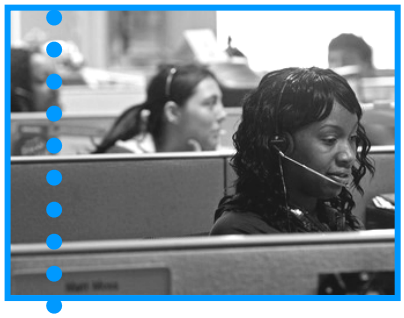

CREATING DECENT JOBS IN THE UNITED STATES:

The Role of Labor Unions and Collective Bargaining

JEANNETTE WICKS-LIM

Political Economy Research Institute

University of Massachusetts, Amherst

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SUMMARY

This study finds that, absent structural changes to the U.S. labor market, the U.S. economy will be no better at creating decent jobs in 2016 than it was in 2006. A decent job is one that pays at least enough to provide a small family with a safe, healthy, but modest standard of living. This unfavorable projection contradicts a popular assumption that the jobs of the future will necessarily provide workers with improved opportunities to raise their living standards.

This study demonstrates that labor unions represent one important structural change that would improve the ability of the U.S. economy to create decent jobs. Labor unions equip workers with the bargaining power they need to negotiate significant improvements to their working conditions. At the same time, no strong evidence exists that the better pay that unions can achieve for workers will raise business costs excessively and thereby reduces the availability of jobs.

A significant rise in the proportion of workers who bargain collectively over their working conditions could meaningfully raise the number of decent job offered in the U.S. Accordingly, to promote the creation of decent jobs in the U.S. policies that make it easier for workers to join unions should be pursued. An important example is the Employee Free Choice Act (EFCA) currently under debate in the U.S. Congress. As of August 2009, the EFCA contains measures that protect workers from employers' efforts to discourage them from bargaining collectively.

Main findings:

- Based on current labor market conditions, the proportion of decent jobs in the U.S. economy will rise only slightly from 34.8 percent in 2006 to 35.2 percent by 2016. A decent job is defined two ways: one that pays just over 200 percent of the poverty line for a small family, or $17.00 per hour, and provides health insurance and retirement benefits; or one that pays at least $22.00 per hour without benefits.
- Labor unions substantially improve the pay and benefits in today's occupations, including those that are projected to have the largest projected employment growth through 2016. A 10 percent rise in union representation would add about 2.5 million more decent jobs to the U.S. economy in 2016.
- The current state of knowledge on the economic impact of unions provides no strong evidence that a tradeoff exists between high rates of union representation and employment opportunities, i.e, that high unionization rates lead to higher rates of unemployment.

Barring efforts by workers to change the conditions under which they work, 65 percent of U.S. workers will not have a decent job in 2016. This finding is based on analysis of Department of Labor projections that pre-date today's recession. Thus in the absence of any structural changes this report reveals a long term problem in the economy that will continue well after the recession ends. Legislation such as EFCA could promote a more favorable projection for decent job offerings in the U.S. by encouraging more workers to bargain collectively over their working conditions.

INTRODUCTION

According to recent data published by the federal government's Bureau of Labor Statistics (BLS), absent structural changes to the U.S. labor market, the U.S. economy will be no better at producing decent jobs in 2016 than it was in 2006. In this report, a decent job is defined in two ways, one that pays just over 200 percent above the poverty line for a small family, or $17.00 per hour, and provides health insurance and retirement benefits; or one that pays $22.00 per hour without benefits. Full-time year-round work in such a job would provide annual earnings sufficient to support a decent, yet basic, living standard for the average family of three.

The Bureau's most recent forecast, "Occupational Employment Projections to 2016," provides a projection of the jobs that will exist in 2016. This forecast of employment trends pre-dates the severe 2008-09 recession brought on by the crash of the housing bubble and the financial crisis. Consequently, these projections reveal the U.S. economy's longer-term challenge to creating decent jobs that will remain well after the economy recovers from today's recession.

In 2006, a large share of workers—65.2 percent—held jobs that did not pay enough to support a decent standard of living for themselves and a small family, even with a worker with a full-time year-round work schedule. The BLS forecast suggests this will remain basically unchanged well into the next decade.

These projections run counter to a popular view that as the economy advances it will generate jobs that require better-paid advanced skills. In this view, the "jobs of the future" will be different and better-paying than today's jobs. Take for example, a 2004 *New York Times* column in which chief economist W. Michael Cox of the Federal Reserve Bank of Dallas, along with his colleagues Richard Alm and Nigel Holmes argue that:

> *Our history is one of a constant churning of jobs, with workers always finding the next step forward in the evolution of work—from farm hands to industrial workers to information handlers. They will do so again. As existing jobs succumb to shifts in technology and trade, the economy will adjust, creating new work that uses new skills and talents. Over time, workers move up what we call a "hierarchy of human talents"—they find jobs that demand higher-order skills and offer better pay and working conditions (May 13).*

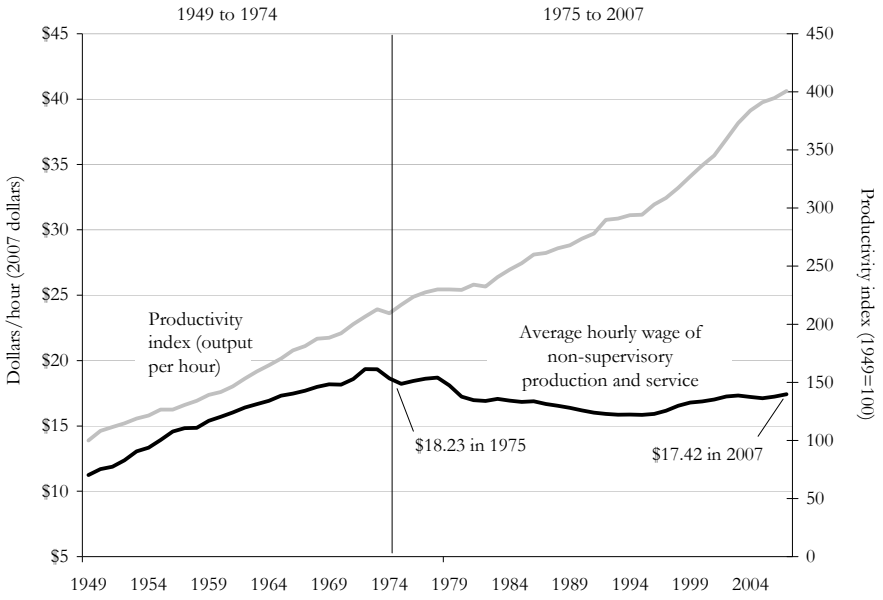
Instead, the employment trends identified by the Bureau of Labor Statistics' "Occupational Employment Projections to 2016" indicate that in terms of pay and benefits the bulk of tomorrow's jobs will be in occupations with similar levels of pay and benefits as today's jobs (see box on page 5 for a brief summary of the BLS findings). What this means is that to expand the number of decent jobs in the future will require meaningful improvements in the pay and benefits of the existing types of occupations.

Collective bargaining over working conditions through unions presents a way to move our economy in a better direction. When workers bargain collectively, they are better able to tie their wages and benefits to the productivity gains of the overall economy. Consequently, this long-standing labor institution can improve the quality of future jobs, even if the economy continues to produce the same *types* of jobs

The last three decades have demonstrated clearly that even when an economy grows and the productivity of workers increases, there is no guarantee that these advances will improve workers' wages and benefits.

Between 1975 and 2007, worker productivity (output per hour) nearly doubled, rising by 85 percent (see Figure 1). Yet the share of the economy's growing abundance going to the average worker (measured by the average hourly rate of production and non-supervisory workers) actually fell by 4 percent, to $17.42 from $18.23. In short, even though an hour of work by the average worker produced close to twice as much in 2007 as in 1975, his/her hourly wage declined.

FIGURE 1: TRENDS IN AVERAGE REAL WAGES AND WORKER PRODUCTIVITY, 1949-2007



Source: Bureau of Labor Statistics (2008a, 2008c)

The U.S. economy, however, has not always operated this way. The inability of the average worker to share in the productivity gains of the overall economy is a dramatic break from the previous 25 years. Between 1949 and 1974, the workforce became twice as productive and, at the same time, the hourly wage of production and non-supervisory workers rose 66 percent to $18.63 from $11.24.[1]

Consider that if wages had risen along with worker productivity from 1975 to 2007 the same way they did from 1949 to 1974: workers' average wages today would be 51 percent higher, at $27.75 per hour compared to the actual number of $17.42 per hour.

Why such a drastic change after 1974? One key reason is that labor union membership was at historically high levels between 1949 and 1974. During this period, unions represented roughly one-quarter or more of the workforce. Effective labor unions, such as the United Auto Workers (UAW), negotiated contracts that mandated wage raises for their members that reflected not only cost-of-living increases, but also anticipated productivity increases. By doing so, the UAW and other unions ensured that their members' living standards would progress in step with their contributions to the economy's growth, which in turn helped boost wage gains for workers across the economy. Since 1974, union membership has dropped precipitously. In recent years, less than 14 percent of workers worked under collectively bargained contracts.[2]

This report demonstrates how the BLS employment outlook projects little improvement in the percentage of decent jobs in the U.S. economy between 2006 and 2016. The report begins with a detailed look at the ten occupations projected by the BLS to add the greatest number of jobs within the U.S. labor market between 2006 and 2016. These occupations include, in the order of magnitude of job creation:

- nursing aides, orderlies, and home health aides[3]
- registered nurses
- retail salespersons
- customer service representatives
- food preparation and serving workers
- general office clerks
- personal and home care aides[4]
- postsecondary teachers
- janitors
- accounting clerks

Twenty-nine percent of the 15.6 million jobs expected to be added to our economy by 2016 will be in these ten occupations.

Currently, most of the jobs in these occupations do not pay enough or provide sufficient benefits to support the average family with one wage-earner at twice the official poverty line—that is, $17.00 per hour with health and retirement benefits or $22.00 per hour without benefits, the definition of a decent job that is used in this report. The earnings from such a job would support a basic living standard—a living standard that is not impoverished but also excludes "extras" like vacation or for saving for education or emergencies.

Consider, for example, the occupation expected to add the most number of jobs, nursing aides, orderlies, and home health aides. Only 14 percent of the jobs in this occupation pay at least the $17.00 per hour required as a minimum pay rate for a decent job with benefits. Moreover, only 43 percent of workers in this occupation received health insurance benefits in 2006 and just under one-third received retirement benefits. In other words, the large employment growth in these occupations in particular suggests that the number of decent quality jobs in the

future will not expand unless institutional forces intervene to enhance the quality of *these* jobs.

A broader examination of more than 500 different occupations reinforces this picture. This study estimates that in 2006 65.2 percent of workers did not have a decent quality job. Only a slightly higher share of all jobs projected for 2016 will offer decent pay and benefits compared to 2006 (35.2 percent in 2016 versus 34.8 percent in 2006). In other words, based on the BLS projections, we can expect to be living and working in 2016 in an economy that is basically no better at producing decent jobs than it is today.

The analysis presented below also demonstrates the potential of labor unions to improve the quality of jobs by showing how pay and benefits would improve in the ten occupations projected to have the largest job growth, as well as across all occupations, if workers entered into collective bargaining agreements with their employers. In the case of nursing aides, orderlies, and home health aides, collective bargaining can raise the average non-union worker's pay by about nine percent, from $11.49 to $12.49. This is an improvement, though not yet up to the decent job standard. However, when it comes to health insurance and retirement benefits, union representation is able to obtain benefits for the majority of these workers. Collective bargaining clearly moves the quality of these jobs toward the decent quality standard.

In fact, the estimates indicate that if a worker is covered by a collectively bargained contract, his or her chances of holding a decent job improves by 16.5 percent compared to a similar worker working without a collectively bargained contract. This estimate implies that if collectively bargained contracts covered 23.6 percent of workers—a ten percent increase over today's rate—the number of decent jobs would increase by nearly 2.5 million. A 23.6 percent union representation rate approaches what existed in the 1970s.

What about the long-standing argument that unions reduce job opportunities, i.e., raise unemployment? A review of the current state-of-knowledge on unions leads one to conclude that unions can raise compensation without reducing the overall job availability.

Labor unions can coexist with healthy levels of employment for two reasons. First, labor unions can impact the economy in a variety of ways, besides raising workers' pay and benefits. Labor unions can also raise the productivity of firms, reduce worker turnover and therefore, hiring and training costs, and act to coordinate workers' compensation expectations with the needs of the overall economy to promote steady growth. In other words, labor unions can improve the way the economy functions. Second, macroeconomic policies, more than labor unions, influence the primary source of employment growth, which is the overall level of economic activity. In other words, policies that direct government spending, taxation, and the flow of credit in the U.S. economy have a far stronger influence than unions on how many goods and services the economy produces,

and therefore the overall level of employment and income in the economy. Labor unions instead strongly influence how this income is distributed.

In sum, this paper shows how unions hold the potential to meet the U.S. economy's longer-term challenge: to produce more decent jobs. This is because the primary influence of unions is on how much of the economy's output goes to workers through their pay and benefits rather than the rate at which the overall economy, and thus employment, grows.

Today's recession highlights an important short-term consequence of the failure of the U.S. economy to improve the pay and benefits of existing jobs: today's workers and their families are less prepared to weather any recession, let alone one as severe as today's. Without their own safety nets in place, and public safety nets shrinking as fiscal budgets tighten, we can expect this recession will cause families more severe economic hardships than past recessions, not just because it is expected to be deep and prolonged, but also because families do not have adequate resources to fall back on.

THE BUREAU OF LABOR STATISTICS OCCUPATIONS EMPLOYMENT PROJECTIONS TO 2016[1]

In a 2007 report, the BLS projected that 15.6 million jobs will be added to the economy by 2016. The employment projections, provided for each of more than 500 different occupations, take into account changes in the "demand for goods and services" that are driven by population growth and expected demographic changes. For example, the BLS projections factor in our aging population which will require more health care services. These projections also take into account employment trends within industries associated with "cost-cutting or technological improvements." For example, technological advances within an industry may make some jobs obsolete while creating new jobs that require new skills.

Although the BLS report primarily focuses on predicting the quantity of jobs expected to exist in 2016, it also provides some observations on the quality of these jobs. The BLS study sorts occupations by their education and training requirements into eleven groups, tallies each group's expected employment growth, and reports their average earnings. A quick look at these numbers anticipates the findings presented in the main report of this study, which finds that the overall pay and benefits of future jobs will not look much better than in 2006, absent structural changes in the U.S. labor market.

The BLS calculations show that two of the three education and training groups with the largest projected employment growth have low median earnings. Occupations that require short-term on-the-job training are projected to add 4.6 million jobs and have the lowest median earnings among all the education and training groups. Occupations that require medium-term on-the-job training are projected to grow by 2.million jobs and have the next-to-lowest median earnings. The third group of occupations, on the other hand, includes those that require a college degree. These occupations are projected to add 3.1 million jobs and have relatively high median earnings. The BLS report stops short of combining earnings data with the employment projections necessary to extrapolate how such trends will impact the overall quality of future jobs.

MEASURING DECENT JOBS

The BLS ten-year employment projection, from 2006 to 2016, provides the basis to evaluate whether tomorrow's economy will be any better at producing "decent" quality jobs—those with sufficient wages and benefits to meet the basic needs of a small family. This first requires a working definition of a "decent" job.

In this report, a decent job is one with compensation adequate to cover the basic needs of a small family relying on one wage-earner, and avoid serious economic hardships such as worrying about having enough food, having utilities disconnected, or using the emergency room as a main source of medical care.

A job that pays at least $17.00 per hour, or about $35,000 per year, with health insurance and retirement benefits meets this standard.[5] Such a job would provide

a household with one wage-earner annual earnings just over 200 percent of the official poverty line, a level that reflects the income needed to support a decent, rather than impoverished, standard of living.

This definition is appropriate for two reasons. First, the official poverty level is well-known to be too low as a measure of actual poverty.[6] In fact, one study found that nearly two-thirds of families with incomes between the official poverty line and 200 percent of the official poverty level experienced serious economic hardships (worrying about having enough food, having utilities disconnected, or using the emergency room as a main source of medical care).[7] Moreover, well-known public subsidy programs, such as the Low Income Home Energy Assistance Program and the State Children's Health Insurance Program, use twice the poverty income threshold as their income eligibility cutoffs, implying that families with incomes below 200 percent of the official poverty threshold are in economic distress. Consequently, an income level above 200 percent of the official poverty line would seem to more adequately represent income sufficient to meet the basic needs of a family than the actual official poverty line.

In addition, $17.00 per hour is roughly comparable to the "basic family budget" income threshold, an alternative to the official poverty line, for the average family size of three (two adults and one child) presented by economists at the Economic Policy Institute in their report, *What We Need to Get By.*[8] Their basic family budget provides estimates of the income which families with young children need for a safe and decent, yet basic, living standard, assuming that most have access to health insurance benefits through their employer. Tallied up in this budget are the following items using region-specific prices: food, housing, transportation, healthcare, childcare, other necessities (personal care items, clothes, educational materials), and taxes.

Averaging at 230 percent of the official poverty line, the basic family budget ranges from just below twice the poverty line to more than three times the poverty line because living costs vary considerably across the country. The $17.00 rate would earn a small family with one earner a level of income equal to the lower end of this range. The wage rate of this one wage-earner family is set to the low-end estimate of the basic family budget in order to take into account that the basic family budgets assume that in households with two adults both work. In such households, childcare expenses would be higher than in a two-adult household with one wage-earner.[9] Of course, childcare expenses would be equally high for a one wage-earner household when there is only one adult present. In fact, the majority of one-earner households with children are headed by single adults.[10] Therefore, setting the wage for a decent job at $17 per hour provides a somewhat conservative estimate of what would be sufficient to cover a family's basic budget. The budget also excludes savings for emergencies or education—essential, if not immediate, needs.[11]

There is one other situation to consider, however. If a worker's pay rate is high enough, s/he could achieve a similar living standard in the absence of employer-

provided benefits. Take for example, the average pay of lawyers, about $51.00 per hour or $106,000 per year in 2007.[12] With or without employer-provided benefits, a job at this pay rate clearly would be sufficient to provide a decent living standard for a small family. The decent job standard therefore can also be met by jobs with pay rates high enough to achieve approximately the same level of compensation or more. A decent wage rate—without benefits—can be approximated by adding the average cost of employer-provided health insurance and retire-ment benefits to the base rate of $17.00 per hour. These costs are $4.12 per hour and $0.91 per hour, respectively.[13] Therefore, a job can meet the decent quality standard if its rate is at least $22.00 per hour ($17.00 + $4.12 + $0.91=$22.03) without benefits.

EVALUATING FUTURE JOBS

The Top Ten Occupations with the Largest Job Growth

What can the BLS employment projections for 2016 tell us about the availability of decent jobs in the future? A look at the ten occupations expected to add the largest number of jobs by 2016 is suggestive. These occupations, in order of magnitude of job creation, are:

- nursing aides, orderlies, and home health aides
- registered nurses
- retail salespersons
- customer service representatives
- food preparation and serving workers
- general office clerks
- personal and home care aides
- postsecondary teachers
- janitors
- accounting clerks

Altogether these jobs account for 29 percent of the 15.6 million jobs expected to be added by 2016 (see side box on page 5 for a brief description of this BLS survey). The BLS projects that these occupations will be the main areas of employment expansion for two reasons. First, they represent an area of growth in the economy. Second, these occupations currently make up a large fraction of jobs overall. Nine of these ten occupations are among the 25 occupations with the highest levels of employment. Consequently, these occupations provide a strong indication of how tomorrow's jobs will differ from today's.

Table 1 lists these ten occupations, their expected job growth by 2016, and the percent of jobs in each occupation in 2006 that meet the three different decent job criteria—the base wage rate of at least $17 per hour,[14] employment-related health insurance benefits, and retirement benefits. Columns 2 - 4 show the percent of jobs in each occupation that meet each of these criteria separately. The

final column shows the percent of jobs in each occupation that meet the decent job criteria of $17.00 per hour with benefits or $22.00 per hour without benefits.

The top ten occupations with the largest job growth are nursing aides, orderlies, and home health aides, which together are estimated to add 648,000 new jobs by 2016, followed by registered nurses (587,000), retail salespersons (557,000), customer service representatives (545,000), food preparation and serving workers (452,000), general office clerks (404,000), personal and home care aides (389,000), postsecondary teachers (382,000), janitors and cleaners (345,000), and accounting clerks (264,000).

TABLE 1. JOB QUALITY OF TOP TEN OCCUPATIONS WITH LARGEST JOB GROWTH

Occupation	1. Projected increase in # of jobs	2. Percent of jobs that pay at least $17/hour	3. Percent of jobs with health insurance benefits	4. Percent of jobs with retirement benefits	5. Percent of jobs that meet decent job criteria
1. Nursing aides, orderlies, and home health aides*	+648,000	13.8%	43.0%	29.2%	8.0%
2. Registered nurses	+587,000	90.6%	69.2%	65.7%	82.1%
3. Retail salespersons	+557,000	26.7%	33.9%	22.7%	21.9%
4. Customer service representatives	+545,000	32.8%	60.8%	49.1%	24.8%
5. Food preparation and serving workers	+452,000	10.3%	17.1%	8.9%	5.6%
6. General office clerks	+404,000	34.6%	51.1%	42.2%	25.0%
7. Personal and home care aides	+389,000	11.9%	29.9%	19.0%	9.5%
8. Postsecondary teachers	+382,000	69.4%	71.2%	56.6%	61.7%
9. Janitors	+345,000	15.2%	44.1%	34.1%	10.9%
10. Accounting clerks	+264,000	32.5%	54.0%	43.9%	22.7%

Sources: 2003-2007 Current Population Survey Annual Social and Economic Supplemental Files; BLS Occupational Employment Projections to 2016.
Notes: Due to small sample sizes, this occupation covers two BLS occupation codes, 31-1011 and 31-1012. Both occupations were listed among the ten with the largest job growth in the BLS report.

Most of these jobs do not pay enough or provide sufficient benefits to meet the standard of a decent job. The figures in column 2 show that the large majority of jobs in eight of the ten occupations today pay wages below the decent standard of $17.00 per hour. Among these eight low-wage occupations, the proportion of jobs that pay decent wages ranges from ten percent among food preparation and serving workers to 35 percent among office clerks. From columns 3 and 4 we can see that in five of the eight low-wage occupations the majority of jobs do not provide health insurance or retirement benefits. Only two occupations, registered nurses and postsecondary teachers, have a majority of jobs that meet the decent job standard (column 5). The other eight occupations perform poorly on this measure.

This analysis of the ten occupations suggests that the majority of new jobs added to the economy will be low-paying, with low-quality health and retirement benefits along with a smaller number of well-compensated jobs.

All Occupations

An account of the employment changes across the more than 500 occupations in the economy provides a fuller picture of the overall job quality in 2006 and 2016. Table 2 below presents the figures necessary to compare the wages and benefits of jobs in 2006 and 2016 across all occupations. The first row in the table provides a picture of jobs—again, across all occupations—that existed in 2006. The second and third rows describe the jobs that will be added and eliminated, respectively, between 2006 and 2016. Finally, the fourth row takes into account these changes, and presents the figures for 2016.

TABLE 2. PROJECTED CHANGES IN JOB QUALITY FROM 2006 TO 2016

	1. Number of jobs	2. Percent of jobs that pay at least $17/hour	3. Percent of jobs with health insurance benefits	4. Percent of jobs with retirement benefits	5. Percent of jobs that meet decent job criteria
1. Jobs in 2006	150.6 million	42.4%	53.1%	44.3%	34.8%
2. Jobs to be added by 2016	+17.3 million	44.8%	53.3%	44.8%	37.3%
3. Jobs to be eliminated by 2016	-1.7 million	28.8%	54.4%	43.1%	23.2%
4. Jobs in 2016	166.2 million	42.8%	53.2%	44.4%	35.2%

Sources: 2003-2007 Current Population Survey Annual Social and Economic Supplemental Files; BLS Occupational Employment Projections to 2016.

This comparison assumes that the wages paid (after adjusting for inflation) and benefits coverage of each *occupation* will be the same in 2016 as in 2006. Only the *number of jobs* in each occupation that exist in the economy is adjusted to fit the BLS employment picture for 2006 and 2016. If employment levels increase more in occupations that pay better-than-average wages or provide better-than-average benefits coverage, then the overall quality of jobs will go up. If employment levels increase more in occupations that pay worse-than-average wages or have worse-than-average benefits coverage, then the overall quality of jobs will go down.

Notice first what is projected to happen in terms of wages. The proportion of all jobs that pay a decent wage rate of at least $17 per hour is basically unchanged from 2006 and 2016, increasing slightly from 42 percent to 43 percent. Put another way, just as many jobs in 2016 as in 2006—about 57 percent—will be in occupations that pay less than $17 per hour, after factoring in inflation. The reason for this is that the jobs to be added by 2016 look much the same as the jobs already being offered in 2006.

The same holds true when looking at all jobs over the same period to see how many will have health and retirement benefits—the results of which are displayed

in columns 3 and 4. Benefits coverage is expected to remain virtually unchanged by 2016—53 percent of jobs will have health insurance benefits and 44 percent will have retirement benefits, the same as in 2006.

Finally, the last column shows the percentage of all jobs that meet the decent quality standard of paying at least $17.00 per hour plus benefits, or $22.00 per hour without benefits. The percentage of all jobs across occupations that meet the decent quality standard in 2016 is only 0.4 percentage points higher than in 2006; 35.2 percent compared to 34.8 percent. To understand the magnitude of this increased share of decent jobs, consider that 0.4 percent represents about 665,000 decent jobs of the 166 million total jobs projected to exist in 2016. Again, this is primarily because the jobs being added to the economy are in occupations with similar levels of wages and benefits as those that already existed in 2006.

One other factor is at play here. Many of the jobs that the BLS forecast will be shed from the economy by 2016 are low-paying. Only 23.2 percent of the jobs that will be eliminated by 2016 meet the decent job criteria compared to 34.8 percent of all jobs in 2006. Without shedding these low-paying jobs, the percentage of decent jobs forecasted for 2016 would have shown an even slighter improvement than that shown in Table 2.

Consequently, without any structural changes to the U.S. labor market, in 2016, we can expect to be living and working in an economy that is no better at producing decent jobs than it is today. Whether we look at all 500-plus occupations in the economy or just the ten occupations expected to have the largest job growth, the projections for job quality are the same. Most of the jobs added by 2016 will not meet the decent jobs standard.

This analysis of the BLS projections suggests that the average worker cannot depend on tomorrow's economy to produce jobs that offer better pay and working conditions. At best, the same kinds of jobs that are being offered today will be offered in the future. The current recession will almost certainly worsen this forecast. Wages always grow more slowly when employment growth is weak.[15] The most recent report from the Commissioner of the Bureau of Labor Statistics Keith Hall, noted in his June 2009 "Statement of the Employment Situation," that 7.0 million jobs had been *shed* from the economy since the start of the recession in December 2007.

THE IMPACT OF COLLECTIVE BARGAINING ON THE QUALITY OF FUTURE JOBS

To expand the number of decent jobs in the economy will require improving the quality of existing jobs. In terms of pay and benefits, over fifty years of economic studies have firmly established that collective bargaining does exactly that.[16]

This section evaluates the potential for unions to improve future jobs by measuring their impact on the pay and benefits of the ten occupations expected to have the largest job growth by 2016. As noted earlier, improvements in just these ten occupations would contribute significantly to changing the quality of jobs overall because they represent a large and growing proportion of U.S. jobs.

The first step is to look at the degree of unionization in each of these occupations. If an occupation is already largely covered by union contracts, then presumably unions have already had an impact on those jobs, and further improvements in job quality will be limited. Table 3 presents estimates of the proportion of workers in each occupation, as well as the share of workers across all occupations, not just those in the top ten, covered by a union contract.[17]

TABLE 3: UNION COVERAGE IN TEN OCCUPATIONS WITH LARGEST JOB GROWTH

Occupation	Percent covered by union contract
1. Nursing aides, orderlies, and home health aides*	14.1%
2. Registered nurses	19.4%
3. Retail salespersons	1.8%
4. Customer service representatives	8.7%
5. Food preparation and serving workers	12.2%
6. General office clerks	11.3%
7. Personal and home care aides	10.4%
8. Postsecondary teachers	22.5%
9. Janitors	18.0%
10. Accounting clerks	5.2%
11. Economy-wide unionization rate, all occupations	13.6%

Source: 2003-2007 Current Population Survey Basic Monthly Files.
Notes: Due to small sample sizes, this occupation covers two BLS occupation codes, 31-1011 and 31-1012. Both occupations were listed among the ten with the largest job growth in the BLS report. Overall union coverage rate is the average of 2003- 2007 from Hirsh and MacPherson (2008).

Just as with the broader workforce, the vast majority of workers in all ten occupations with the largest job growth do not work under a union contract. The union coverage rates in six of the ten occupations are lower than the 13.6 percent across all jobs. Among these six, coverage rates range between 1.8 percent among retail sales workers to 12.2 percent for food preparation and serving workers.

Among the four occupations with higher-than-average union coverage rates, the highest coverage rate is 22.5 percent among postsecondary teachers, and the lowest coverage rate is 14.1 percent for nursing, psychiatric and home health aides. Consequently, the vast majority of workers in all ten occupations have yet to

directly benefit from the improvements to compensation that unions can make. The impact of union-led collective bargaining in these ten occupations, however, shows up in the difference in wages and benefits among those workers represented by a union and those on their own.

Table 4 begins with a comparison between the wages of union and non-union workers. [18] Take for example, the figures in the first row for nursing aides, orderlies, and home health aides. As the table shows, the non-union workers in this occupation average $11.49 per hour and union workers average $13.32 per hour. In other words, the average worker in this occupation represented by unions earned 15.9 percent more than their average non-union counterpart. These figures provide the most basic measure of how pay differs between workers who are covered by a union contract and those who are not.

TABLE 4. AVERAGE WAGES AMONG UNION AND NON-UNION WORKERS IN THE TOP 10 OCCUPATIONS WITH THE LARGEST JOB GROWTH

Occupation	1. Non-union	2. Union	3. Regression-adjusted union	4. Statistically significant?
1. Nursing aides, orderlies, and home health aides*	$11.49	$13.32 *(+15.9%)*	$12.49 *(+8.7%)*	Yes
2. Registered nurses	$27.00	$31.30 *(+15.9%)*	$29.07 *(+7.7%)*	Yes
3. Retail salespersons	$14.08	$14.32 *(+1.7%)*	$14.61 *(+3.7%)*	No
4. Customer service representatives	$15.13	$18.70 *(+23.6%)*	$17.10 *(+13.0%)*	Yes
5. Food preparation and serving workers	$ 9.07	$11.53 *(+27.1%)*	$9.89 *(+9.1%)*	Yes
6. General office clerks	$14.08	$17.50 *(+24.3%)*	$15.91 *(+13.0%)*	Yes
7. Personal and home care aides	$10.39	$11.44 *(+10.1%)*	$10.81 *(+4.0%)*	No
8. Postsecondary teachers	$26.84	$32.30 *(+20.3%)*	$29.60 *(+10.3%)*	Yes
9. Janitors	$11.51	$15.13 *(+31.5%)*	$13.65 *(+18.6%)*	Yes
10. Accounting clerks	$15.88	$18.05 *(+13.7%)*	$17.26 *(+8.7%)*	Yes

Sources: 2003-2007 Current Population Survey Basic Monthly Files. The percentage union wage advantage is in parentheses.
Notes: Due to small sample sizes, this occupation covers two BLS occupation codes, 31-1011 and 31-1012. Both occupations were listed among the ten with the largest job growth in the BLS report. See Technical Appendix for details.

However, the union pay premium suggested by these figures could be misleading. This is because the difference in wages between non-union and union workers may reflect the influence of factors other than whether or not they are covered by a union contract. For example, men are more likely to be in unions than women. As a result, part of the 15.9 percent union pay premium indicated in Table 4 for nursing aides, orderlies, and home health aides probably reflects the fact that men tend to earn higher wages than women. Other factors that may influence workers' wages, aside from union representation, include age, race, education credentials, geographic location, and industry.

To take into account of these other influences, a final set of figures is presented in the last two columns of Table 4. These figures are produced using a standard statistical technique called regression analysis. This statistical technique is designed to isolate the impact of union coverage on wages from the various other factors that also influence pay.[19]

This statistical technique provides two pieces of information about the influence of union coverage on pay. First, the regression analysis provides an adjusted union wage that should only reflect the difference in wages between union and non-union workers due to union affiliation. As such, the regression-adjusted figures should be regarded as a more accurate measure of how much unions improve wages in and of themselves. Second, the regression analysis provides a measure of the reliability of the wage impact of union coverage observed. This measure is called "statistical significance." Statistical significance is an assessment of how consistently union coverage affects wages over a large number of observations. If, for example, union coverage raises the wages for some workers, but for other workers union coverage has no impact on their wages, then the impact of union coverage on wages would be deemed "not statistically significant." In this case, the regression analysis cannot identify any consistent affect of union coverage on wages and one cannot confidently conclude that union coverage has any impact on wages.

The regression-adjusted union wage for nursing aides, orderlies and home health aides is $12.49, an 8.7 percent union pay premium over the average non-union wage of $11.49. As indicated in the final column of Table 4, the estimated impact of union coverage on wages for the workers in this occupation is also statistically significant.[20] That is, one can say with confidence that nursing aides, orderlies and home health aides covered by a collectively bargained contract consistently earn more than their non-union counterparts.

The situation is different for retail salespersons, however. In row 3 of Table 4, the average wage of retail workers are similar regardless of union status, $14.08 versus $14.32, or a 1.7 percent difference. Again, this difference may be reflecting other influences on the wages of retail salespeople aside from union status alone. After taking into account other influences on pay, the more accurate regression-adjusted union wage is $14.61, or 3.7 percent higher than the average non-union wage in this occupation. The final column in Table 4, however, shows that the impact of union coverage is not consistently observed across retail salespersons. Therefore, one cannot say with any confidence that union coverage improves the pay of retail salespersons.

Focusing on the regression-adjusted effects, the figures in Table 4 indicate that for eight of the ten occupations with the largest employment growth, coverage by a union contract has a substantial positive and statistically significant impact on wages. Among these eight occupations, the regression-adjusted union wage premium ranges between 8.7 percent (accounting clerks) to 13.0 percent (customer service representatives and general office clerks).

The union wage premium sufficiently improves the wages of customer service representatives and general office clerks such that workers covered by a union contract typically earn the $17.00 per hour decent wage rate whereas their non-union counterparts do not. For four occupations--nursing aides, orderlies, and home health aides; food preparation and serving workers; general office clerks, and janitors--the regression-adjusted union wage approaches, but does not reach $17.00 per hour. This is, in part, because the wages of non-union workers in these four occupations are so low.

Tables 5 and 6 present similar comparisons between the compensation of workers covered by a union contract and those who are not, but in terms of health insurance and retirement benefit coverage rates—that is, the proportion of workers that receive these benefits.[21] As before, the first two columns provide the most basic comparison between workers, and the final two columns provide regression-adjusted figures and statistical significance. These results show that, as with wages, when workers are covered by a union contract, they typically receive better compensation than their non-union counterparts.

TABLE 5. HEALTH INSURANCE BENEFITS COVERAGE AMONG UNION AND NON-UNION WORKERS IN THE TOP TEN OCCUPATIONS WITH THE LARGEST JOB GROWTH

	Percent with health insurance benefits			4. Statistically significant?
Occupation	1. Non-union	2. Union	3. Regression-adjusted union	
1. Nursing aides, orderlies, and home health aides*	38.8%	72.3% (*+33.5%*)	65.5% (*+26.7%*)	Yes
2. Registered nurses	66.0%	75.8% (*+9.8%*)	76.1% (*+10.1%*)	Yes
3. Retail salespersons	30.0%	29.5% (*-0.5%*)	--	
4. Customer service representatives	57.0%	76.2% (*+19.2%*)	68.3% (*+11.3%*)	Yes
5. Food preparation and serving workers	15.3%	35.8% (*+20.5%*)	22.3% (*+7.0%*)	Yes
6. General office clerks	46.9%	85.9% (*+39.0%*)	81.5% (*+34.6%*)	Yes
7. Personal and home care aides	26.0%	51.2% (*+25.2%*)	53.8% (*+27.8%*)	Yes
8. Postsecondary teachers	66.1%	85.8% (*+19.7%*)	83.3% (*+17.2%*)	Yes
9. Janitors	35.5%	74.6% (*+39.1%*)	69.0% (*+33.5%*)	Yes
10. Accounting clerks	51.4%	75.5% (*+24.1%*)	71.2% (*+19.8%*)	Yes

Sources: 2003-2007 Current Population Survey Annual Social and Economic Files. The percentage point union benefit advantage is in parentheses.
Notes: Due to small sample sizes, this occupation covers two of BLS occupation codes, 31-1011 and 31-1012. Both of BLS occupations were listed among the ten occupations with the largest job growth in the BLS report. A '—' indicates that no estimate is available. See Technical Appendix for details.

Looking first again at nursing aides, orderlies, and home health aides, the regression-adjusted figures in Table 5 shows that workers with a union contract are more likely to receive health insurance benefits from their employer as compared to their

non-union counterparts. Among non-union workers, 38.8 percent of nursing aides, orderlies, and home health aides receive employer-provided health insurance. The estimates in Table 5 indicate that union coverage raises this proportion to 65.5 percent. The last column in Table 5 indicates that this difference in benefits coverage between non-union and union workers is statistically significant.

The evidence for four occupations—nursing aides, orderlies and home health aides; general office clerks, personal and home care aides; janitors; and accounting clerks—show similarly large, statistically significant, improvements in health insurance benefits coverage. Substantial, if smaller, gains from union coverage are observed for registered nurses, customer service representatives, food preparation and serving workers, and postsecondary workers.[22]

Table 6 displays estimates of how union contracts affect whether workers receive retirement benefits. According to the regression results, working under a union contract raises the share of nursing aides, orderlies, and home health aides that will receive retirement benefits by 30.6 percentage points, up from 24.4 percent among non-union workers to 55.0 percent among workers covered by a union contract. As with health insurance benefits, the impact of union coverage is observed consistently enough across a large number of workers in this occupation to be statistically significant.

TABLE 6. RETIREMENT BENEFITS COVERAGE AMONG UNION AND NON-UNION WORKERS IN THE TOP TEN OCCUPATIONS WITH THE LARGEST JOB GROWTH

	Percent with retirement benefits			4. Statistically significant?
Occupation	1. Non-union	2. Union	3. Regression-adjusted union	
1. Nursing aides, orderlies, and home health aides*	24.4%	56.6% (*+32.2%*)	55.0% (*+30.6%*)	Yes
2. Registered nurses	62.0%	77.1% (*+15.1%*)	80.0% (*+18.0%*)	Yes
3. Retail salespersons	19.9%	50.4% (*+30.5%*)	—	
4. Customer service representatives	47.3%	57.9% (*+10.6%*)	45.5% *(-1.8%)*	No
5. Food preparation and serving workers	7.7%	26.1% (*+18.4%*)	11.6% *(+3.9%)*	No
6. General office clerks	39.2%	76.8% (*+37.6%*)	57.3% (*+18.1%*)	Yes
7. Personal and home care aides	17.4%	34.0% (*+16.6%*)	40.3% (*+22.9%*)	Yes
8. Postsecondary teachers	49.9%	74.7% (*+24.8%*)	67.9% (*+18.0%*)	Yes
9. Janitors	25.1%	68.6% (*+43.5%*)	63.1% (*+38.0%*)	Yes
10. Accounting clerks	42.8%	64.8% (*+22.0%*)	61.7% (*+18.9%)*	Yes

Sources: 2003-2007 Current Population Survey Annual Social and Economic Files.
Notes: Due to small sample sizes, this occupation covers two of BLS occupation codes, 31-1011 and 31-1012. Both of BLS occupations were listed among the ten occupations with the largest job growth in the BLS report. A '—' indicates that no estimate is available. See Technical Appendix for details.

The evidence for six other occupations shows statistically significant, substantial improvements in retirement benefits coverage when workers work under a union contract. Among these occupations, the retirement benefits coverage rate rises between 18 percentage points (postsecondary teachers and registered nurses) and 38 percentage points (janitors) when workers have a union contract compared to those who do not.

The results presented in Tables 4 through 6 of the impact of unions on wages and benefits demonstrate that collective bargaining substantially improves the quality of the jobs in the top ten occupations with the largest projected job growth. For two of the eight occupations where the average wage on non-union worker earns less than the decent wage rate of $17.00 per hour, working under a union contract would raise wages enough to exceed $17.00 per hour. In four occupations, a union contract would bring the average non-union worker's wage closer to, but would not reach, $17.00 per hour. Finally, workers covered by union-negotiated contracts receive benefits at substantially higher rates compared to their non-union counterparts. Overall then, these improvements bring the average job among these occupations closer to meeting the decent job standard, if not yet achieving it.

All Occupations

What is the impact of collective bargaining on the overall proportion of decent jobs in the U.S. economy? As before, to see the overall impact of collective bargaining, we need to look at how collective bargaining through unions impacts jobs across all occupations. Table 7 presents estimates of how unions impact the wages and benefits of jobs across all occupations (rows 1 – 3). An additional measure is added in row 4 which estimates how much a union contract increases the chances that a worker's pay and benefits will meet the decent job standard.[23]

TABLE 7. AVERAGE WAGES AND BENEFITS ACROSS ALL OCCUPATIONS AMONG UNION AND NON-UNION WORKERS

Job quality measure	1. Non-union	2. Union	3. Regression-adjusted	4. Statistically significant?
1. Average wage	$19.05	$22.82 *(+19.8%)*	$21.41 *(+12.4%)*	Yes
2. Percent with health insurance benefits	49.1%	77.5% (*+28.4%)*	69.1% (*+20.0%)*	Yes
3. Percent with retirement benefits	39.5%	73.5% (*+34.0%)*	64.5% *(+25.0%)*	Yes
4. Percent that meet decent job criteria	31.1%	57.3% *(+26.2%)*	47.6% (*+16.5%)*	Yes

Sources: 2003-2007 Current Population Survey Annual Social and Economic Supplemental Files; BLS Occupational Employment Projections to 2016.

As in the earlier tables, we see that union coverage tends to increase workers' wages and their likelihood of receiving benefits. Again, focusing on the regression-adjusted figures, if a worker is covered by a union contract his/her wages will be 12 percent higher, 20 percent more likely to have health insurance benefits,

and 25 percent more likely to have retirement benefits compared to his/her non-union counterpart.[24] All three regression-adjusted figures are statistically significant.[25] Consistent with these figures, we can see from the last row of Table 7 that a union contract raises the likelihood that a workers' job meets the decent job standard by a statistically significant 16.5 percent.

To put this figure into perspective, this estimate can be used to gauge how different jobs in 2016 would look if union contracts covered ten percent more workers than in 2006, assuming no change in the expected level of employment (the next section takes up the important issue of whether collective bargaining reduces employment). An increase of this size would raise the union coverage rate from 13.6 percent to 23.6 percent, approaching the historically high union membership rates of the late 1970s.[26] If such a rise in union membership took place, the estimate in Table 7 implies that the percentage of decent jobs in the U.S. economy would rise from 35.2 percent to 36.7 percent, an increase of 1.5 percentage points.[27] This would raise the number of decent jobs by nearly 2.5 million.

By themselves, these gains in jobs with decent pay would be notable. However, measuring job quality by these measures of union workers' wages and benefits understate the extent to which collective bargaining improves jobs.

First, the quality of benefits negotiated under collective bargaining agreements tend to be superior to those offered in non-union workplaces. In 2007, union workers typically paid a substantially smaller share of their monthly health insurance premiums compared to non-union workers, 8 percent compared to 20 percent respectively.[28]

Unions not only improve average pay rates within a particular occupation, but also expand the opportunities for workers to advance to better-paid positions. They do this by defining job ladders in their collective bargaining agreements, as well as taking an active role in training workers so that they can move up these job ladders. As one important example, construction apprenticeship programs jointly sponsored by unions and employers provide workers in entry-level positions in the construction industry with a clear pathway to skilled trades such as electricians or plumbers.

Moreover, past research suggests that some non-union firms raise their pay scales in response to unionization elsewhere in order to dissuade their own workers from joining a union.[29] In other words, workers at non-union firms can also benefit from the pay improvements won through collective bargaining.

Finally, collective bargaining agreements also set in place more than compensation policies to improve working conditions. Take for example, a common requirement set by union contracts that an employer must have just cause to fire or discipline a worker. Without this clause, workers without written contracts are employed "at-will" which allows employers to fire or discipline a worker "for good cause, bad cause, or no cause at all."[30] In this way, collective bargaining improves the quality of jobs by creating a fairer workplace.

The evidence presented in this section clearly demonstrates that workers themselves can change the conditions under which they work and create more decent jobs by collectively bargaining through labor unions. The BLS employment projections forecast that tomorrow's economy will not, absent this type of structural change, produce jobs that offer better pay and working conditions than today's economy.

In fact, the outlook is likely worse than suggested by the numbers presented in this paper. This is because these figures assume that today's jobs will be able to retain today's wages and benefits in the coming years. Recent trends for wages do support this assumption in that the average hourly wage of non-supervisory workers has basically stayed the same since 1980 (see Figure 1). However, the same is not true for health insurance and retirement benefits. The proportion of workers receiving health insurance benefits has fallen from 69 percent in 1979 to 55 percent in 2006. Similarly, 51 percent of workers received retirement benefits in 1979 compared to 43 percent in 2006. As a result, the quality of tomorrow's jobs, in the absence of anything to counter the decline in health and retirement benefits, would almost certainly decline. Collective bargaining, which demonstrably delivers both better benefits as well as higher wages, could turn this trend around.

DOES COLLECTIVE BARGAINING REDUCE EMPLOYMENT?

Critics of collective bargaining often express the concern that high unionization rates may reduce employment levels. The basic logic behind this concern is that precisely by raising wages and benefits, collective bargaining increases businesses' labor costs and thereby reduces profits. This in turn may cause businesses to cut back on the size of their workforces, or worse, close their doors or outsource, creating rising unemployment. If this is the case, then collective bargaining through unions may have the effect of increasing the *quality* but decreasing the *quantity* of jobs available. And if this negative affect on employment levels is large enough, then unions may worsen the overall economic situation for all employees as well as, employers.

The U.S. national experience with collective bargaining challenges the conclusion that a highly unionized workforce and healthy employment rates cannot coexist. Table 8 presents the average unionization rates and unemployment rates for each of the past ten business cycles which span roughly between 1949 and 2007. Consider first the business cycles between 1949 and 1975 when union membership rates exceeded one-quarter of the work force. The unemployment rates during these years average between 4 and 6 percent. During the business cycles from 1975 and 2007 with relatively low union membership rates—less than one-quarter of the workforce organized, the unemployment rates average between five and eight percent. In other words, in terms of the unemployment rate, the U.S. economy appears to have performed slightly better during the years of broad union membership compared to the years of narrow union membership. At

minimum, these data suggest that unemployment was not significantly different under periods of high union membership.

TABLE 8: AVERAGE U.S. UNION MEMBERSHIP RATES AND THE UNEMPLOYMENT RATES DURING BUSINESS CYCLES, 1949 TO 2006

Business cycle	1. Unemployment rate	2. Union membership rate
1949-1954	4.3%	32.6%
1954-1958	5.0%	33.2%
1958-1961	6.1%	31.2%
1961-1970	4.7%	28.2%
1970-1975	5.9%	24.8%
1975-1980	7.1%	22.4%
1980-1982	8.1%	21.2%
1982-1991	7.1%	17.7%
1991-2001	5.5%	14.1%
2001-2007	5.2%	12.5%

Sources: BLS 2008, Mayer 2004; Hirsch and Macpherson 2007. Business cycles are defined trough-to-trough as identified by the National Bureau of Economic Research.

To counter this evidence from the U.S. economy, critics of unions point to the experiences of a number of Western Europe countries such as France and Germany—where high union membership (or coverage by union contracts) rates and chronically high unemployment rates have persisted side by side starting from the early 1980s. These western European countries provide competing anecdotal evidence that high rates of unemployment will accompany high rates of union membership.[31]

A new body of research by economists David Howell, Dean Baker, Andrew Glynn, and John Schmitt rigorously reviews the evidence of this apparent relationship. In the book edited by Howell, *Fighting Unemployment* (Howell, 2005) and a more recent 2007 paper, they examine the cross-country studies of the OECD economies, i.e., the advanced economies which are largely made up of Western European countries, usually cited as evidence that unions reduce employment.

Howell et al. find that these studies provide no strong evidence on behalf of the claim that high unionization rates cause high unemployment rates. For example, among nine influential studies that examine whether unions discourage hiring by businesses, they conclude that the majority do not establish any clear relationship.[32] Two of the nine studies, in fact, find no relationship between unionization rates and unemployment.[33] A third study produces evidence that, depending on the statistical test used, unionization rates increase unemployment or has no impact on unemployment.[34] Finally, Howell et al. re-tested the results of another two of the nine studies and find that the original findings—that unionization

rates increase unemployment—do not stand up when they use either better-quality data or apply slightly different statistical tests.[35] In other words, five of these nine studies fail to establish any clear relationship between unionization rates and unemployment.

Thus, the research of Howell, Baker, Glynn and Schmitt calls into question roughly two decades' worth of research that has supported the arguments that the high unionization rates of Western European countries have produced high unemployment rates. In fact, economist Nobel laureate James Heckman acknowledged in his review of Howell et al.'s study that they are "…convincing in showing the fragility of the evidence on the role of labor market institutions [such as unions] in explaining the pattern of European unemployment, using standard econometric methodology." (2007, p.1)

An obvious question remains. If collective bargaining through unions raise the pay and benefits of workers, increasing the costs for businesses, why *don't* these higher costs translate into fewer jobs? The answer is that the impact of higher labor costs associated with unions on employment depends on other factors and is generally weaker than the impact of the overall economic environment in which they operate.

One factor that shapes the impact of unions on employment is whether the presence of a union in a firm raises the firm's productivity. [36] A rise in productivity would reduce the net cost increase from better union pay and benefits. Whether union membership improves productivity, however, depends on many factors such as the quality of worker-management relations. As mentioned earlier, unions bargain over more than workers' pay. They also try to exercise influence over the operations of the workplace. This can cause conflicts between managers and their workers that may lower productivity. Yet when worker-management relationships are favorable, a union's ability to influence how a company operates can improve its efficiency by tapping into workers' knowledge and experience.[37]

For example, high levels of worker participation played a pivotal role in improving the productivity of steel mills, arguably contributing to the U.S. steel industry's turnaround during the mid-1990s. Past research found that the steel mills which relied on such worker participation were typically unionized and were able to substantially raise the mill's "uptime," that is, the percentage of time during which equipment is scheduled to operate that it actually does. Uptime is a crucial determinant of a mill's productivity.[38]

Past research has also demonstrated that higher pay and benefits tend to reduce turnover, which in turn means lowering hiring and training costs. This has been shown to be true in cases when new laws require employers to pay their workers more, such as what happens when there is a minimum wage hike[39]; or when employers' voluntarily provide better compensation.[40] This also happens when unions negotiate higher pay and better benefits.[41]

Unions also act as stewards of jobs as well as wages. Unions can and do negotiate their contracts with employers with both job security, as well as wages, in mind.

Workers and employers may be at odds over how large their respective share of businesses' revenues should be, but workers and employers also share a common interest in that neither wants their companies to fail. Past research finds generally that the rate of failure and success of unionized firms is basically the same as non-unionized firms.[42]

In fact, the most consistent relationship found in past research between unions and employment is the following: countries that have an institutional framework that coordinates the actions of unions, employers, and the government tend to have higher employment rates. This result suggests that when unions have sufficient power to act as respected partners with government and employers in developing economic policies, they can improve the overall performance of an economy.[43]

Consider, for example, the case of the Netherlands where employers, unions, and the government consult regularly through the Social Economic Council and Labor Foundation to develop policies to achieve their mutual goals. These consultations produced a coordinated response to the country's rising rates of unemployment and inflation during the 1970s. The Dutch unions explicitly bargained contracts—which covered more than 70 percent of workers—with predictable and moderate wage increases designed to prevent high levels of both unemployment and inflation. At the same time, the government lowered tax rates to help boost low-wage workers' income while wages were growing slowly. These coordinated actions helped to reduce the Netherlands unemployment rate from an average of nine percent during the 1980s to six percent during the 1990s.[44]

Another reason for the weak relationship between unionization rates and employment is that if a country's workforce is predominantly unionized then there is no competitive disadvantage within the country's borders for being a unionized shop. Other factors then become more important in establishing a firm's competitive success. The choice facing employers operating within that country is no longer whether to operate a non-union or union company, but rather whether to operate a company in that country at all.

For some employers, factors besides labor costs may dominate in deciding where to do business. The most obvious examples include those firms that provide services that must be delivered "on-site" – such as in construction, education, health and social services. It is no surprise that, as we saw earlier, these are the same types of occupations that the BLS projects will have the largest employment growth by 2016. Recall that all of the top ten occupations are in the services industry and most involve services provided "on-site" – such as food servers, registered nurses, and janitors.

For other employers, however, relative labor costs will decide where they do business. In particular, manufacturing firms that can ship their goods to their customers or service firms that can operate over the internet or over the phone do not necessarily need to be located near the customers they serve. With regard to these types of "off-shore-able" jobs, differences in labor costs can cause firms to

move from high-wage countries, such as the U.S., to lower wage countries, such as China or Mexico.[45]

This type of competition, however, does not just threaten union workers but also non-union workers. That is, the challenge that the U.S. economy faces is how to prevent a decline in wages and benefits of all U.S. jobs over time within an increasingly integrated world economy with a large supply of cheap labor—labor that is cheaper than both non-union and union workers in the U.S. In other words, the real question is how to promote to the maximum extent the creation of jobs that are not off-shore-able.[46]

This brings us back to the basic conclusion of the research done by Howell and his colleagues: the pursuit of high levels of employment does not require low levels of unionization. Collective bargaining through unions appears to more strongly impact the level of wages, and thus the *distribution* of income, rather than the overall *level* of employment.

The absence of a clear link between the rates of union membership and unemployment contradicts the idea that promoting employment growth requires discouraging unions. Rather, to promote employment growth macroeconomic policies such as public investment in the country's infrastructure and financial market regulation that encourages the flow of credit toward productive activities should be pursued.[47] Such policies directly impact a country's overall level of economic activity and therefore the country's overall level of employment and income.

The current economic crisis illustrates this vividly. No reasonable explanation can attribute a meaningful role of labor unions in the onset, let alone the severity, of the current recession. The central problem here was clearly the deregulation of financial markets that that led to the crash of the housing market and the credit crisis.[48] In June 2009, the official unemployment rate reached its highest level in 26 years at 9.5 percent. Adding underemployed workers (part-time workers who want, but can't find, full-time work) and discouraged workers (jobless individuals who want to work, but have given up on searching for a job) to the officially unemployed raises this rate to 16.5 percent. In the meantime, union coverage rates have remained below 15 percent of the total workforce for the past ten years.

CONCLUSION

This analysis of the Bureau of Labor Statistics "Occupational Employment Projections to 2016" indicates that, based on the current trends, the composition of jobs within the U.S. economy over the next decade is likely to closely resemble what exists today in terms of pay and benefits. This study estimates that, barring efforts by workers to change the conditions under which they work, 65 percent workers will not have a decent quality job in 2016, that is, a job that pays just over 200 percent above the poverty line—$17.00 per hour—and provides health insurance and retirement benefits, or $22.00 per hour without benefits. If the U.S.

economy is going to produce more decent jobs, then we need to push forward a policy and institutional environment that improves the quality of the same types of jobs that are being held by our workforce today.

The evidence shows that collective bargaining through unions has the capacity to do this. When workers collectively bargain through unions over their working conditions, many low-quality jobs—including many among the occupations projected to have the largest job growth by 2016—come much closer to achieving the decent job standard. More specifically, increasing union coverage rates to roughly what existed during the 1970s would raise the proportion of decent jobs projected to exist in 2016 from 35.2 percent to 36.7 percent. This increase of 1.5 percentage points represents an increase of about 2.5 million decent jobs.

The evidence that unions necessarily reduce overall employment levels does not stand up to careful scrutiny. Our own national experience provides evidence that high union membership rates and robust wage growth have coexisted with healthy employment rates. In short, collective bargaining holds great promise to reverse the current, unfavorable trend in decent job offerings because of its demonstrated ability to achieve better pay for workers without causing job loss.

Today's economic crisis provides a dramatic example of how macroeconomic policies, not labor market institutions, determine the unemployment picture. The current recession requires bold policies that promote economic growth and job creation. Indeed, the Obama administration's nearly $800 billion economic stimulus package includes some policies to do just that. These policies include government spending to repair the U.S.' public infrastructure—its highways, bridges and schools; expand the U.S.'s capacity to produce new types of clean energy, and support cash-strapped local governments. These public expenditures should refuel the anemic demand for businesses' goods and services, and in particular, for services that are less likely to move "off-shore" such as in health care, education, and construction.

To ensure that the job creation spurred on by such government spending actually creates *decent* jobs, now and into the future, policies that make it easier for workers to organize and join unions must also be pursued. An important example is the currently debated Employee Free Choice Act (EFCA). As of July 2009, EFCA is expected to include measures that protect workers from employers' attempts to discourage workers from collectively bargaining over their working conditions, and as a result, should promote greater rates of union membership. One provision under consideration guarantees a speedy union election: union elections would be required to take place five to ten days after 30 percent of workers express their support for a union. Another provision would require binding arbitration if an employer fails to reach a contract agreement with a new union. If adopted, EFCA should promote a supportive institutional environment for collective bargaining. In this context, unions should have great potential to improve the pay and benefits of future jobs, and thereby create more decent jobs, as the economy recovers.

TECHNICAL APPENDIX

Data Sources

The characteristics of jobs are estimated from publicly-available data provided by the Current Population Survey (CPS). The Current Population Survey (CPS) is a monthly household survey conducted for the Bureau of Labor Statistics by the U.S. Census Bureau. This survey collects a wide variety of data on individuals, including demographic characteristics, wages and benefits. In order to achieve sufficient sample sizes to analyze occupations separately, I pooled survey data from the years 2003 to 2007.

I used two different types of files from the CPS. The first set of CPS data files are based on the basic monthly household survey which collects information from about 50,000 households every month on a wide range of topics. A subset of these data are referred to as the Outgoing Rotation files. The Outgoing Rotation files (ORG) of the basic monthly CPS survey asks about workers' union status, as well as a battery of questions to accurately estimate workers' wage rates. In particular, I used data files generated by the Center for Economic and Policy Research from the ORG files which adjusts the hourly wage data from the CPS so that: 1) the hourly wage includes overtime pay, commissions and tips; 2) observations with hourly rates that are implausibly high or low (i.e., below $1 and above $100 in 2002 dollars) are excluded; 3) top-coded observations have imputed wage rates; and 4) the hourly wage rate for workers who report that their usual hours "vary" is determined by imputing their usual hours (see Schmitt 2003 for a description of these adjustments). The second set of CPS data files is based on the Annual Social and Economic survey (ASEC), a supplement to the March basic monthly CPS survey which asks about, among other things, annual earnings, annual work hours, and job-related benefits. These files include the ASEC data and the March basic monthly data. Specifically, the estimates presented in Tables 1, 2, 5, 6, and rows 2-4 of Table 7 are based on the ASEC files. Estimates presented in Tables 3 and 4 and row 1 of Table 7 are based on the ORG files.

The reason different CPS data files are used for different estimates is for the following reasons: the ASEC data files provide data on a worker's earnings, union status, *and benefits*. Data on workers' benefits are not available in the ORG files. However, ORG data on worker's wage rates are more accurate. Consequently, the estimates which involve comparing the combination of wage and benefits characteristics of jobs or just the benefits characteristics of jobs (i.e., Tables 1, 2, 5, 6 and rows 2-4 of Table 7) are based on the earnings, benefits, and union status data from the ASEC files. The estimates which involve estimating workers' wage rates separately (i.e., Table 4, and row 1 of Table 7) are based on the earnings data available from the ORG files. Table 3, which examines union status by itself, is discussed further below.

Generally, wage estimates from the ORG files are more precise for the following reason. The ORG files ask a series of questions to get an accurate reporting of a worker's current earnings (i.e., in the past two weeks), including questions about the hourly rate of workers paid hourly. The ASEC survey, on the other hand, asks a limited number of questions about a worker's earnings and does not ask about wage rates specifically. Rather, the ASEC survey collects information about what workers earned over the last calendar year, their total number of weeks worked, and their usual weekly hours. From these data, an hourly wage rate can be calculated by: annual earnings/(total weeks worked x usual weekly hours). Additionally, in the ASEC survey respondents have to recollect their earnings and work schedule for the past calendar year. As a result, there is a greater likelihood of reporting errors compared to recollecting information from two weeks ago.

Combining data on union status with the benefits data from the ASEC files introduce some measurement error because the reference period differs between the survey question about union status and the questions about health and retirement benefits coverage. The question on union status refers to a worker's status during the last two weeks whereas the questions on benefits refer to a worker's benefits during the past calendar year. I follow the practice used by Schmitt, Waller, Fremstad and Zipperer (2007) which assumes that current union status (i.e., during the last two weeks) is an appropriate proxy for union status in the past year. The ORG files, however, provide data on workers' current occupation (i.e., during the last two weeks). Therefore, the figures in Table 3, which provides estimates of union coverage rates by occupation, are based on the ORG files.

Evaluating Changes in Job Quality

The overall strategy to evaluate change in job quality is to compare the quality of jobs (i.e., their average wage and benefits coverage rates) of the occupations that exist in 2006 to those that are projected to exist in 2016. To do this, I combine two sources of data.

The first data source is ASEC data files from 2003-2007 CPS surveys described above. The second data source is the employment data by occupation reported by the BLS *Employment outlook: 2006-2016: Occupational employment projections to 2016* report. This report is described above in the main text.

I combined these two data sources by matching the employment projection data reported in the BLS report to the CPS data by the most detailed occupation categories in the CPS (variable name: peio1ocd). I then used the employment projection data to created four new adjusted sampling weights. The *2006 weight* adjusts the CPS-provided sampling weights so that the distribution of employment by occupation matches that reported for 2006 in the BLS report. The *2016 "added jobs" weight* adjusts the CPS-provided sampling weights so that the distribution of employment by occupation matches that among the jobs projected to be added by 2016. The *2016 "eliminated jobs" weight* adjusts the CPS-provided sampling weights so that the distribution of employment by occupation matches that among the jobs projected to be eliminated by 2016. Finally, the *2016 weight* adjusts the CPS-provided sampling weights so that the distribution of employment by occupation matches that projected for 2016 by the BLS report.

By weighting the data with these alternative adjusted sampling weights, I am able to estimate the various job characteristics such as the percent of jobs that pay at least $17 per hour, the percent with health insurance benefits, etc. of the jobs reported by the BLS to exist in 2006, projected by the BLS to be added by 2016, projected by the BLS to be eliminated by 2016, and projected by the BLS to exist in 2016. These figures are presented in Table 2.

Estimating the Union Wage Premium

I determine the union premium on wages presented in Table 4 and row 1 of Table 7 by estimating the following model separately for each of the ten occupations with the largest employment growth, and then also for all occupations combined:

$$\ln(\text{hourly wage}_i) = a_i + B_1(\text{Union}_i) + B_2(\text{Female}_i) + B_3(\text{Nonwhite}_i) + B_4(\text{Hsdeg}_i) + B_5(\text{Somecol}_i) + B_6(\text{BAdeg}_i) + B_7(\text{Age2534}_i) + B_8(\text{Age3544}_i) + B_9(\text{Age4554}_i) + B_{10}(\text{Age5564}_i) + B_{11}(\text{Age65plus}_i) + B_{12}(\text{Urban}_i) + \sum S_s\text{State}_s + \sum I_I\text{Major Industry}_I + \sum Y_Y\text{Year}_Y + e_i$$

where the subscript i denotes the individual, the subscript S denotes the state, the subscript I denotes the industry, and subscript Y denotes the year. CPS-provided samplings weights are used. Data are from the 2003-2007 CPS ORG files.

All of the variables in the model are indicator variables with the exception of the hourly wage. The coefficient B_1 is converted from log points and presented in terms of percentage points in the last column of table 4 and row 1 of Table 7. Standard errors are robust to heteroskedasticity and clustering at the state level.

Estimating the Union Advantage in Benefits Coverage and Likelihood of Having a Decent Job

I determine the union advantage in benefits coverage or having a decent job presented in Tables 5, 6 and rows 2-4 of Table 7 by estimating the following model separately for each of the ten occupations with the largest employment growth and then also for all occupations combined:

Has benefit (or has decent job) =

$$a_i + B_1(\text{Union}_i) + B_2(\text{Female}_i) + B_3(\text{Nonwhite}_i) + B_4(\text{Hsdeg}_i) + B_5(\text{Somecol}_i) + B_6(\text{BAdeg}_i) + B_7(\text{Age2534}_i) + B_8(\text{Age3544}_i) + B_9(\text{Age4554}_i) + B_{10}(\text{Age5564}_i) + B_{11}(\text{Age65plus}_i) + B_{12}(\text{Urban}_i) + \sum S_s\text{State}_s + \sum I_I\text{Major Industry}_I + \sum Y_Y\text{Year}_Y + e_i$$

where the subscript i denotes the individual, the subscript S denotes the state, the subscript I denotes the industry, and subscript Y denotes the year. CPS-provided samplings weights are used. Data are from the 2003-2007 CPS ASEC files.

The health insurance and retirement benefits coverage measures are indicator variables—i.e., take on a value of 1 if a worker reports that they have such benefits through the job, or 0 if not. Note that the ASEC files include information on whether the respondent's employer contributes toward the cost of health insurance. In this case, the health insurance coverage indicator variable equals 1 only if the respondent's employer pays for part or all of the health insurance costs. The retirement benefit measure, on the other hand, cannot directly account for whether or not an employer contributed to a retirement account. Instead, among workers who have access to a retirement plan the ASEC files only differentiate between workers who report that s/he participates in the plan. The retirement benefit measure takes on a value of 1 only if the worker reports that s/he participates in a employer- or union- sponsored retirement plan. For a discussion about the merits of this measure of retirement benefits see Schmitt (2008). The "has a decent job" measure is an indicator variables—i.e., takes on a value of 1 if a worker has a decent job as defined in the main report, or 0 if not.

Econometricians differ on their views of the strengths and weakness of using linear probability models (Kennedy 1998; Newman, Brown, and Fraas, 2004). To address this, I produce estimates using both a linear probability model and a Probit model with standard errors robust to heteroskedasticity and clustering within states. There were no meaningful differences between the two sets of estimates. The figures presented in the tables of the report are the probability derivatives from the Probit model.

To check for the influence of potential mismatches in the union status of worker (due to the different reference periods of the union status question and benefits question described above), I compared my estimates using the full sample of data to estimates using a sample restricted to workers who worked at least half the year and at least more than 20 hours per week. By definition, the latter set of workers have a stronger attachment to the labor force and thus are more likely to have the same union status the year prior as currently than those

who worked less than half the year or less than 20 hours per week. The coefficients based on the restricted sample are substantively the same as those based on the full sample. Therefore, estimates based on the full sample (i.e., including workers who worked less than half the year or less than 20 hours per week) are presented.

One final note should be made regarding two of the occupations: food preparation and serving workers and retail salespersons. For the benefits analysis a more aggregate occupational category had to be used for food preparation workers. The aggregated category included the following CPS occupational codes: 4050 (Combined food preparation and serving workers, including fast food), 4060 (counter attendants, cafeteria, food concession, and coffee shop), and 4110 (waiters and waitresses), rather than 4050 alone. A similar aggregate occupational category could not be constructed for retail salespersons. Even when similar occupations were pooled to form a more aggregate occupational category for retail salespersons there were too few unionized retail salespeople to estimate any reliable results.

Estimating the Impact of a 10-Percent Increase in Union Representation on the Percent of Decent Jobs in 2016

I combine the following figures to approximate the increase in decent jobs from a ten percent increase in union representation. In 2016, 57.3 percent of union jobs are expected to meet the decent job criteria compared to 31.6 percent among non-union jobs (see Table 7). In 2016, I assume that about 13.6 percent of jobs are expected to be covered by union contracts (the same as estimated for 2006).

The regression estimates in Table 7 suggest that the jobs newly covered by union contracts would be 16.5 percent more likely to meet the decent job criteria than when they were not covered by a union contract. In other words, about 48.1 percent (31.6% + 16.5%) of non-union jobs that become newly covered by union contracts would be expected to meet the decent job criteria.

Therefore, we can add up the following:

1. 57.3 percent of the original 13.6 percent of jobs expected to be covered by union contracts in 2016 are estimated to meet the decent job standard, or 7.8 percent of jobs (57.3% x 13.6%).

2. 76.4 percent of non-union jobs will remain non-union in 2016 (the original 86.4 percent of non-union jobs expected to exist in 2016 minus the 10 percentage point increase in union coverage rate assumed for this exercise). Of these 76.4 percent of jobs, 31.6 percent are estimated to meet the decent job standard, or 24.1 percent (31.6% x 76.4%).

3. 10 percent of jobs are assumed to be newly covered by union contracts. Of these 10 percent of jobs, 48.1 percent are estimated to meet the decent job standard, or 4.8 percent (48.1% x 10.0%).

Altogether, these figures add up to 36.7 percent (7.8 + 24.1 + 4.8).

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NOTES

[1] Note that average hourly wage data is available only for non-supervisory production workers between 1949 and 1963, and not for nonsupervisory service workers. Because production workers typically earn more than service workers, the average hourly wage between 1949 and 1963 for all workers would almost certainly be lower than the figures presented in the text and in Figure 1 for those years, including the average hourly wage of $11.24 in 1949. As a result, the estimate of a 66 percent growth in the average hourly wage between 1949 and 1974 likely understates the actual wage growth among all workers.

[2] Hirsch and MacPherson (2008).

[3] Note that due to small sample sizes in the Current Population Survey, the government data source used to conduct the analyses in this report, two occupations are combined: home health aides (occupation code 31-1011) and nursing aides, orderlies, and attendants (31-1012). Both of the original BLS occupations were listed among the ten occupations with the largest job growth.

[4] "Personal and home care aides" assist elderly or disabled adults with daily living activities—such as housekeeping and meal preparation--at the person's home or in a daytime non-residential facility. "Home health aides," in contrast, provide directly health-related routine care such as bathing, dressing, or grooming.

[5]All dollar figures in this report are in 2007 dollars.

[6] The National Research Council commissioned a panel of poverty experts to study the problems with the U.S. government's official poverty measure. The findings from this panel are published in the 1995 book *Measuring Poverty,* edited by Constance Citro and Robert Michael..

[7] Boushey, Brocht, Gundersen, and Bernstein (2001).

[8] Lin and Bernstein (2008).

[9] It actually seems more reasonable to assume that there is one earner in such a household because the basic family budget excludes extras such as restaurant meals, so at least one adult in the family will need to dedicate a significant number of hours to doing unpaid housework. In fact, the most recent results of the National Time Use study of the Bureau of Labor Statistics indicate that such unpaid housework—including grocery shopping, food preparation, cleaning, and childcare--in a family with one employed adult and one adult not in the labor force averages nearly seven hours daily for the adult not in the labor force (Bureau of Labor Statistics, 2008d).

[10] The U.S. Census Bureau reports in its annual detailed poverty tables (based on the Current Population Survey) that in 2007, 54 percent of one wage-earner households with children under 18 were headed by a single male or single female (www.census.gov/hhes/www/macro/032008/pov/new07_100_01.htm).

[11] These criteria for a decent job closely match those used by economist John Schmitt of the Center for Economic and Policy Research who ties the qualities of a good job to the pay of the typical male worker in 1979. In 1979, just past the era when rising worker productivity consistently lifted the average worker's wages, more than half of all male workers earned at least $17 per hour (in 2007 dollars). In the same year, nearly three-quarters of male workers had health insurance benefits, and over-half had retirement benefits. As a result, 38.1 percent of male workers had a job that paid at least $17.00/hour and had health insurance and retirement benefits in 1979 (see Schmitt 2007).

[12] This national, cross-industry estimate is from the BLS Occupational Employment and Wages, May 2007.

[13] The health insurance premium figure comes from the U.S. Department of Health and Human Services Medical Expenditure Panel Survey. According to the survey data, in 2008, the average annual family premium cost was $12,298 and the average enrolled employee contribution was $3,394. The difference of $8,904 represents the employer contribution. Adjusted to 2007 dollars, the per-hour rate for a full-time year-round schedule is equal to $4.12 per hour ($8,573 per year/2,080 hours per year). The retirement benefit cost figure of $0.91 is the average private sector employer cost per hour for retirement benefits in 2007 as estimated by the Bureau of Labor Statistics National Compensation Survey.

[14] Of course, these jobs include those that pay the higher decent wage standard of $22 per hour without benefits.

[15] For a survey of the evidence of the relationship between earnings and unemployment see chapter 5 in Bartik (2001).

[16] Take for example, the classic 1984 economics text on unions *What Do Unions Do?* by Richard Freeman and James Medoff in which they discuss the "long history" of economic studies that establish this effect. See also Bennett and Kaufman (2007).

[17] Union coverage status includes union members as well as workers who are not union members but who are covered by a union contract.

[18] Throughout this report, unless otherwise noted, "union workers" refers to workers who are covered by union contracts, not just workers who are members of a union. "Non-union workers" include only workers who are not covered by a union contract.

[19] For analysis of how unions impact different types of workers see John Schmitt's series of CEPR briefing papers published in 2008 on the impact of unions on African-American workers, Latino workers, female workers, and young workers (www.cepr.net).

[20] A "yes" entry indicates statistical significance at the 0.10 level.

[21] A "yes" entry indicates statistical significance at the 0.10 level.

[22] Unfortunately, several occupations appear to have both a small union advantage with regard to benefits (e.g., customer service representatives) and small sample sizes, based on the basic differences shown in columns 1 and 2 of Tables 5 and 6. This combination of factors makes it difficult for the regression analysis to distinguish statistically significant differences in benefits.

[23] This additional analysis could not be done on each of the ten occupations because of limited sample sizes.

[24] The 12 percent union wage premium is a conservative estimate. This is because the wage premium is based, in part, on wage data imputed by the Census Bureau using a technique that Hirsch and Schumacher (2004) demonstrate underestimates the union wage premium. Take for example, the analysis of Mishel, Bernstein, and Allegretto (2007) of the union wage premium across occupations using the CPS, but excluding imputed wages. They estimate a union wage premium of 14.7 percent for 2005.

The imputed CPS wage data are included in the regression analysis of this report because of the small sample sizes available to analyze occupations separately. Without the imputed wage data, the small sample sizes would not produce reliable results. The fact that this report's union wage premiums are conservative estimates strengthens the paper's overall argument that unions improve working conditions.

[25] A "yes" entry indicates statistical significance at the 0.10 level.

[26] If occupations' union coverage rates do not change between 2006 and 2016, the BLS employment projections suggest that union coverage will remain approximately the same as in 2006, or decline slightly.

[27] See technical appendix for the details behind this calculation.

[28] These are 2007 figures from the National Compensation Survey benefits data of the Bureau of Labor Statistics.

[29] The most recent empirical study of this impact is Farber (2005). Economists have generally considered that union wage effects can extend into the nonunion sector two different ways. First, unions can raise the pay of nonunion workers through the "threat effect" described in the main text. Second, unions can reduce the pay of nonunion workers through a "spillover effect." In this case, if the wage gains won by unions cause unionized firms to reduce their workforce, then the newly unemployed workers will need to seek employment among nonunionized firms. This would increase the available supply of workers for these nonunionized firms, allowing these firms to lower their wages since more workers are competing for jobs in these firms. Farber's 2005 study focuses on measuring the "threat effect" and finds some evidence of a positive effect of unions on nonunion wages, and no evidence of a negative spillover effect.

[30] See Muhl (2001). Exceptions to this are any applicable state and federal laws such as federal antidiscrimination laws.

[31] See, for example, OECD (1994), Elmeskov, Martin and Scarpetta (1998) and St. Paul (2004).

[32] The nine studies they review are: 1) Scarpetta (1996), 2) Elmeskov et al. (1998), 3) Nickell (1997), 4) Blanchard and Wolfers (2000), 5) Belot & van Ours (2005), 6) Nickell et al. (2003/2005), 7) International Monetary Fund (2003), 8) Baccaro & Rei (2005), and 9) OECD (2006). See Table 3 in Howell et al. (2007).

[33] Elmeskov et al. (1998) and OECD (2006).

[34] Blanchard and Wolfers (2000).

[35] Howell et al. re-test the results of Nickell (1997) in two ways. First, Howell et al. use measures of labor market institutions that Nickell and his colleagues constructed (Nickell et al. 2001) to improve on the measures used in his older study. Second, Howell et al. extend the time period of the original study to include the late 1990s. With these changes Howell et al. find no statistically significant relationship between unionization rates and unemployment. They do find a weak relationship between union *coverage* rates and unemployment, however. Howell et al. also tested the robustness of the results of the 2003 IMF study by making small changes to the original statistical model and found that, depending on the model used, higher unionization rates and relatively high unemployment rates may or may not be linked.

[36] Higher labor productivity can have the effect of reducing an employer's demand for workers—since the same amount of output can be produced with fewer workers. If greater productivity of a firm allows it to expand, such a decline in demand for workers can be offset.

[37] Appelbaum and Hunter (2003).

[38] Appelbaum, Bailey, and Berg (2000).

[39] Fairris, Runsten, Briones and Goodheart (2005).

[40] Delery, Gupta, Shaw, Jenkins, Jr. and Ganster (2001).

[41] Hammer and Avgar (2007).

[42] Freeman and Kleiner (1999); Dinardo and Lee (2004).

[43] Aidt and Tzannatos (2002) and Howell et al. (2007).

[44] Schettkat (2005).

[45] Blinder (2006).

[46] For a discussion about how "off-shoring" may impact the U.S. labor market see Blinder (2007) and Pollin (2007).

[47] See Pollin, Heintz and Garrett-Peltier (2009) and Pollin (2009).

[48] Pollin (2009).

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About the Author

Jeannette Wicks-Lim is an Assistant Research Professor at PERI. Wicks-Lim specializes in labor economics with an emphasis on the low-wage labor market. Recent publications include articles in *Dollars and Sense,* and co-authorship of the book *A Measure of Fairness: The Economics of Living Wages and Minimum Wages in the United States*, and the studies "Job Opportunities for the Green Economy" and "Green Prosperity: How Clean-Energy Policies Can Fight Poverty and Raise Living Standards in the United States."