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ABSTRACT

The Great Recession tested the ability of the "great U.S. jobs machine" to limit the severity of unemployment in a major economic downturn and to restore full employment quickly afterward. In the crisis the American labor market failed to live up to expectations. The level and duration of unemployment increased substantially in the downturn and the growth of jobs was slow and anemic in the recovery. This article documents these failures and their consequences for workers. The U.S. performance in the Great Recession contravenes conventional views of the virtues of market-driven flexibility compared to institution-driven labor adjustments and the notion that weak labor institutions and greater market flexibility offer the best road to economic success in a modern capitalist economy.

Richard B. Freeman
NBER
1050 Massachusetts Avenue
Cambridge, MA 02138
freeman@nber.org

Prior to the Great Recession, economists and policy-makers heralded the "U.S. jobs machine" as the epitome of a successful *flexible* labor market, where flexible refers to the ease with which firms lay off workers and alter pay as economic circumstances change and on the mobility of workers in moving among jobs and in moving between unemployment and employment. The empirical basis for this view was the huge increase in U.S. employment in the 1980s and 1990s,[1] which raised the ratio of employment to the working age in the United States substantially above ratios in other advanced countries. Because Americans worked more hours and took fewer and shorter vacations, the gap between the United States and other advanced countries was even greater in the ratio of annual hours worked to the working age population.[2] The United States also had a relatively low rate of unemployment with exceptionally short spells of joblessness.

America's job creating performance led most analysts to downplay the "skeletons in the closet" of high earnings inequality, stagnant poverty rates, falling collective representation of workers, and reduced pension and health insurance coverage and conclude that U.S. reliance on market forces produced a better functioning labor market than the collective bargaining and government interventions that proliferated throughout Europe. Many policy analysts predicted that European countries could solve their employment problems by reforming their labor markets along U.S. lines, as the following quote from an International Monetary Fund (IMF) analysis shows: "Labor reforms could produce output gains of about 5 percent and a fall in the unemployment rate of about 3 percentage points. …

[1] In the first quarter of 1981 the United States had 91.1 million employees. In the first quarter of 2001 it had 132.5 million employees, based on total nonfarm employees (PAYEMS) data from FRED, Federal Reserve of St. Louis database.

[2] Relatively more Americans than Europeans worked full time, and Americans take shorter vacations and holidays than employees in other advanced countries. Since greater work time means less leisure time, some analysts viewed the U.S. advantage in hours worked as a negative feature of the U.S. system.

Those benefits could be doubled by simultaneous efforts to increase competition in the product market" (IMF 2003, 131).

Academic analysts offered "observations and conjectures on the U.S. employment miracle" (Krueger and Pischke 1997) and argued over whether market flexibility or aggregate demand drove the United States' superior job-creating performance (Schmitt 2002). What a difference the Great Recession has made. Large job losses followed by sluggish employment growth in the recovery have gainsaid the 1990s/early 2000s vision of an exemplary U.S. labor market. If you were to have Googled "great American jobs machine" in January 2013, you would have come up with links to: "The Great American Jobs Machine Is Conking Out"; "Who Broke America's Jobs Machine?" "The Late American Jobs Machine"; and "Is the Great American Jobs Machine Finally Broken?"[3] The main session on labor at the January 2013 American Economic Association asked "What happened to the U.S. employment miracle?"

By contrast, if you were to have Googled "German labor market great recession" in January 2013, you would have come up with links to: "What Explains the German Labor Market Miracle?" "Another Economic Miracle: The German Labor Market and the Great Recession"; and "The German Labour Market Miracle."[4] Has Germany—the 1990s sick economy of Europe with its works councils, apprenticeship system, and social partner bargaining—become the new peak labor market in advanced capitalism? The worm had indeed turned.

This article examines the failure of the U.S. labor market to live up to its billing as a job-creating powerhouse in the 2007–2009 recession and recovery. I compare the pattern of employment in this period to that in previous recessions and that in the Great Depression; document the explosion of

[3] These headlines or titles are from Coy (2008), Kenworthy (2011), Lauffenberg (2011), and Lynn and Longman (2010).

[4] For the German miracle, see Boysen-Hogrefe and Groll (2010), Burda and Hunt (2011), and Rinne and Zimmerman (2012).

long-term joblessness and impacts of unemployment on workers; and contrast the experience of the U.S. labor market with that of more institutionally driven labor markets. I conclude by assaying alternative explanations for why the U.S. labor market failed the Great Recession test.

The Facts Ma'am, Just the Facts

A flexible supply and demand driven labor market should respond quickly to an economic downturn and to recovery from the downturn. To the extent that the market adjusts through employment, changes in employment should have a V-shape: big job losses in a recession followed by big job gains in a recovery.

Figure 1 displays the percent job losses in the recession of the Great Recession and the preceding five business cycles, where percent job loss is the ratio of employment in the recession and recovery to the peak employment before the recession. It is an imperfect measure of employment responses in a business cycle. If peak employment is a temporary upward blip from a steady state of full employment, the statistic overstates the effect of recession in reducing employment.[5] If the work force is growing so that future full employment requires increases in jobs beyond the previous peak, the statistic overstates the movement toward full employment. These shortcomings notwithstanding, the percent job loss statistic gives a powerful visual display of patterns of employment in the Great Recession and earlier business cycles.

The figure shows that employment fell more sharply and for a longer period in the Great Recession than in any previous post–World War II recession. The maximum percent job loss in the Great Recession was 6.3 percent compared to a range of 1.2 percent to 5.2 percet job loss in earlier recessions, with an average loss below 3 percent. The number of months during which employment fell and remained below the previous peak was also much greater in the Great Recession than in previous recessions. Prior to the GR, the 2001 recession had the longest time of declining employment

[5] An alternative would be to take employment over a more extended period as the "norm."

and the slowest recovery of jobs. The reason that 2001 looks so poor in terms of jobs is not that the 2001 recession was severe—to the contrary, it was quite mild—but because GDP grew exceptionally slowly in the recovery. But the GR outdoes the 2001 recession in terms of a sluggish recovery to the peak level of employment. As of this writing, four years after the 2007-2009 recession officially ended, employment remains below its peak level and seems unlikely to recover the peak level for another three to four years. With increases in the working age population, such a nonrobust recovery would leave the U.S. employment population rate on the order of five points below its 2007 level.

The World of Jobless Recoveries

In part, massive job loss in the Great Recession reflects the severity of the downturn. But in part it also reflects a trend of decoupling the response of employment to GDP over the business cycle. In the recessions of the 1950s, 1960s, and 1970s, percentage losses of employment were generally smaller than percentage losses of output, which implies that part of the decline in GDP took the form of temporary falls in productivity per worker.[6] Firms hoarded labor rather than laying workers off because they expected short recessions and wanted experienced workers on board to work in the recovery.[7]

Figures 2A and 2B show quarterly changes in GDP and employment by the number of quarters since the start of a specified recession (rather than months since employment began falling, per Figure 1) (Groshen 2011). Increasingly, falls in output showed up in commensurate or even larger percentage reductions in permanent employment. In the 1981 recession the maximum loss of GDP and the

[6] Output fell more than employment in percentage terms in the 1957, 1969, and 1973 recessions; employment and output fell by about the same percentage amount in the 1953 recession, while employment fell by more than output in the 1960 recession. Averaging the percentage declines over these five recessions, output fell by 2 percent and employment by 1.3 percent. These numbers are based on quarterly figures for changes over the same quarters; see St Louis Fed, FRED database.

[7] The drop in GDP in the 1973–75 recession was 3.2 percent while the drop in employment was 2.7 percent, but employment increased during the first year of the recession so that employment dropped just 1.7 percent.

maximum loss of employment were about 3 percent each, implying that productivity was unchanged over the period. In the 1990 recession, maximum job loss was 1.2 percent while maximum output loss was 1.4 percent—a 0.2 percentage decrease in productivity. In the 2001 recession, output fell by about 0.3 percent while maximum job loss was 1.2 percent—a 0.9 percentage increase in productivity. In the Great Recession, GDP bottomed out with a 4.7 percent loss of output six quarters into the recession while employment bottomed out with a 6.3 percent loss of jobs nine quarters into the recession, producing a 1.6 percentage increase in productivity.

The link between employment and output also changed in the timing of recovery. Employment, which had once moved closely with GDP as a coincident indicator of recessions, increasingly lagged behind GDP in "jobless recoveries." In the 1981 recession, employment recovery lagged GDP recovery by two quarters; in the 1990 recession, employment recovery lagged GDP recovery by four quarters; in the 2001 recession, the fall in GDP was short but, as noted, employment fell long after GDP had recovered.

Examining all the post–World War II recoveries before the Great Recession, Bill Rodgers and I (Freeman and Rodgers 2004, 2005) noted an increasingly weak relation between output growth and employment growth in business cycle recoveries. From the end of the Great Recession through 2012, GDP increased by 7.5 percent while employment increased by 1.2 percent. The result was an extraordinarily low employment-output elasticity of just 0.16. Had employment grown as rapidly as GDP, employment would have reached its pre-recession rate of 137.9 million workers in 2012. At half the growth rate of GDP, employment would reach the peak level by the end of 2013. But with an elasticity of 0.16, it would take two to three years more.[8] Part of the slow jobs recovery reflects the

[8] Based on data from St. Louis Fed, FRED data set GDPC1 and PAYEMS, with PAYEMS adjusted to quarters for comparability with GDP. Recovery began in Q3 2009. Last period of data is for Q3 2012.

severity of the Great Recession and moderate recovery[9] but most of the slow recovery is due to the decoupling of GDP and employment, as shown in Figure 2. With profits high and the stock market rising with GDP recovery, the economic interests of firms and investors diverge from those of unemployed workers, with the result that many policy-makers and analysts shift their attention to reducing fiscal deficits as opposed to restoring full employment.

A Great Depression Perspective

The pattern of change in employment and unemployment in the Great Depression has generated controversy among economic historians (Margo 1993), because of the absence of a Current Population Survey in that period. Even so, the magnitude of change over the entire period tells a clear story about the relationship between job loss and changes in output. Prior to the depression, employment peaked at 46.2 million persons in 1929. Employment fell sharply through 1933 and did not regain its 1929 level until 1940[10]—it took eleven years to regain the employment lost in the depression. Comparing changes in output and employment between 1929 and 1933, real GDP dropped by 31 percent while employment fell by 18 percent[11] for an employment to output elasticity of 0.58. The reason for the low employment-output relation was that firms undertook massive work-sharing to limit the spread of joblessness. According to Neumann, Taylor, and Fishback (2013), "between 50 and 90 percent of

[9] In the Great Recession, GDP took fourteen quarters—three and a half years—to reach its prerecession level. This was far longer than the seven quarters to recovery in the 1981 recession, the five quarters to recovery in the 1990 recession, and the three quarters to recovery in the 2001 recession.

[10] It reached 47.5 million. These data are from D1-10 in the Bicentennial Edition of the U.S. Historical Statistics (U.S. Department of Commerce 1976).

[11] According to the Bicentennial Edition of U.S. Historical Statistics (U.S. Department of Commerce 1976, Table F1-5), current dollar GDP was $103.1 billion in 1929 and $55.6 billion in 1933; constant dollar GDP was (1958$) $203.6 billion and $141.5 billion in 1933.

declines in labor input were accommodated by falling hours" in the depression, in part because the federal government encouraged firms to reduce hours instead of jobs.[12] By contrast, between 2007 and 2009, output declined by 4.7 percent (six quarters into the recession) while employment fell by 6.3 percent (nine quarters into the recession) for an employment to output elasticity of 1.34—over twice the employment-output elasticity in the Great Depression.[13]

Employment in the recovery phase also followed a different pattern in the depression than in the Great Recession. In the 1933–37 recovery real GDP increased by 44 percent and employment increased by 21 percent, giving an employment to output elasticity of 0.48—not markedly different from the employment to output elasticity when the economy contracted from 1929 to 1933. By contrast, the comparable employment to output elasticity in the Great Recession was a minuscule 0.16, which makes the Great Recession the most jobless of jobless recoveries. That the job market did more to save jobs as output fell and to create jobs as output expanded in the Great Depression than in the Great Recession highlights the changed relation between output and employment in the United States between the two economic disasters.

Long-term Unemployment

For much of the post–World War II period, the United States had modestly higher rates of unemployment than other advanced countries. In the late 1980s through 2007 the United States had modestly lower rates of unemployment than many other advanced countries. But the big difference

[12] Neumann, Taylor, and Fishback (2013). President Hoover created work-sharing committees of industrialists to encourage substitution of cuts in hours for cuts in jobs. President Roosevelt's President's Reemployment Agreement called for sharp reductions in weekly hours.

[13] Taking the change in employment over the same six quarters during which output fell gives a drop of employment of 5.0% for an employment elasticity of 1.06, more than twice that in the decline in the Depression.

between unemployment in the United States and in other advanced countries in both periods of time was that the United States had a much lower incidence of long-term unemployment. In 2000, for example, 11.4 percent of unemployed Americans were unemployed for six months or more (the usual measure of long-term unemployment) and 6 percent were unemployed for 12 months or more. By contrast, in the OECD as a whole 46 percent of unemployed workers were out of work for six months and 30.8 percent were out of work for more than a year. Over half of the unemployed persons in Germany, Ireland, Italy, Greece, and Belgium were unemployed for more than a year.[14] Because long spells of joblessness disconnect people from the job market and depreciate their work skills, which reduces their chances of getting employment in the future,[15] long spells are more harmful to workers and the economy than are short spells.

Underlying the United States' low incidence of long-term unemployment are exceptionally high rates of transition from unemployment to employment and from employment to unemployment.[16] Comparing transition into and out of unemployment among OECD countries for the period through

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[14] OECD Employment Outlook 2012, table H, p 244

[15] Kroft, Lange, Notowidigdo (2013) report that firms are likely to respond to the resumes of job applicants who have been jobless for longer periods of time than to other job applicants.

[16] There are two ways to estimate these rates. One is to follow a sample of individuals in a panel dataset as they move between employment and unemployment or some other form of nonemployment. Another exploits cross-sectional data on the number of persons reporting durations of unemployment from one month to the next (Shimer 2007). Estimates of the rates differ among studies not only by whether they use longitudinal data for individuals or cross-sectional data for groups over time but also for technical reasons such as how they handle measurement error in the duration statistics and how they treat being out of the labor force. But all show a pattern of much greater transition of U.S. workers into and out of unemployment and employment. See Elsby, Hobijn, and Sahin (2008) for a discuss of various studies. Hobijn and Sahin (2007) contrast job finding rates among OECD countries before the Great Recession. Elsby, Hobijn and Sahin (2010) provide detailed analysis of Great Recession experience.

2007, Elsby, Hobijn and Sahin (2008, Table 2) estimate that the probability of leaving unemployment within one month was 57.5 percent for Americans compared to 6 percent for Germans—a near tenfold difference. Over the same period, Americans were also more likely to become unemployed than persons in other advanced countries, with a probability of entering unemployment of 3.6 percent for Americans compared to 0.5 percent for Germans—a seven-fold difference. Americans also tend to move from one job to another without any intervening spell of joblessness more frequently than workers in other countries. Connections between workers and firms in the United States have more the flavor of a dating game, with workers and firms changing partners frequently, whereas connections between workers and firms in most advanced countries have more the flavor of a stable marriage. Greater outflows from unemployment and greater inflows into unemployment in the United States imply that at any given rate of unemployment the United States invariably has shorter spells of joblessness.[17]

As Figure 3 shows, long-term unemployment in the United States exploded in the Great Recession. In April 2010, the number unemployed for more than 26 weeks exceeded 7 million, which was approximately the total number unemployed before the recession. So many Americans were jobless for so long that the BLS changed the survey question it uses to measure long-term unemployment to allow respondents to report more than two years of joblessness.[18] In December 2012,

[17] Let "a" be the rate at which employed workers lose their job and "b" be the rate at which unemployed workers find jobs in a given period of time. If "E" is the number of employed workers, the flow of workers out of employment will be "aE". If "U" is the number of unemployed workers, the flow of unemployed workers into employment will be "bU". In equilibrium the two flows will equal so that aE = bU. Defining the rate of unemployment as U/(U+E) and substituting gives the equilibrium rate of unemployment as a/(a+b) – the rate of flow of workers into unemployment divided by the sum of the inflow rate and the outflow rate. The unemployment rate will be the same for proportionate changes in a and b. But the economy with higher inflows and outflows will have shorter spells of unemployment and employment.

[18] "Effective with data for January 2011, the Current Population Survey (CPS) was modified to allow respondents to

two and half years into the recovery, 4.8 million Americans were unemployed for more than 26 weeks—39.1 percent of the unemployed. Contributing to this remarkable increase was the preference of employers for hiring workers with short spells of joblessness rather than those with long spells, whose work skills may have depreciated during their lengthy period without gainful employment. Supporting the notion that long spells of joblessness can stigmatize workers, Rand Ghayad found that firms rarely contact workers for job interviews when they have been out of work for over six months (Collette, 2012).

The recession reduced the difference in long-term joblessness between the United States and other countries. In 2011 43.7 percent of unemployed Americans were unemployed for more than six months, and 31.3 percent were unemployed for more than a year—figures only slightly below the OECD average of 48.4 percent of the unemployed out of work for six months and 33.6 percent out of work for more than a year.[19] In 2006 the incidence of long-term unemployment in the United States was markedly lower: 17.6 percent of the unemployed were unemployed for six months or more, and 10 percent were unemployed for more than a year, while the OECD average was only a bit below its 2011 rate.[20] The Great Recession essentially tripled the incidence of long-term unemployment in the United States while having little impact on the incidence of unemployment in other OECD countries.

Some analysts worry that as a result the United States will develop a large group of semi-permanently unemployed workers with deteriorating skills and weak attachment to the work force,

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report longer durations of unemployment. Prior to that time, the CPS accepted unemployment durations of up to 2 years; any response of unemployment duration greater than this was entered as 2 years." See http://www.bls.gov/cps/duration.htm.

[19] See OECD (2012, 244).

[20] In 2006 in the OECD as a whole, 45.9 percent of the unemployed were unemployed for six months and 32.2 percent were unemployed for more than a year. See OECD (2007, 265).

much like Europe had in the 1980s and 1990s (O'Brien 2012; Hornstein and Lubik 2010). Others believe that the recovery will proceed sufficiently well to prevent such an outcome (Elsby et al. 2011).

Because the increased duration of unemployment does not fully capture the jobless problem among American workers, I believe that the pessimists are closer to the truth. The reason being that in the recession many Americans gave up trying to find work and thus are not counted as unemployed even though in a better economy they will seek and return to work. To measure the importance of leaving the labor force, I decomposed the log change in the employment to population rate from January 2007 to January 2012 into two parts: the part due to the log change in the ratio of labor to population and the part due to change in the proportion of the labor force with jobs.[21] I found that more than half of the 7.6 percent drop in the employment-population rate (from 0.633 to 0.585) was in the form of workers leaving the labor force.[22]

Costs of Job Loss

Long-term unemployment devastates economic well-being—earnings, consumption, savings, ability to pay debts, family incomes, poverty—and has adverse knock-on effects on other dimensions of life, from mental health to happiness and life satisfaction to family relations, and even mortality.

Most workers displaced from their jobs due to the economic circumstances of their firm or company[23] eventually find new work, but they usually have to take 10 to 20 percent pay cut in their

[21] Let E/P = L/P(1-u), where E = employment, P = adult population; L = labor force; u = unemployment rate (L-E)/L. Then ln E/P = ln L/P + ln (1-u) so that E/P' = L/P' + (1-u)'.

[22] Specifically, from January 2007 to December 2012, the employment to population rate fell from 63.3 to 58.6 for a 7.4 percent drop. Over the same period, the labor participation rate fell from 66.4 to 63.6, for a 4.2 percent drop. Thus, 57 percent (= 4.2/7.4) of the fall in the employment population rate was due to persons giving up their search for jobs and leaving the work force.

[23] Displaced workers are those who lost or left jobs because their plant or company closed or moved, there was insufficient work for them to do, or their position or shift was abolished. They are part of the total number of

post-displacement job, which reduces their income for the rest of their working lives. Sullivan and von Wachter (2009) estimate that workers displaced in the 1980s recession suffered earnings reductions on the order of 30 percent in the first year they worked after layoff. Analyzing the Bureau of Labor Statistic's Displaced Workers Survey, Farber (2011) found that the rate of job loss in 2007 to 2009 was the highest since the BLS asked workers about displacement in the 1980s, that workers displaced in the Great Recession had significantly lower rates of reemployment than workers displaced in earlier recessions, and that the displaced suffered large declines in earnings, due to one in five moving from full-time to part-time work.

Young persons who enter the job market in recessions suffer not only from high levels of unemployment (O'Higgens 2012; Bell and Blanchflower 2010) but also from lower lifetime income compared to young persons who enter the market under better conditions. One reason is that it takes longer for recession-era cohorts to find jobs. Another is that many end up with lower quality jobs at lower pay than they would have found in a good economy. Ensuing wage increases with experience are insufficient for them to catch up with cohorts that had better initial experiences. The result is lower incomes over the lifetime (Kahn 2010).

Finally, the Great Recession was accompanied by huge losses in family income and an increased rate of poverty. Between 2007 and 2011, median family income dropped by 8.2 percent. Part of the decline resulted from the recession-induced increase in unemployment and in part-time

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unemployed persons, which also consists of workers who voluntarily left their job and are looking for another one, who were terminated for cause, or who entered the job market from out of the labor force. The Bureau of Labor Statistics sponsors a supplement to the Current Population Survey regularly to identify displaced workers. Its surveys for 2007–2009 and 2009–2011 cover the Great Recession period. See Bureau of Labor Statistics (2010, 2012). During the Great Recession, the rate of unemployment among displaced workers at the time of the Displaced Worker Survey was roughly twice the rate in the 1990s, implying that they made a larger share of the unemployed. See Farber (2011, Figure 6).

work, but part also reflected declines in the real median earnings of full-time workers. Among men employed full time, real median earnings dropped by 1.5 percent between 2007 and 2011, which put 2011 real earnings below the median real earnings of full-time men in 1972. Among full-time women, real median earnings dropped by 4.2 percent between 2007 and 2011, but full-time women still earned 31 percent more than in 1972. The rate of poverty increased from 12.5 percent in 2007 to 15 percent in 2011.[24]

Unemployment also has destructive effects on the lives of people beyond their income level. On the basis of longitudinal evidence that measures mental health as people shift labor market status, the OECD reports that "mental health suffers when individuals move from employment to unemployment or inactivity" and conversely that gaining a job reduces mental health distress (OECD 2008, 205). Eriksson et al (2010) report that in Denmark "experiences of long- and medium-term unemployment are followed by an increased probability of the individual being admitted for the first time to a psychiatric hospital (p. 56). Reviewing 118 studies on the effects of joblessness, Goldman-Mellor, Saxton, and Catalano (2010) report that persons who lose their jobs involuntarily have increased risk of depression, alcoholism, committing violent acts (including spouse and child abuse), and suicide "independent of hypothesized mediators such as financial insecurity and marital problems" (p. 24). Consistent with this, unemployment reduces happiness and life satisfaction to a greater extent than do reductions in income and has impacts comparable to major life crises such as divorce or loss of a loved one.[25] Joblessness can even affect mortality. Examining older men who lost their jobs in

[24] These data are from DeNavas-Walt et al. (2012). Family incomes from table A-2; earnings of full-time workers from Table A-4; poverty rates from table B-1.

[25] Ohtake (2012) provides a useful review of past studies. Winkelman and Winkelman (1995) found that unemployed men in Germany were less likely to have high life satisfaction than employed men; Blanchflower and Oswald (2004) find that unemployment is associated with lower life satisfaction in the United States and the UK. The biggest loss of subjective

Pennsylvania in the 1980s recession, Sullivan and von Wachter (2009) estimate that the job loss reduced life expectancy by 1 to 1.5 years compared to similar workers who did not lose their jobs. Studies also find that unemployment in a family adversely affects the school performance of children and the birth-weight of newborns (von Wachter 2011).

Labor markets Over There

All countries rely on a mixture of the market interaction of supply and demand and labor institutions to determine employment, wages, and conditions of work. Most advanced countries rely more on institutions such as collective bargaining, employment protection policies for workers, and substantial social insurance programs for job-losers than does the United States, which depends more on market flexibility. In the Great Recession, the United States relied almost exclusively on a macroeconomic stimulus, the bailout of big banks and Federal Reserve accommodating monetary policy to rejuvenate the economy. Most other OECD countries added to their macroeconomic stimulus packages emergency employment policies to induce firms to maintain employment as output fell.

Differences in practices and policies produced different employment performances in the recession and recovery, in particular between the United States and other major OECD economies, such as Germany and Japan. By the fourth quarter of 2010, for example, both the United States and Germany had recovered their pre-recession levels of GDP while Japan's GDP was still 1.1 percent lower than its pre-recession level. But the United States had a 5.9 percent job loss compared to pre-recession employment while Germany had a 1.6 percent job gain. And despite its poor performance on the output side, Japan had a smaller percent job loss than the United States (–1.1 percent compared to –5.9 percent).

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well-being is right after the worker is displaced from their job; the effects weaken over time as the worker adjusts to his/her new situation (Lucas et al. 2004). Clark and Oswald (1994) give one of the earliest studies linking unhappiness to unemployment.

Figure 4 shows the relation between the average annual rate of changes in employment and in real GDP in OECD countries from the outset of the recession in 2007 through the recovery in 2011. Countries with greater GDP growth had greater job growth, with an estimated elasticity of employment to output across countries of 0.80. In fourteen of the countries, GDP and employment increased or decreased in tandem, but in five of the countries, including the United States, GDP and employment moved in opposite directions. Taking the change in GDP as exogenous to the labor market, country differences in GDP explain just about half of country differences in changes in employment. Much of the remaining differences appear to reflect the different ways country labor policies and practices responded to the recession. On the basis of econometric analysis of cross-country time series data, the OECD (2012) concluded that "differences in policies and institutions can give rise to large cross-country differences in the overall impact of economic downturns on unemployment, labour income, and earnings inequality … [and added that] firm-level data suggests that policies and institutions accounted for a substantial part of the differences in the aggregate labour market impact of the recent economic downturn" (p. 54).

Figure 5 provides what I view as the most compelling evidence of the different responses of labor markets to declines in output in the Great Recession. The figure displays percent changes in output, total hours worked, and productivity (output per hour worked) in manufacturing in 2008–2009 when the recession hit most countries heavily. Output and hours worked declined in all countries but at strikingly different rates. In most countries total hours worked fell less rapidly than output, as firms buffered labor from the fall in output. The biggest exception is the United States, where firms amplified the decline in output by reducing hours worked even more, resulting in an increase in hourly productivity by 7.7 percent.

These differences are traceable to institutions and policies. Some countries developed new short term jobs programs. Some subsidized employment by paying firms the unemployment insurance

that would have gone to laid-off workers to keep the workers on the job. Many countries encouraged firms to undertake work-sharing programs that reduced hours worked. Germany introduced a short-term work program and work allowance that subsidized part of the labor cost of workers in firms whose earnings had decreased by 10 percent or more on the grounds that they were likely to contract employment.[26] Austria (not included in the figure because it is too small for the US BLS to calculate manufacturing productivity) paid employers the unemployment benefits that would have gone to laid-off workers and covered worker sickness and retirement insurance if firms kept them on in short-term work. Austria added 15 percent in its subsidy to firms that trained the workers. The Netherlands paid 70 percent of the wages for the non–work hours of employees that firms kept "on the job."

In a global economy policies that sacrifice productivity for jobs in a crisis are unlikely to succeed for very long. Either wages or living standards will fall commensurately with the reduced productivity, or firms will recover productivity rapidly as the economy improves. A key test of job-saving policies is the extent to which productivity bounces back with economic expansion. Most of the countries that took productivity hits to save jobs in the recession raised productivity rapidly in the recovery. As a good case in point, after taking a drop of 16.7 percent in hourly productivity from 2007to 2009 to save jobs, Swedish manufacturers increased productivity by 22.7 percent between 2009 and 2011.[27] Germany's policy-induced increase in employment in the Great Recession and economic growth afterward underlie the view that its social partner bargaining, internal firm flexibility, and labor hoarding supported by governmental interventions made it the labor market miracle of the Great Recession, per the comments cited at the outset.

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[26] The German policy was to pay up to 67 percent of the difference between the wage paid to the worker and the lowest wage and 50 percent of social security contributions for non–work hours.

[27] Calculated from U.S. Bureau of Labor Statistics (2011), Table 1. Output per hour in manufacturing, 19 countries, 1950-2011. The figures for Sweden are 2007, 143.7; 2009, 121.2' and 2011, 148.7.

Why did Flexibility "U.S.-style" Fail?

The big question that the poor jobs performance of the United States in the Great Recession and recovery poses for labor market analysts and policy-makers is why it failed to be the job-creating powerhouse that most expected from its flexible labor market.

One possible reason is that developments unique to the United States in the late 2000s created adjustment problems beyond the business cycle. These developments include: structural shifts in demand for labor among industries, occupations, or regions due to globalization associated with increased trade with low wage countries and off-shoring; deployment of new job-saving technologies; and the contraction of public sector employment in the recovery. Save for the contraction of public sector jobs, there is little empirical support for a unique development explanation of U.S. performance. Because the public sector employs around 14 percent of U.S. workers, however, its contraction had a moderate rather than determinative effect in weakening the jobs recovery.

Two studies have tested the notion that increased unemployment was due to structural shifts. Lazear and Spletzer (2012, abstract) concluded that "Neither industrial nor demographic shifts nor a mismatch of skills with job vacancies is behind the increased rates of unemployment. The patterns [are] … consistent with unemployment being caused by cyclic phenomena. Rothstein (2012) also found little support for a structuralist view of the labor market problems in the Great Recession. This does not mean that trade and technology were not important factors in the labor market. Autor, Dorn, and Hanson (2012) show that trade with developing countries, particularly China, had sizable impacts on local labor markets, which suggest substantial pressure on the national labor market as well; but these pressures are more long term than cyclic. Similarly, Brynjolfsson and McAfee (2011) argue that advancing digital technology is obsolescing people at a speed that the labor market cannot easily deal with, but this also is a long-term rather than cyclic issue. Moreover, since increased trade with low wage developing countries and new digital technologies affect all advanced countries, it is difficult to

explain the United States' weaker job performance relative to others by these factors.

The recession-induced crisis in state and local finances that led to reductions in public sector employment in the recovery offers a unique Great Recession contributor to the weak U.S. jobs recovery. In recoveries from the 1981, 1990, and 2001 recessions and in most other post–World War II recessions, public sector employment increased along with private sector employment. By contrast, public sector employment fell in the recovery from the Great Recession (Bivens and Shierholz 2012; Perr 2013). From 2010 to 2012 when total employment in the Household Survey increased by 3.41 million from 139.064 million to 142.469 million, government wage and salary employment dropped by 0.64 million. Had government employment remained steady over this period, total employment would have been 0.45 percent higher[28]. But because the private sector employs the bulk of the U.S. work force, the main reason employment remained below its pre-recession peak through 2012 was the sluggish expansion of the private sector, not the loss of government jobs.[29]

A second possible explanation for the United States' sluggish jobs performance is that wages did not adjust flexibly to the negative output shock. Declines in product demand that reduce demand for labor should produce downward pressure on wages that preserve employment at individual firms (albeit with debatable consequences for aggregate demand and employment). On the other side, however, firms and unions in institution-driven labor markets have the potential to coordinate wage adjustments in the face of economic shocks through national collective agreements, while also taking into account the aggregate consequences of wage reductions. Cross-country data on changes in

[28] Household Figures available from the BLS at ftp://ftp.bls.gov/pub/special.requests/lf/aa2010/pdf/cpsaat15.pdf and http://www.bls.gov/cps/cpsaat15.pdf

[29] See http://www.bls.gov/webapps/legacy/cpsatab8.htm; http://www.bls.gov/webapps/legacy/cpsatab1.htm. Comparison of 2012 employment to 2007 employment of all employees and of government wage and salary workers shows that 18 percent of the gap between the 2007 employment and 2012 employment is attributable to the drop in government wage and salary workers.

earnings economy wide and in manufacturing provide little support for the notion that the United States failed on the wage flexibility front. From 2007 to 2011, when U.S. GDP increased while employment fell, OECD data show that average real annual wages per full-time equivalent employee in the United States increased by 0.3 percent, which gave the United States the fourth smallest increase in this measure of pay among nineteen OECD countries (2012, Table J). If flexibility means modest increases to maintain or create jobs, the U.S. job market was flexible on the wage side. Data on changes in hourly wages and compensation in manufacturing tell a similar story.

Reviewing studies of how businesses treat layoffs in the United States, Sucher and Winterberg (2013) report that layoffs have gone from a last resort for troubled firms to accepted practice in the managers' toolkit of profit maximizing behavior. This suggests a third possible explanation: that the weak employment performance of the United States in the recession reflects a broad change in business policy toward layoffs; but this leaves open the question as to what factors led managements in the Untied States, but not in other countries, to choose a "lay off workers first and ask questions later" response to economic shocks. Perhaps the quick trigger on layoffs in the recession and slow hiring in the recovery reflects the management responses to the increased share of executive pay in stock options and stock grants and Wall Street pressures for quarterly profits. Perhaps it reflects the weaker state of unions in the United States than in other advanced countries and the unwillingness of the U.S. government to make employment policy part of the national economic strategy. Peter Cappelli (2012) has suggested that management does not properly measure the benefits and costs of filling jobs and offers no powerful reason for why practices have changed over time or differ between other advanced countries. The virtue of this line of thinking is that it directs attention at the micro-incentives that may lead management to choose different employment policies, beyond rational optimizing profit maximization.

Viewed from a different perspective, the failure of the U.S. labor market to live up to billing as

the great job machine in the Great Recession may rest more on analysts having a narrow view of the margins on which flexibility operates in different economic circumstances and on what any flexible labor market can do in an aggregate economic crisis. When markets are near equilibrium clearing, flexibility in hiring, firing, and wage-setting of the U.S. type can have major virtues in allocating and motivating labor. But there is neither powerful theory nor evidence that those are the best margins of adjustment for dealing with an economic crisis that leads markets to diverge from full employment equilibrium. It is possible, as the advocates of the German-style of labor response believe, that an institutional structure that allows for more coordinated responses may work better in a crisis. Perhaps the most sensible view is that different economic situations require different responses, some of which are more likely to come from a U.S.-style flexible system, but some of which are more likely to come from more institutional systems. The notion that any labor market system, flexible ala the United States or institutionally driven ala advanced Europe, is ideal for all problems is probably unrealistic in the complex economic world in which we live and probably in any theory that deals honestly with those complexities.

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l Job Loss in Recessions and Recovery in US, by Recession

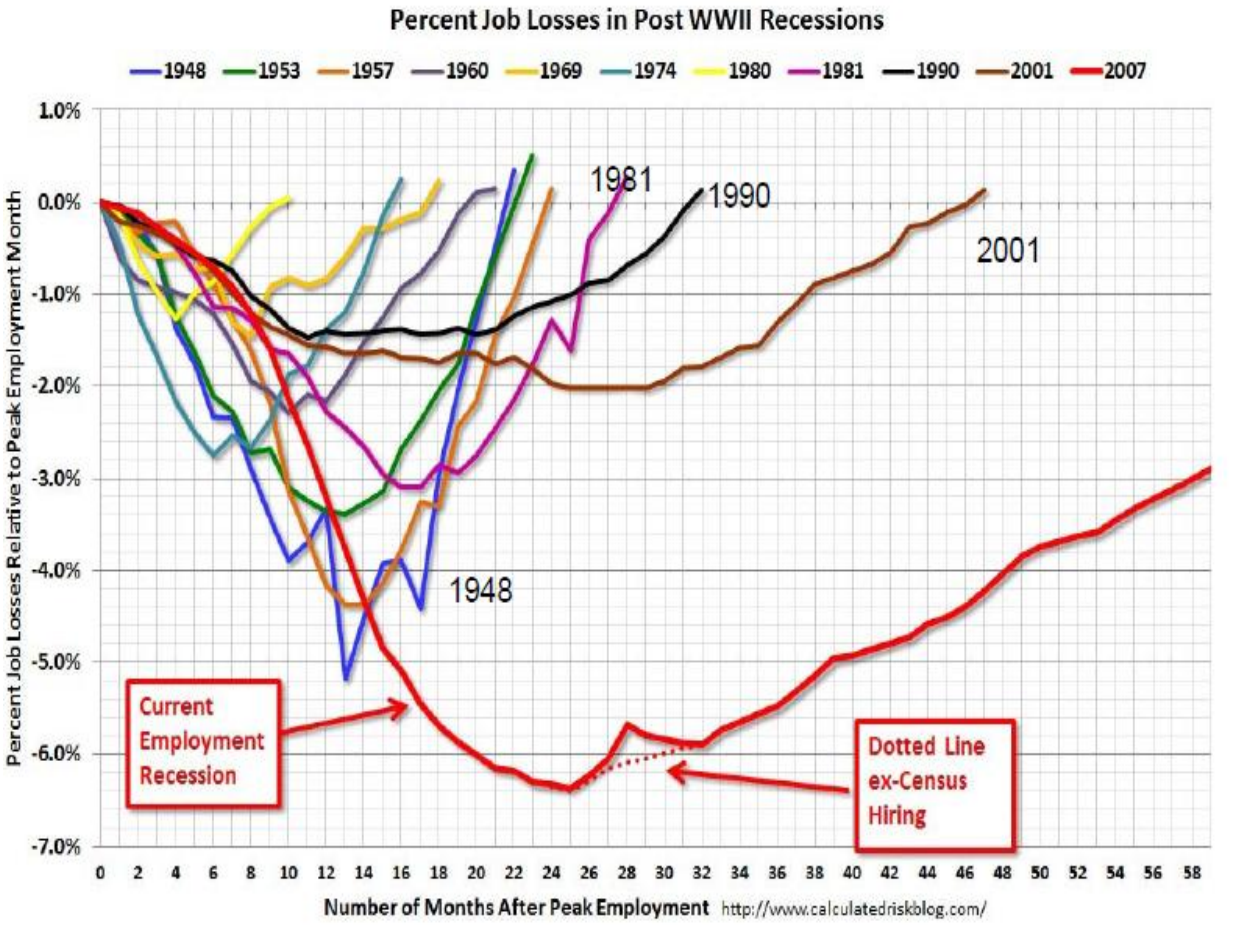
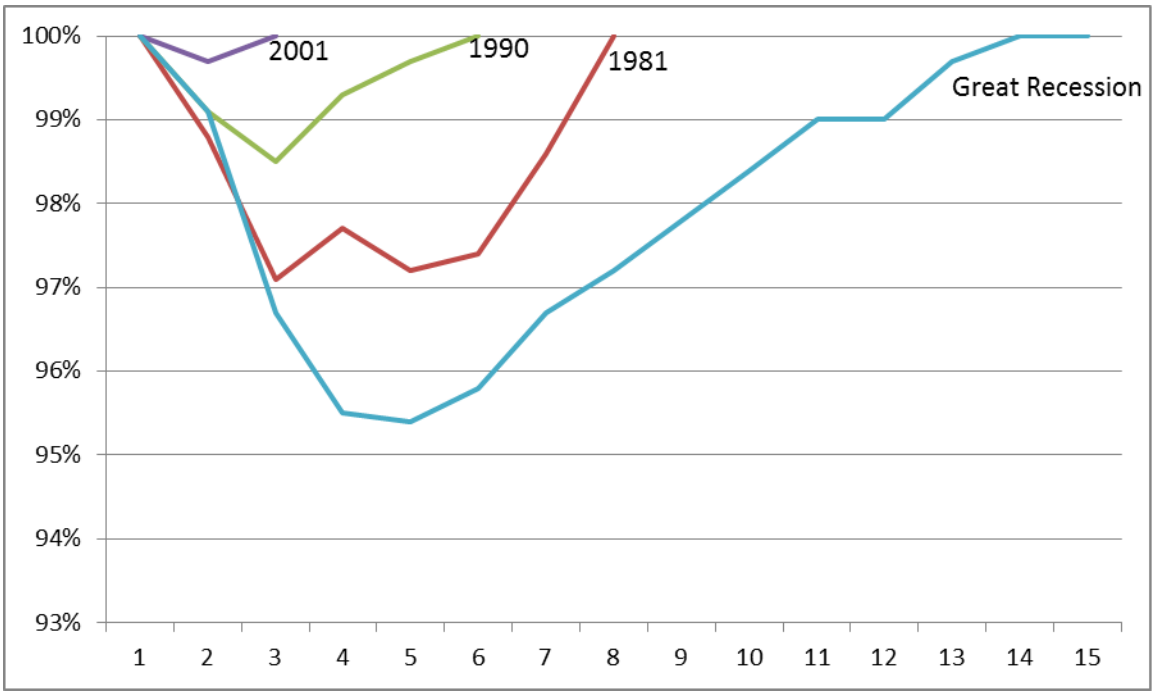
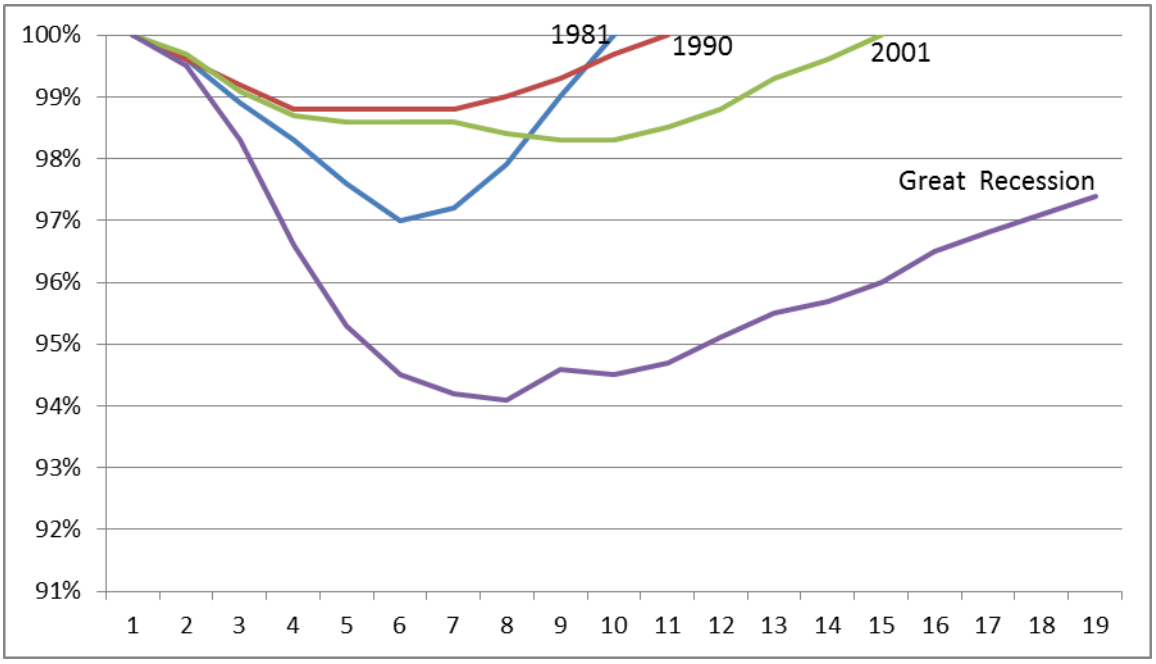


Figure 2a: Ratio of GDP to GDP before Recessions



Source: Federal Reserve Bank of St. Louis, Federal Reserve Economic Data, FRED Graph Observations; GDP is GDPC1. Available at: http://research.stlouisfed.org/fred

Figure 2b: Ratio of Employment to Employment before Recessions



SOURCE: Federal Reserve Bank of St. Louis, Federal Reserve Economic Data, FRED Graph Observations; Employment is PAYEMS. Available at: http://research.stlouisfed.org/fred2.

Exhibit 3: The number of Americans with long term unemployment, 1969-2013

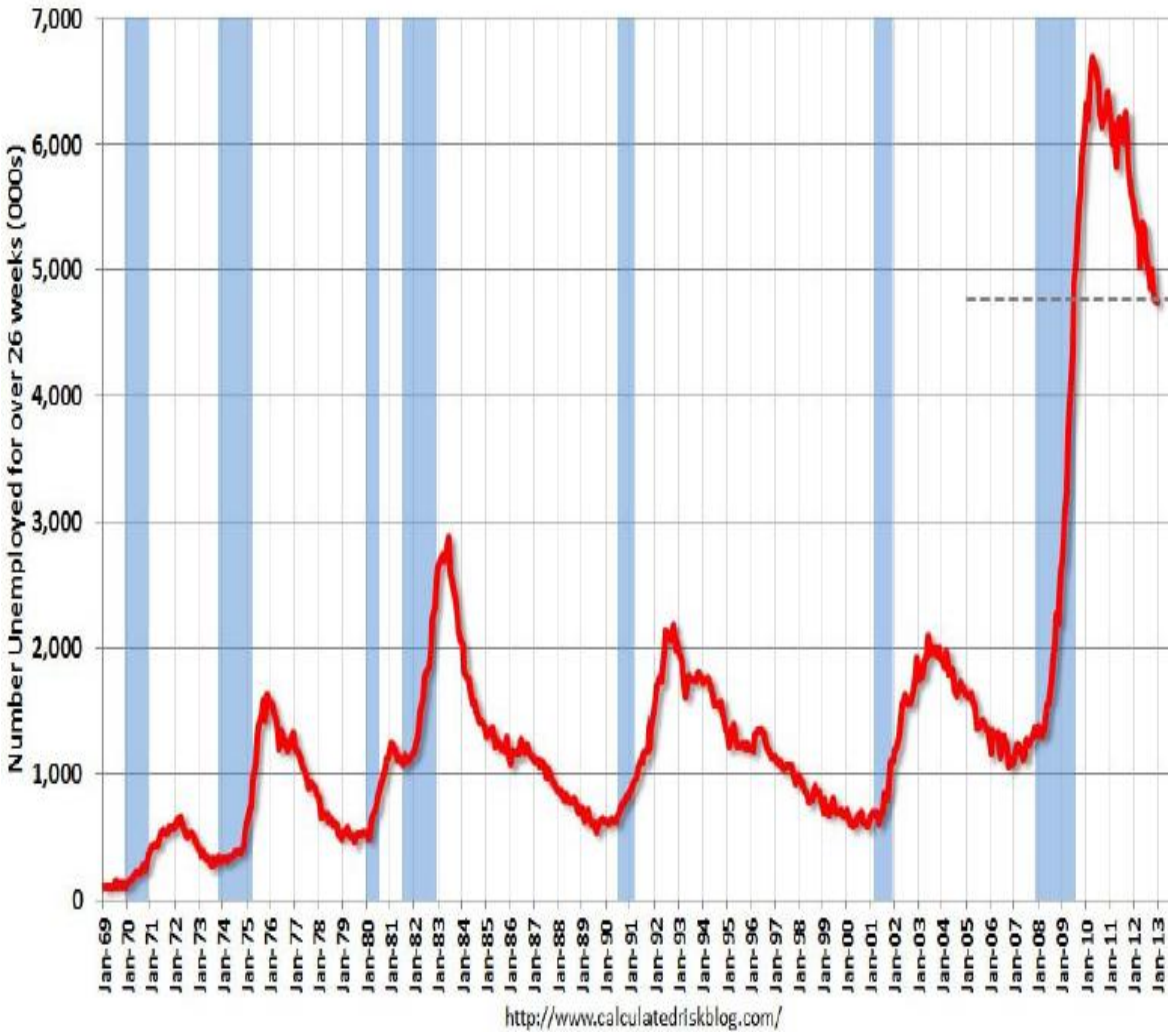
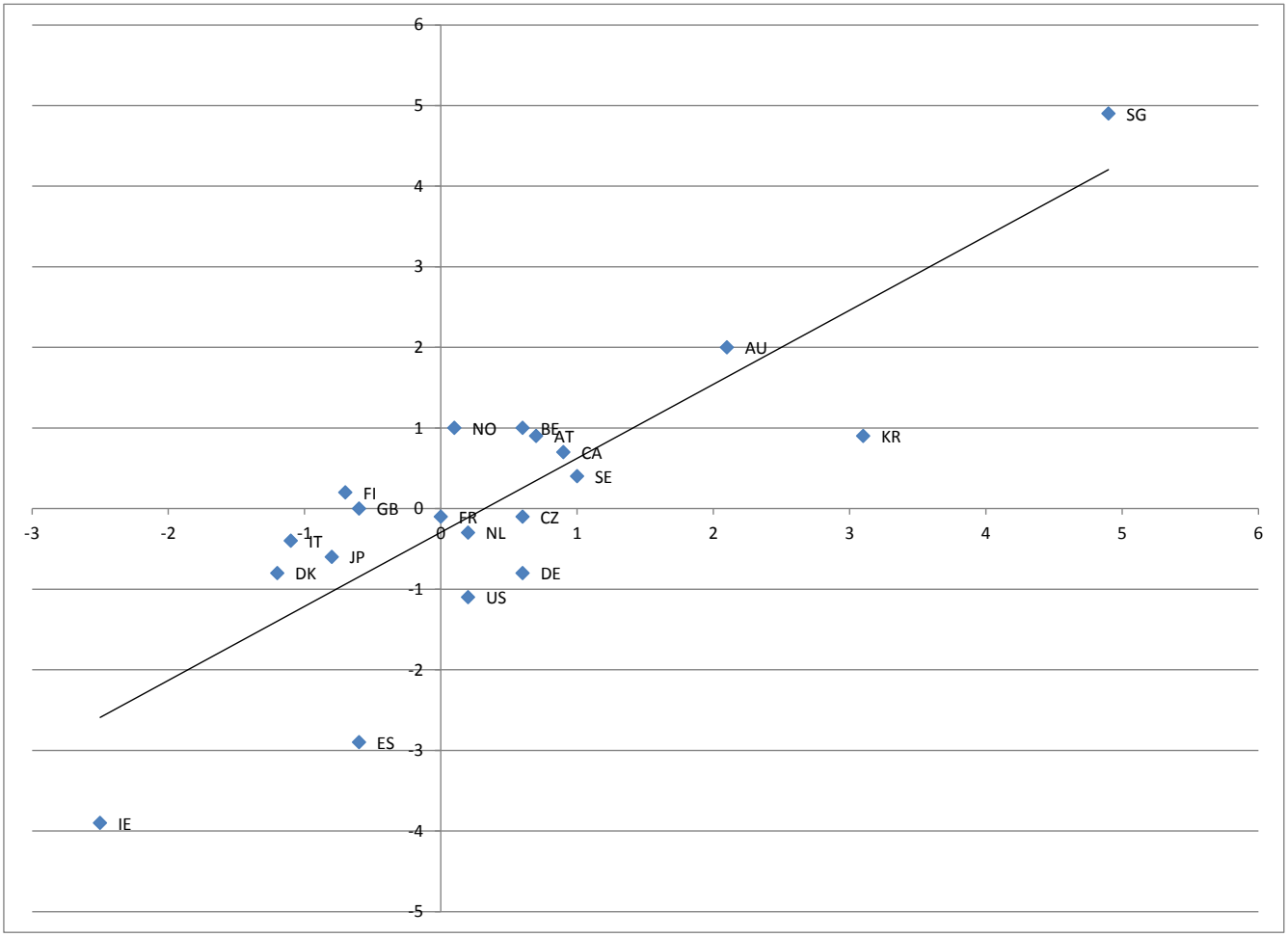


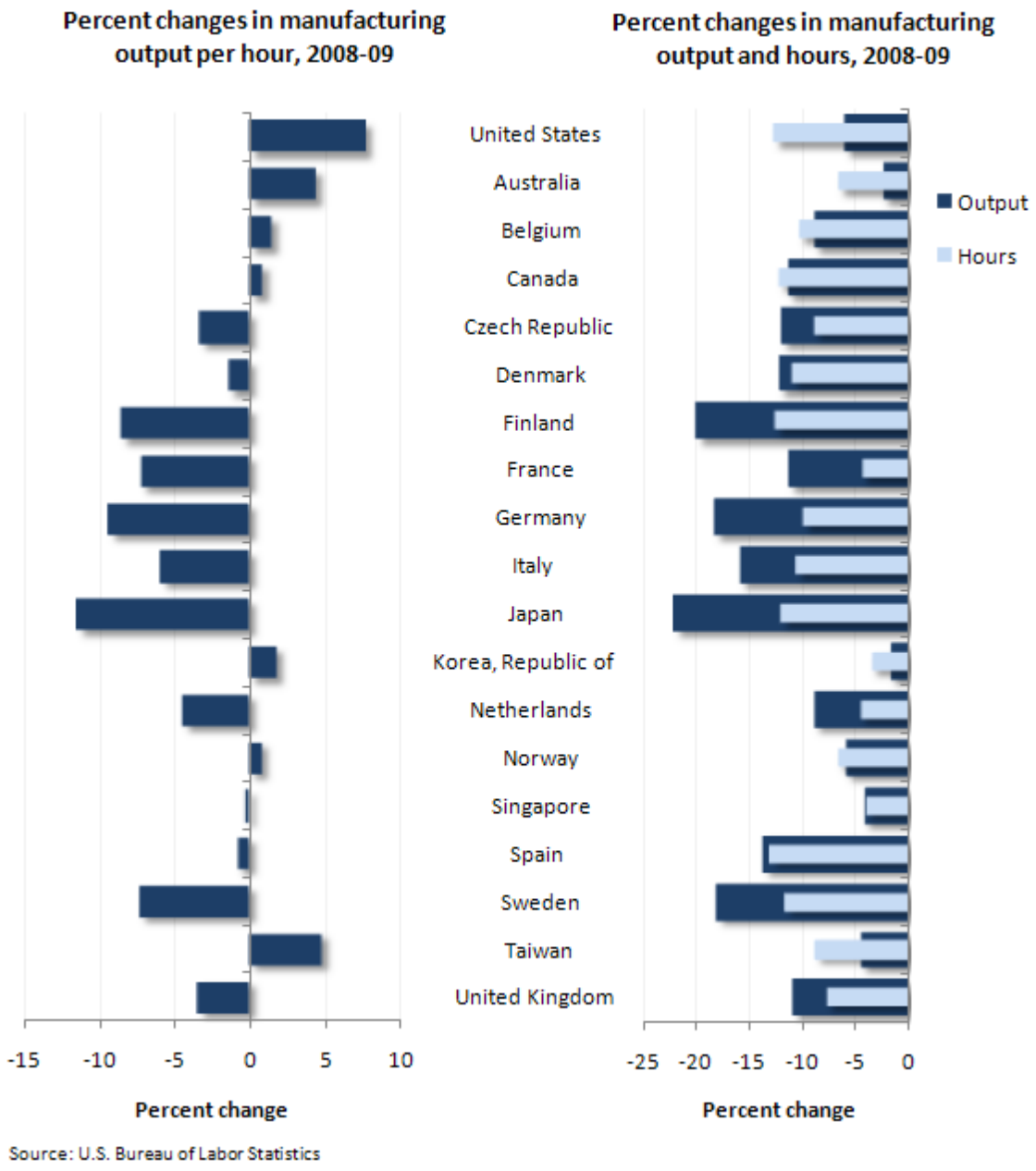
Figure 4: Average Annual Rates of Change of Real GDP and Total Employment in OECD Countries, 2007-2011



NOTE: Empl = –0.315 + 0.800*GDP, Adjusted R-Squared 0.49. I have left Singapore out of this calculation. With Singapore included the coefficient on the annual change in GDP increased to 0.92 and the R-squared improves to 0.69. Singapore is not part of the OECD.

SOURCE: U.S. Bureau of Labor Statistics, Division of International Labor Comparisons, International Comparisons of GDP per Capita and per Hour, 1960–2011 November 7, 2012, Table 4B and Table 6B.

Exhibit 5: Percent Changes in Manufacturing Output Per Hour, Total Hours Worked, and Output, US and other Countries, 2008-2009, at peak of Great Recession



SOURCE: Available at: http://www.reliableplant.com/Read/28037/Manufacturing-productivity-by-country, tabulated from BLS International Comparisons of Manufacturing Producticity and Unit Labor Cost Trends, 2009.