

# The Economic Footprint of Unions in Los Angeles

*A briefing paper by the Economic Roundtable*

## *S UMMARY OF FINDINGS*

The Los Angeles County Federation of Labor represents 818,633 workers; 337,798 of these workers are covered by contracts that end in 2008. Union members make up roughly 15 percent of LA's labor force

The economic context for unions in Los Angeles is a formal labor market that has been stagnant since 1990, with all net job growth occurring in the informal economy. More than a quarter of the labor force is impoverished. Per capita income in Los Angeles County is below the state average and growing more slowly than in either the state or the nation.

The estimated average annual earnings of Los Angeles union members in 2007 is \$41,682. Union workers earn an average of 27 percent more than non-union workers in the same occupation. In 2007 the earnings of Los Angeles union members exceed the earnings of their non-union counterparts in the same occupations by:

- \$3 billion for 337,798 workers with contracts ending in 2008
- \$7.2 billion for all 818,633 union workers

The wages earned by LA's union workers are estimated to total \$34 billion in 2007. The expenditure of these earnings is stimulating:

- \$51 billion in total sales
- Creation of 307,100 jobs; 64,800 more jobs than would be created if these workers did not earn union wages
- \$7 billion in taxes to all levels of government

The network of economic activity that relies on LA's 818,633 union workers encompasses roughly 30 percent of the county economy, including:

- 1.6 million workers, or 30 percent of all jobs, including self-employed workers
- \$34 billion in employee compensation, or 31 percent of all wages earned by employees
- \$29 billion in income to business owners, or 28 percent of all owner income
- \$113 billion in economic output, or 28 percent of LA County's total output
- \$68 billion in added value created with LA County, or 29 percent of all value added activity
- \$32 billion dollars in tax payments in 2007, including \$20 billion to the federal government and \$12 billion to state and local government.

# The Economic Footprint of Unions in Los Angeles

*A briefing paper by the Economic Roundtable*

Workers who bargain collectively with their employers as union members make up roughly 15 percent of LA’s labor force.<sup>1</sup> The Los Angeles County Federation of Labor, AFL-CIO (LACFL) requested the Economic Roundtable to analyze the impact of these workers’ earnings on the local economy. This paper provides that analysis as well as analyses of the impacts of the differential in wages between union and non-union workers, and of the overall economic impact of goods and services produced by union workers. The labor market atlas of unions created to make these estimates can benefit from more refinement, but already is a useful tool for assessing labor force strategies for Los Angeles.

The economic context for this assessment is a labor market in which there is a shortage of sustaining jobs. In Los Angeles:

1. The population has grown steadily but there are fewer jobs in the formal economy, where employers comply with labor law, than there were in 1990.<sup>2</sup>
2. The underground economy, operating outside the reach of government regulation, has become the growth engine.<sup>3</sup>
3. Incomes are deeply polarized – more than a quarter of the labor force is impoverished.<sup>4</sup>

One consequence of LA's large, low-paid labor force is that many of the workers who drive the economy cannot afford the cost of housing for their families. Nearly two thirds (61 percent) of LA households live in rental housing and the income of the typical renter household has declined steadily since 1989. The typical renter household is precariously housed, paying more income for rent (34 percent) than at any time in the past quarter century.<sup>5</sup>

LA is making less headway on raising residents' income than the State of California or the United States. Per capita personal income is 93 percent of the state average, and grew by an average annual rate of only 3.9 percent from 1995 to 2005, compared to 4.1 percent for the nation and 4.3 percent for California.<sup>6</sup>

Table 1  
**Industries of LACFL Members with Contracts Ending in 2008**

<i>Code</i>	<i>U.S. Bureau of Economic Analysis Industry Sector</i>	<i>Union Members</i>
31	Natural gas distribution	5,200
32	Water- sewage and other systems	1,250
38	Construction of commercial buildings	6,600
391	Air transportation	2,350
394	Truck transportation	1,350
395	Transit & ground passenger transport	600
397	Transportation support and logistics	10,000
399	Couriers and messengers	13,000
405	Food and beverage stores	1,000
418	Motion picture and video industries	70,000
419	Sound recording industries	7,200
420	Radio and television broadcasting	16,800
458	Services to buildings and dwellings	8,000
464	Home health care services	120,000
465	Offices of physicians- dentists	979
467	Hospitals	18,469
503	State & Local Education	38,200
504	State & Local Non-Education	16,800
<b>TOTAL</b>		<b>337,798</b>

### Where Do Union Members Work?

Thirty-two union contracts representing 337,798 workers are up for renewal in Los Angeles County in 2008. The industries that employ these workers are shown in Table 1 and are overwhelmingly concentrated in the Service sector, as is the county's economy. Over 90 percent of LACFL members whose labor agreements will be renegotiated in 2008 provide some type of service. The largest single industry is home health care services. In this paper we extrapolate the economic impacts for these 337,798 onto all 818,633 workers represented by the Los Angeles County Federation of Labor based on the assessment that these workers are roughly representative of LACFL's total membership.<sup>7</sup>

### What Occupations Do Union Members Fill?

By estimating the occupational make-up of LACFL's membership, we were also able to estimate their wages and the wage advantage they enjoy over non-union workers. The OES survey carried out by the State of California covers the first quarter of 2007 and provides detailed information about the occupations and wages of Los Angeles workers in each industry.<sup>8</sup> This data was used to estimate the occupations and wages of workers covered by each contract that ends in 2008.

An estimated breakout of the occupations held by 337,798 workers with contracts ending in 2008 is shown in Table 2. Four out of five workers are in pro-

Table 2  
**Estimated Occupations and Earnings**

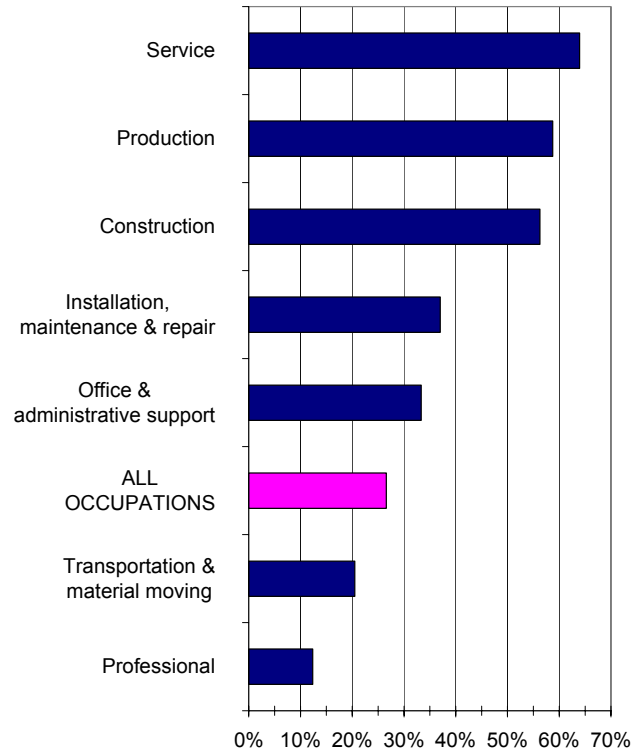
Code	Occupation	Members	2007 Wages
11-1021	General Managers	229	\$103,000
13-2011	Accountants & Auditors	810	\$70,000
13-2099	Financial Specialists	771	\$60,000
17-3099	Drafters & Engineering Techs	1,717	\$50,000
25-2021	Elementary School Teachers	12,207	\$65,000
25-2022	Middle School Teachers	2,627	\$65,000
25-2031	Secondary School Teachers	7,138	\$65,000
25-9041	Teacher Assistants	7,897	\$20,000
27-1010	Artists & Related Workers	12,158	\$67,000
27-2011	Actors	63,186	\$30,000
27-2040	Musicians and Singers	7,893	\$24,000
27-2099	Entertainers & Performers	1,660	\$38,500
27-3010	Announcers	4,080	\$53,650
27-3020	News Analysts & Reporters	5,022	\$76,000
29-1111	Registered Nurses	12,411	\$79,000
29-2061	Licensed Vocational Nurses	1,353	\$47,000
31-1011	Home Health Aides	120,000	\$26,800
31-1012	Nursing Aides & Orderlies	2,258	\$26,800
31-9092	Medical Assistants	356	\$30,000
31-9099	Healthcare Support Workers	1,383	\$30,000
33-1021	1st-Line Sup, Fire Fighters	819	\$139,500
33-2011	Fire Fighters	2,535	\$100,000
35-3022	Counter Attendants	3,823	\$8,000
37-2011	Janitors & Cleaners	10,578	\$25,000
39-6031	Flight Attendants	683	\$47,500
41-2011	Cashiers	434	\$18,000
43-1011	1st-Line Sup, Office Workers	1,946	\$55,000
43-4051	Customer Srv Representatives	1,442	\$40,000
43-4171	Receptionists	193	\$27,000
43-4181	Transportation Agents	486	\$40,000
43-5011	Cargo & Freight Agents	2,115	\$30,000
43-5021	Couriers & Messengers	2,487	\$36,800
43-5032	Dispatchers	697	\$50,000
43-5041	Meter Readers, Utilities	1,368	\$28,000
43-5061	Planning & Expediting Clerks	1,397	\$50,000
43-5081	Stock Clerks & Order Fillers	309	\$26,000
43-6013	Medical Secretaries	98	\$42,900
43-6014	Secretaries	141	\$42,900
43-9061	Office Clerks, General	6,858	\$35,000
43-9999	Other Office Support Workers	7,943	\$48,000
47-2111	Electricians	4,250	\$69,900
47-3013	Helpers--Electricians	1,350	\$32,000
47-2131	Insulation Workers	1,000	\$39,600
49-3011	Aircraft Mechanics	302	\$61,000
49-3031	Bus & Truck Mechanics	41	\$57,000
49-9012	Valve Installers & Repairers	522	\$42,500
49-9042	Maintenance Workers	246	\$50,000
51-3021	Butchers & Meat Cutters	51	\$29,000
51-8031	Waste Treatment Plant Ops	370	\$84,000
51-8092	Gas Plant Operators	522	\$100,000
53-3021	Bus Drivers	406	\$42,000
53-3032	Truck Drivers, Heavy	7,237	\$43,000
53-3033	Truck Drivers, Light	2,691	\$43,000
53-7062	Laborers & Material Movers	7,122	\$53,600
53-7064	Hand Packers	178	\$19,200
<b>Total Members and Average Earnings</b>		<b>337,798</b>	<b>\$41,682</b>

professional or service occupations. Professional occupations include entertainment industry workers, teachers and nurses. Service occupations include home health care workers, janitors and fire fighters. The estimated average annual earnings of these union members in 2007 is \$41,682.

*Wage Differential*

How much more do Los Angeles workers earn if they belong to a union? Our conservative estimate is that the wages of non-union workers are, on average, only 79 percent of the wages of union workers in the same occupations or, stated differently, union workers earn an average of 27 percent more than non-union workers.<sup>9</sup> The wage differential for union workers varies among occupations, with service workers enjoying the greatest wage advantage if they are unionized, as shown in Figure 1.

Figure 1  
Percent by which Union Wages Exceed Non-union Wages, by Occupation



Three occupational groups account for over 90 percent of the jobs covered by contracts that end in 2008. The estimated wage advantage of union workers over non-union workers in these occupational groups is:

- Service occupations 64%
- Office and administrative support occupations 34%
- Professional and related occupations 13%

These wage differentials may under-state the actual differential in Los Angeles' labor market because they were calculated using Current Population Survey (CPS) data for the State of California, which has three limitations. First, state level data was used to obtain a larger and more reliable sample of records for union members, but as a result the data is not specific to Los Angeles County. Second, even at the state level the sample of records for union members is small and therefore less reliable than we would like. And, third, the survey may under-sample jobs in the informal economy, which are estimated to account for 15 percent of wage and salary employment in Los Angeles and have a very low wage floor in the service sector. Census Bureau data show a much wider range in wages than CPS data in the occupations held by union members in Los Angeles, but we have chosen to use CPS data because it is one of the few sources that specifically identifies union members.<sup>10</sup>

## Amount of Earnings

Using the estimated wage differential for union vs. non-union workers we are able to identify the wage benchmark that represents union workers' standing within the wage range for their occupations. This benchmark is the 75<sup>th</sup> percentile wage level for each occupation. When we apply the wage differential for non-union workers to this benchmark the overall result is to place non-union workers at close to the median wage for each occupation.<sup>11</sup> The occupational wages for union members shown in Table 2 reflect the result of these estimates. We estimate that in 2007 the total earnings of LACFL members will equal:

- **\$14,079,941,802** for the 337,798 workers whose contracts end in 2008
- **\$34,121,886,444** for all 818,633 workers represented by LACFL

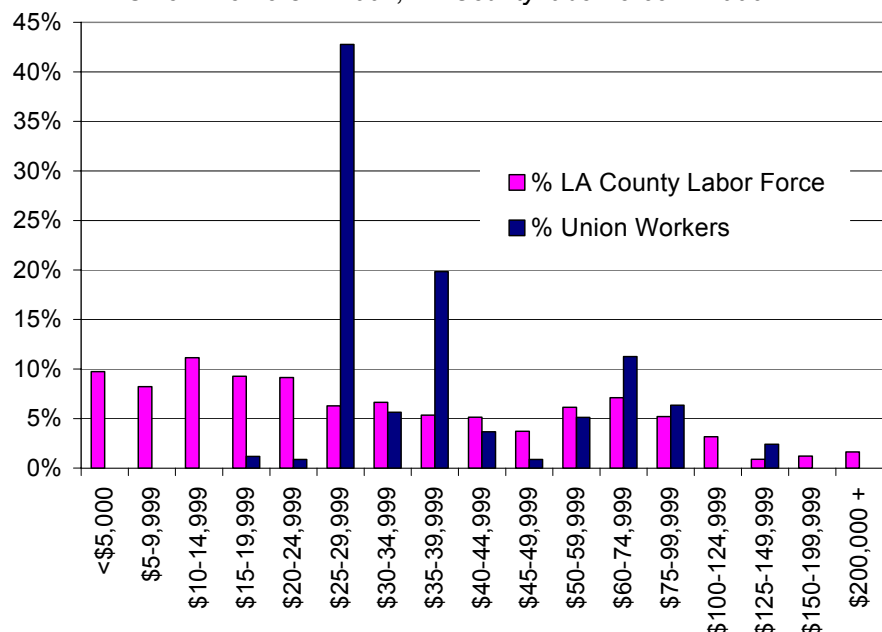
We estimate that the amount by which the earnings of LACFL members exceed the earnings of non-union workers in the same occupations will equal:

- **\$2,971,005,324** for 337,798 workers with contracts ending in 2008
- **\$7,200,051,513** for all 818,633 LACFL workers

The wage distribution of union workers overlaid on the distribution for LA County's total labor force is shown in Figure 2. The most striking feature of this distribution is the large number of union workers with earnings in the \$25,000 to \$30,000 range, at the fringes of poverty. Most of these workers are employed in service occupations such as home health care workers where wages for non-unionized workers are much lower.

The second-largest group of union workers has earnings in the \$35,000 to \$40,000 range. This group includes many entertainment industry workers. The third-largest group has earnings in the \$60,000 to \$75,000 range. This group includes teachers and electricians. These three groups of workers occupy and help populate the "missing middle" in LA's labor market.

Figure 2  
Union Workers and LA Labor Force by Annual Wages  
Union Workers in 2007, LA County labor force in 2006



*Impacts of Wages in the Local Economy*

How many jobs are created when union workers spend the wages they have earned? Workers' earnings are spent on things such as housing, restaurants, health care, retail goods, transportation, entertainment, and savings. This spending reverberates throughout the economy, benefiting not only stores, restaurants and hospitals but also their

suppliers and their workers' households. Local businesses increase their own demand for labor and supplies, generating "indirect output" in the local economy. Subsequently, the increased income accruing to the employees of local businesses leads to their increased household spending, generating "induced output" in the local economy. Input-output economic modeling is a tool for estimating the economic ripple effects of union workers' earnings in LA's economy.<sup>12</sup>

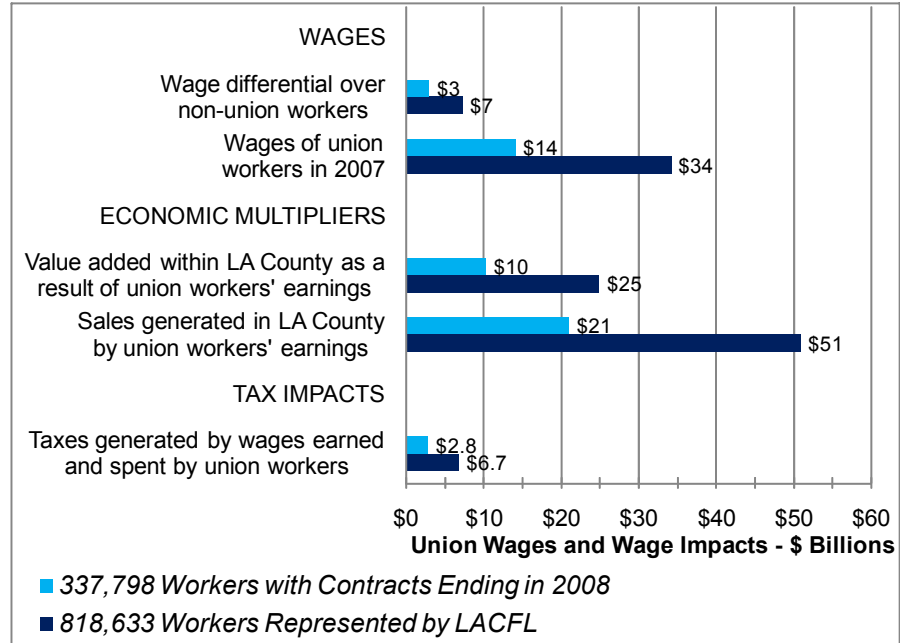
When we use an input-output model of LA's economy to look at the impacts of union workers spending the wages they earn, we see that one new job is created in LA's economy as the result of the wages spent by two and two-thirds union members.<sup>13</sup> The estimated job creation impacts of wages earned by LA's union workers are:

- **126,700 jobs** created in 2007 by the earnings of 337,798 workers with contracts ending in 2008
  - This is *26,700 more jobs* than would be created if these workers did not earn union wages
- **307,100 jobs** created in 2007 by all 818,633 members of the Los Angeles County Federation of Labor
  - This is *64,800 more jobs* than would be created if these workers did not earn union wages

The expenditure of union earnings by the households of these workers stimulates the following impacts that are shown in Figure 3:

- **\$21 billion** in sales because of spending by 337,798 members with contracts ending in 2008

Figure 3  
Economic Impacts in 2007 of Wages Earned by Union Workers



- This includes \$10 billion in value added within LA County
- \$51 **billion** in total sales because of spending by all 818,633 LACFL members
  - This includes \$25 billion in valued added within LA County
- \$21 **billion in sales to the 337,798 members with contracts ending in 2008**
- \$3 **billion in taxes to all levels of government as a result of wages earned and spent by 337,798 members with contracts ending in 2008**
- \$7 **billion in taxes to all levels of government as a result of wages earned and spent by all 818,633 LACFL members**

*Impacts of Worker Productivity*

The greatest economic impacts of union workers result from the economic multipliers of their work productivity. Each worker is part of an *interdependent economic network*. The work of one employee creates a demand for more goods or services to be produced by another employee at a supplier company (indirect multipliers). And the wages earned by both groups of workers increase the amount of household consumption in the local economy (induced multipliers). The network of interdependency linked to the 337,798 workers whose contracts end in 2008 encompasses 12 percent of LA’s economy, as shown in Table 3. The network of economic interdependency of all 818,633 union workers encompasses roughly 30 percent of LA County’s economy. The scope of economic activity that relies on union workers includes:

- 1.6 million workers, or 30 percent of all jobs, including self-employed workers
- \$34 billion in employee compensation, or 31 percent of all wages earned by employees
- \$29 billion in income to business owners, or 28 percent of all owner income
- \$113 billion in economic output, or 28 percent of LA County’s total output
- \$68 billion in added value created with LA County, or 29 percent of all value added activity

It is informative to see the industries where the greatest interdependencies with union workers exist. Figures 4 and 5 show the economic output and employment that are generated by the jobs of LA’s 818,633 union workers in 2007. The economic output dependencies shown in Figure 4 include:

- \$17 billion dollars in annual sales from supplier companies in the Motion picture and video industry that is used in work done by union members.

Table 3  
Share of LA’s Economic Activity Linked to Union Workers

<b>Aspect of LA's Economy</b>	Productive Impacts of Workers with Contracts Ending in 2008	Productive Impacts of All LACFL members
Total Employment including self-employed and informal jobs	12%	30%
Employee Compensation	13%	31%
Total Output or Sales in LA County	11%	28%
Value Added within LA County	12%	29%
Income to Business Owners	12%	28%

- \$7 billion in mortgage payments by union workers and workers at supplier companies for homes they are purchasing.
- \$5 billion in wholesale trade, 70 percent of it to meet the needs of workers' households.

The job creation linkages shown in Figure 5 include:

- 69,000 jobs created in supplier companies for the Motion picture and video industry that provide goods and services required for the work done by union members.
- 66,000 jobs created in restaurants meals provide meals for the households of union workers and workers employed at companies supplying goods and services needed for their work.

Figure 4  
Industries with the Most Economic Output Generated by Linkages with Union Workers

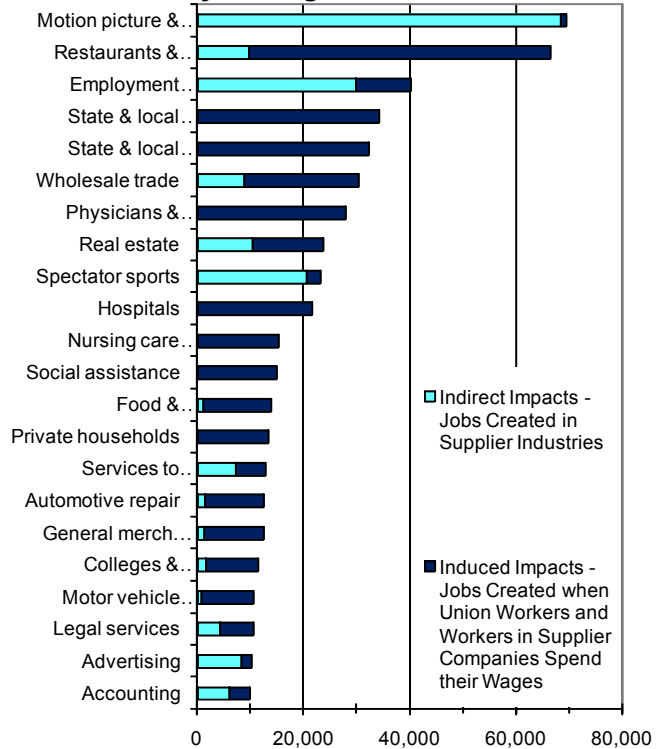
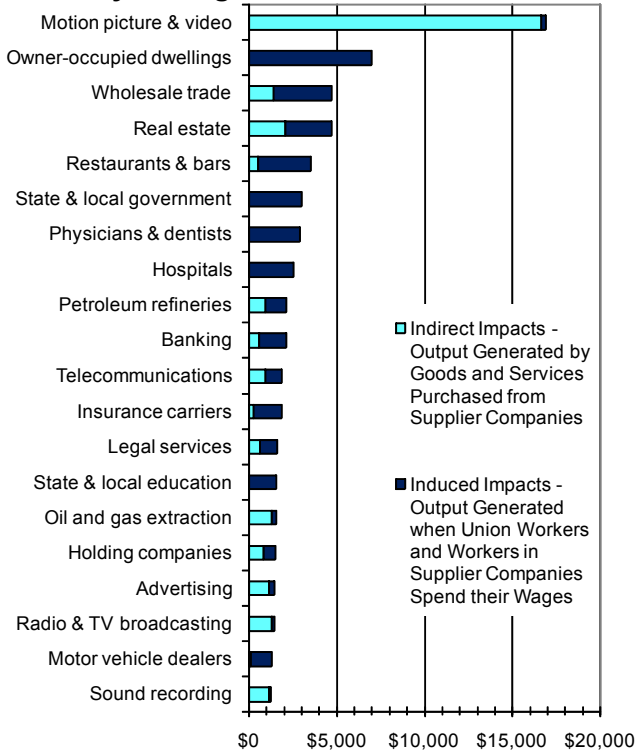


Figure 5  
Industries with the Most Jobs Created by Linkages with Union Workers



Linked Output in 2007 - \$ Millions

### Tax Impacts

Jobs Created in 2007

Through their own earning and spending as well as their productivity linkages with supplier industries, the 818,633 union workers in Los Angeles are estimated to generate \$32 billion dollars in tax payments in 2007. This includes \$20 billion in taxes to the federal government and \$12 billion in taxes to state and local government.

### Overall Impacts on Regional Job Growth

One objection sometimes raised to union organizing is that success in winning higher wages and better working conditions for members will reduce the number of available jobs

because demand for the goods and services produced by union members will decline as costs increase, and this harm will outweigh the good done by improving workers' terms of employment. The rebuttal is that unions help create a more socially equitable and sustainable community and that the higher earnings of union workers stimulate increased demand for local goods and services. It is beyond the scope of this paper to assess whether the higher earnings of union members have slowed growth of any of the industries where these workers are employed, however three relevant facts emerge from this study:

1. Many union members are employed in industries with high levels of informal employment and high rates of poverty among workers. In these industries the organizing activity of Los Angeles unions is accomplishing outcomes that have been neglected by the public sector – bringing employers into the formal economy and into compliance with labor and tax laws. Furthermore, union wages bring many workers out of poverty.
2. Over 90 percent of Los Angeles union members are employed in the service sector, which is less sensitive, though not immune, to cost-based competition from other regions.
3. The wage differential received by union members stimulates a significant amount of economic growth in Los Angeles – 64,800 jobs and \$11 billion in annual economic output in Los Angeles County.

Los Angeles labor unions are the most influential and socially accountable institution to engage many of the industries that employ the region's working poor residents. Given this, the challenge for unions goes beyond organizing workers. There is a need to build long-term strategies for an economically sustainable labor force.

### *Conclusions*

1. The need to raise the wage floor under low-wage workers is particularly acute in Los Angeles. Unions are the most important institutional force in addressing this need.
2. Union workers earn an average of 27 percent more than non-union workers. The wage differential for union workers varies among occupations, with service workers enjoying the greatest wage advantage if they are unionized.
3. In 2007 the earnings of Los Angeles union members exceed the earnings of their non-union counterparts in the same occupations by:
  - a. \$2,971,005,324 for 337,798 workers with contracts ending in 2008
  - b. \$7,200,051,513 for all 818,633 LACFL workers
4. Union workers occupy and help populate the *missing middle* in Los Angeles County's labor market.
5. The wages earned by LA's union workers in 2007 total \$34 billion. the expenditure of these earnings is stimulating:
  - a. \$51 billion in total sales

- b. Creation of 307,100 jobs; 64,800 more jobs than would be created if these workers did not earn union wages
  - c. \$7 billion in taxes to all levels of government
6. The network of economic activity that relies on LA's 818,633 union workers encompasses roughly 30 percent of the county economy, including:
- a. 1.6 million workers, or 30 percent of all jobs, including self-employed
  - b. \$34 billion in employee compensation, or 31 percent of all wages
  - c. \$29 billion in income to business owners, or 28 percent of owner income
  - d. \$113 billion in economic output, or 28 percent of LA County's total output
  - e. \$68 billion in added value, or 29 percent of LA's value added activity
  - f. \$32 billion dollars in tax payments in 2007, including \$20 billion to the federal government and \$12 billion to state and local government.

## End Notes

<sup>1</sup> Milkman, Ruth and Bongoh Kye, *The State of the Unions 2007: A Profile of Union Membership in Los Angeles, California and the Nation*, p. 1, UCLA Institute for Research on Labor and Employment, September 2007

<sup>2</sup> The California Employment Development Department Labor Market Information Division reports 4,149,500 wage and salary jobs in 1990 and 4,100,200 in 2006; <http://www.labormarketinfo.edd.ca.gov/cgi/databrowsing/?PageID=4&SubID=166>, *Los Angeles Industry Employment and Labor Force by Annual Average*, March 2006 Benchmark, downloaded November 4, 2007.

<sup>3</sup> Economic Roundtable, *Hopeful Workers, Marginal Jobs*, Los Angeles, 2005.

<sup>4</sup> U.S. Census Bureau, American Community Survey, 2006, Table B17002, *Ratio of Income to Poverty Threshold in the Past 12 Months*, Los Angeles County: 27% of residents have incomes below 150% of the poverty threshold. Table B20001, *Sex by Earnings in the Past 12 Months*, Los Angeles County, 54% of residents with earned income in the past 12 months earned under \$30,000. Based on the poverty threshold for 2006 established by the U.S. Census Bureau, Housing and Household Economic Statistics Division, 150% of the poverty threshold for a family of four was \$30,666.

<sup>5</sup> Median rent and income data for the City of Angeles is from the U.S. Census Bureau's decennial census for 1990 and 2000 (income for 1989 and 1999), and the American Community Survey for 2003 to 2006.

<sup>6</sup> U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Accounts, *BEARFACTS 1995 – 2005, Los Angeles, California (06037)*, <http://www.bea.gov/regional/bearfacts/action.cfm>.

<sup>7</sup> The Los Angeles County Federation of Labor represents a total of 818,633 workers. Industry classifications for the employers of the 337,798 workers whose contracts expire in 2008 were derived from a contract-by-contract analysis. NAICS industry classifications were assigned to each contract along with BEA sector classification for use in input-output modeling. An industry-occupation matrix was used to identify the major occupations employed in each industry and the share of total industry employment accounted for by each occupation. Estimates of economic impacts for the 337,798 workers with contracts up in 2008 were projected onto all 818,633 LACFL members through a linear extrapolation, based on the assessment that these 337,798 workers are generally representative of the total population of represented workers. Members of each local with a contract ending in 2008 are broken out by BEA sector in Table A.

Table A  
Industries Employing 337,798 LACFL Members with Contracts Ending in 2008

U.S. Bureau of Economic Analysis Industry Sectors

Local	31 Natural gas distribution	32 Water-sewage systems	38 Commercial construction	391 Air transportation	394 Truck transportation	395 Ground passenger trans.	397 Transportation logistics	399 Couriers & messengers	405 Food & beverage stores	418 Motion picture & video	419 Sound recording	420 Radio & TV broadcasting	458 Services to buildings	464 Home health care srv.	465 Physicians- dentists	467 Hospitals	503 State & local education	504 State & local gov.
AFSCME 1902		1,250																
AFSCME 3299																	2,000	
AFSCME 3634						600												
AFSCME UNAC																600		
AFT 1521																	5,000	
AFT 1521a																	1,200	
AFTRA										12,000	7,200	16,800						
Asbestos Workers			1,000															
FF 1014																		3,000
FF 372																		400
IBEW 11			5,600															
IBT 396, 63								13,000										
IBT 63					800													
ILWU 13, 63, 94							10,000											
SAG										58,000								

SEIU 1000																			12,000
SEIU 1877													8,000						
SEIU 99																	30,000		
SEIU ULTCW 6434													120,000						
SWIU 721																			1,400
Teamsters 396						550													
TWU 502				1,500															
TWU 564				850															
UFCW 324																	900		
UFCW 770, 324									1,000										
UHW																979	16,969		
UWUA 132	5,200																		
Total	5,200	1,250	6,600	2,350	1,350	600	10,000	13,000	1,000	70,000	7,200	16,800	8,000	120,000	979	18,469	38,200	16,800	

<sup>8</sup> The California Employment Development Department, Labor Market Information Division under the auspices of the U.S. Department of Labor Bureau of Labor Statistics produced Occupational Employment Survey (OES) Wage Survey data for Los Angeles County covering the First Quarter of 2007. The OES program produces employment and wage estimates for about 700 occupations found in Los Angeles' labor market, including: Mean Wage, 10th Percentile Wage, 25th Percentile Wage, 50th Percentile (Median) Wage, 75th Percentile Wage, and 90th Percentile Wage. The Internet source for this data is: <http://www.labormarketinfo.edd.ca.gov/cgi/dataanalysis/AreaSelection.asp?tableName=Oeswage>

<sup>9</sup> Current Population Survey (CPS) data for California in March 2007 was used to estimate the wage differential between represented and unrepresented workers. Records for the entire state of California rather than just for Los Angeles County were used in order to provide an adequate sample of represented workers, stratified by major occupational group. The sample of represented workers includes records civilian employees currently at work who are union members or covered by a union contract. Each occupation within each union was assigned a major occupational group classification corresponding to CPS coding along with the wage differential for that occupational group. CPS occupational groups and wage differentials are shown in Table B. The number of CPS records for each occupational group is also shown. The number of CPS records for some occupations such as sales is quite small, even at the state level, resulting in a large margin of uncertainty for those occupations.

Table B  
Wage Differential between Represented and Unrepresented Workers

Major Occupational Group	CPS Data for California	
	Wages of Unrepresented Worker as % of Represented Workers	Number of CPS Records of Represented Workers
Management, business, and financial occupations*	*89%	17
Professional and related occupations	89%	56
Service occupations	61%	35
Sales and related occupations	104%	5
Office and administrative support occupations	75%	32
Construction and extraction occupations	64%	15
Installation, maintenance, and repair occupations	73%	8
Production occupations	63%	13
Transportation and material moving occupations	83%	12
<b>ALL WORKERS</b>	<b>79%</b>	<b>193</b>

\* CPS wage data is not available for management occupations so the wage differential for professional occupations was applied to these workers.

<sup>10</sup> The Public Use Microdata sample from the Census Bureau's 2006 American Community Survey (ACS) shows a much wider wage spread in LA's labor market than is shown by OES (Occupational Employment Statistic wage survey conducted by the California Employment development Department for the U.S. Bureau of Labor Statistics - a survey of employers in the formal labor market) data or CPS data. ACS data for workers stratified by occupation shows that median wages are only 59 percent of 75th percentile wages vs. 75 percent in OES data.

The issue of wage spread within occupations between workers in the formal labor market compared to workers in the informal economy is relevant to this study. The Los Angeles County Federation of Labor represents janitors, hotel workers, truck drivers, home health care workers, and construction workers who receive much higher wages than they would be likely to receive without union representation, particularly given the large number of informal workers in these occupations. Many of these occupations have a very low wage floor. Occupational wage differentials derived from CPS data and used for this study appear to present a conservative measure of the actual occupational wage spread between represented and unrepresented workers in Los Angeles' labor market, as shown in Table C. Census wage data shows a much wider spread between workers on the upper rungs of the wage ladder and those on the bottom or middle rungs than OES wage data.

Table C  
Wage Spread between Wage Bands within Occupations – ACS vs. OES Wage Data for Los Angeles County

<i>Occupational Wage Bands being Compared</i>	<i>Data Source</i>	
	<i>Census Bureau ACS 2006 PUMS</i>	<i>OES Wage Survey 1<sup>st</sup> Qtr 2007</i>
25 <sup>th</sup> percentile wages as percent of 75 <sup>th</sup> percentile wages	31%	59%
Median wages as percent of 75 <sup>th</sup> percentile wages	59%	75%

<sup>11</sup> The wages of union workers were estimated to be at the 75th percentile of each occupation, as reported by the California Employment Development Department's Labor Market Information Division, based on the OES survey of wages in the Los Angeles County for the first quarter of 2007. The wage spread between the 75th percentile and the median closely approximates the wage spread shown by CPS data. For the occupations held by LACFL members, the median wage is 74.5% of the 75<sup>th</sup> percentile wage. This gap is similar to the 79 percent gap shown by CPS data, and because 75<sup>th</sup> percentile wage data is available, we have used that wage level in estimating the wages of union members. We then used the occupational differentials shown in Table B above to estimate the wage level of nonunion workers. The overall effect of this estimating procedure is to place the wage level for nonunion workers at close to the median for each occupation.

<sup>12</sup> The basic concept of input-output modeling is that production of goods and services occurs through industry networks in which outputs from some industries become inputs for others in a chain of value-added relationships. The input-output model replicates this value-added chain in a very large matrix derived from industry reports of sales and purchases between all sectors of the economy. Input-output analysis is a powerful tool for revealing the total economic impacts of different industries in:

- Creating jobs through direct employment, linked industries, and consumer industries fueled by purchases of directly employed workers.
- Producing output in anchor industries, linked industries, and consumer industries supplying worker needs.
- Generating taxes for local government in the form of property, sales, excise and severance taxes, and business fees and licenses.
- Attracting wealth from outside the region and creating positive trade balances, as reflected by the percent of output made up of imports compared to percent of output that is exported.

Input-output modeling produces estimates of the extent to which the ripple effects of an economic activity multiply the impact of the initial activity. Multipliers are one of the most useful measures of an industry's total economic impacts. Multiplier analysis is used to estimate the regional economic impacts resulting from a specified change in demand for a commodity. Typically, three types of economic "effects" are identified:

- Direct Effects are production changes associated with the immediate effects of final demand changes. For example, if consumer spending on commodity A increases by one million dollars, then the industry producing commodity A must expand output by one million dollars.
- Indirect Effects are production changes in industries that make inputs consumed by sectors experiencing direct effects. For example, if the output of commodity A expands by one million dollars, and if commodities B and C are used as inputs in the production of commodity A, then the output of commodities B and C will also increase with an expansion in demand for commodity A. The production of commodities B and C also consumes inputs that have to be produced, and so this multiplier process continues across many sectors and rounds of production.
- Induced Effects are production changes that result from increased consumer spending throughout the regional economy. Labor is an input in all sectors of the economy. As direct and indirect effects demand greater volumes of output be produced within the economy, so additional labor is used. A portion of the wages received by workers performing this labor is spent within the region, thus stimulating further demand.

<sup>13</sup> Information about economic impacts of union workers in Los Angeles County was produced using IMPLAN input-output software to create a model of the economy of each region, using 2004 IMPLAN data for the county. IMPLAN is an economic impact assessment software system created by the Minnesota IMPLAN Group. The IMPLAN system serves three functions: 1) data retrieval, 2) data reduction and model development, and 3) impact analysis. The IMPLAN database consists of two major parts: 1) a national-level technology matrix and 2) estimates of sectorial activity for final demand, final payments, industry output and employment for each county in the U.S. along with state and national totals. Input-output accounting describes commodity flows from producers to intermediate and final consumers. Using county-level data provided by IMPLAN it is possible to estimate each industry's: total purchases of commodities and services, employment, compensation to employees and owners, value added, tax payments, and imports. Purchases for final use (final demand) drive the model.

The wages of union members were allocated to Sector 1007, households with incomes of \$75,000 to \$100,000 based on the estimate that this income range is representative of the total income of the typical union household. Allocation of union wages to another income group results in some differences in the industries impacted by household spending but the differences in overall impacts are negligible. The institutional demand sectors used in creating the Social Accounting Matrix multipliers were: all Household income sectors, State and local government non-education, and State and local government-education. Inclusion of the government sector reflects the assumption that Los Angeles County receives a fair-share return on local and state taxes. The job impacts projected by the 2004 IMPLAN input-output model were discounted by 11.4% to account for a probable increase in the dollars-to-jobs ratio from 2004 to 2007. The 11.4% factor is based on changes in the Consumer Price Index from the first half of 2004 to the first half of 2007. This is the only modeling scenario in this study where jobs generated by 2007 dollars are estimated and therefore is the only scenario in which this discounting step is necessary. All other scenarios involve dollars-to-dollars or jobs-to-dollars projections.