, such as a wage policy, needs to be considered. Knut Roed (1998) noted that, over the last few decades of the twentieth century, labor markets in most OECD countries had been characterized by rising inequality, and this trend continues. There has been a marked deterioration in the relative position of low-skilled workers throughout the OECD. Wage inequality in the US was due to an uneven wage distribution. The U.S. rate of unemployment, by contrast, remained virtually unchanged at about 5.0 percent. Lately in the US, the poor have become poorer because of lower real wages, while in Europe they have become poorer primarily due to higher long-term unemployment. The wages of those at the bottom have not kept up. Arguably, the problem of insufficient aggregate demand, which may be at the heart of long-term unemployment, is a consequence of rising income inequality. A tighter labor market would, no doubt, push wages up.

One approach might be to simply create jobs. L. Randall Wray (2000) has argued for the government as an employer of last resort (ELR) to those who are “ready, willing, and able” to work, but have not been able to find jobs. ELR would not replace traditional welfare, but would supplement private-sector employment. ELR would not be workfare, and neither would it replace existing social programs. It would not pay starvation wages, nor would it provide union-busting low wage labor. It would, however, eliminate the need for a minimum wage as the ELR wage would

effectively become the effective minimum wage. It could also establish the base package of benefits that private employers would have to supply. Although it could replace unemployment insurance, ELR could also just be added on to give workers who lost their jobs greater choices. The objective here is – through creating jobs for some of the unemployed – to increase aggregate demand through the multiplier, and thereby increase private-sector employment. If this is achieved, it should also result in a reduction of the number of ELR jobs required. What it does not do is concede that increasing aggregate demand by increasing the living standards of those at the bottom must necessarily cause a demand-pull wage price spiral. Rather, with fixed prices, a government's ELR wage would be perfectly stable and would set a benchmark price for labor. Wray did suggest that – if ELR were to be implemented – it is not likely that it will be inflationary in the sense of generating continuing pressure on wages and prices. Because it obligates government to make the initial investment into creating these ELR jobs, it is highly unlikely to garner much political support in today's political climate. Still, the underlying assumption is critical to addressing the issue of long-term unemployment, which is that – more than investment in retraining to meet the needs of an increasing technical skills-biased economy – science and the economy need to return to the basics of macroeconomics and find ways to increase demand for goods and services in the aggregate. This begins with having the wherewithal to do so.

A more deliberate wage policy that would effectively give workers – especially low-wage workers – voice and a degree of monopoly power is perhaps the answer. Roed (1998) almost implied a wage policy when he suggested as an alternative to purely bilateral bargaining, which rarely occurs, a centrally determined wage scale negotiated by a national association of employers and employees. One possibility is to have some type of centrally determined wage scale negotiated by national associations of employees and employers – an approach more likely to be found in Europe than in the US.

If one assumes that the 2007–2010 period merely continued trends that had been occurring since 1991–1994, and that certain jobs that were lost will not return, it becomes necessary to take a more grassroots approach to shoring up aggregate demand. A wage policy that would bolster wages and afford workers greater purchasing power is but one means to do so. In a previous work, I (Levin-Waldman 2011) already demonstrated that a wage policy can have positive welfare effects through wage contour effects for the economy. Constructing ten contours or intervals beginning with the statutory minimum wage and ranging to 25 percent above and so on, median wages will increase in each of the ten contours when there is an increase in the statutory minimum wage. But in years when there is no increase in the minimum wage, the median wage in each contour remains flat. This would suggest broader welfare effects to a wage policy, and because of the contour effects, up to 70 percent of the labor market might see wages increase. Therefore, a wage policy might result in job creation by allowing more people to effectively demand more goods and services (Levin-Waldman 2012). The point is that, in the absence of aggregate demand, institutions which increase demand by bolstering wages – especially those of the middle class – are what is needed to achieve this goal.

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