Private Sector Payroll Employment Developments in the City of Long Beach

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Contents

Introduction

Understanding the kinds of industries that make up a local economy and measuring trends in employment among those industries provides important insight into the nature of economic growth and workforce requirements within a community. The industrial structure of a city or region exerts a powerful influence on not only the living standards of that community, but also on the characteristics of residents who reside within that community. Communities dominated by industries like professional, scientific, and technological services and health services are much different than those with employment concentrated in goods producing industries or communities primarily devoted to travel and tourism. The first is likely to be a high-earnings, high housing price area with a workforce with well above average shares of college graduates. The second is more likely to be a community closer to the middle of the earnings distribution, with more modest housing prices and a workforce with substantial, but not above average share of employment concentrated among college graduates. The last is more likely to be a below average earnings community with a low-skilled workforce.

This paper examines the industrial composition of private sector employment in the city of Long Beach and trends in specific industry employment and wages between 2008 and 2016. This period covers most of the current business cycle including the Great Recession that began at the end of 2007, through the bottom of the downturn and the subsequent recovery, to 2016, the most recent year for which data are available.

It should be noted the economic outlook is best understood when it is put in the context of jobs, wages and labor supply. This analysis reflects substantial opportunity for the City of Long Beach, with material job growth in key sectors along the economic continuum. In the higher-wage spectrum, manufacturing and aerospace growth along with increases in scientific and technical jobs, are areas of substantive opportunity that may be capitalized upon if workers are available to fuel continued growth. Further, growth in healthcare, particularly outpatient care and skilled nursing, and professional and business services, offer career pathway opportunities for residents who are currently underutilized. Growth in the retail trade provides avenues for early work experience, which is core to any forward-looking workforce development strategy.

A Note on the Data Source

The data used in this paper were derived from a set of special tabulations prepared by the California Department of Employment Development (EDD). In cooperation with the U.S. Bureau of Labor Statistics, EDD prepares statewide and county level measures of all employment covered under the California unemployment insurance statute as part of the federal-state Quarterly Census of Employment and Wages (QCEW) statistical program. Each calendar quarter, all economic establishments (private for profit, non-profit, and government entities) are required to file unemployment insurance tax reports that include counts of the number of persons who are on the establishment's payroll as well as their wages in each month of the quarter. Every economic establishment in the state is assigned to a specific industry based on the nature of final goods and services produced. So, for example, community hospitals are assigned to the medical surgical hospital industry, which is itself a subset of the healthcare and social services sector. Trucking businesses moving freight are assigned to a part of the transportation sector.

Since the QCEW data is essentially a complete count of all employment in the state, when properly analyzed, it can present a very detailed picture of the nature of employment, not only state wide, but on a local basis as every economic establishment is geo-coded as well as assigned a specific industry code. EDD as a matter of practice does NOT produce data below the county level. However, under special contractual agreement, EDD will prepare special tabulations below the county level. This is not a matter of normal practice at EDD and the task of creating these specialized tabulations is in fact quite complex, but we are at a loss to explain inconsistencies among similar tabulations. For example, EDD recently provided 2016 data to another firm doing an economic analysis for the City of Long Beach; our data reflect 3,221 *more* jobs in the geography with a different industry distribution. Our staff worked diligently for months with EDD to produce consistent tabulations for the City of Long Beach that we utilize in this paper.

We have been careful in our use of the QCEW data as it is not organized as a time series. This means that establishments may be reassigned from one industry to another or from one location to another because of errors that crop up in any large-scale data reporting system. These changes are often associated with clerical errors like getting a better address for the location or finding out that the establishment was erroneously assigned to an industry. A time series accounts for these changes in a careful way that makes corrections to the historical record, but

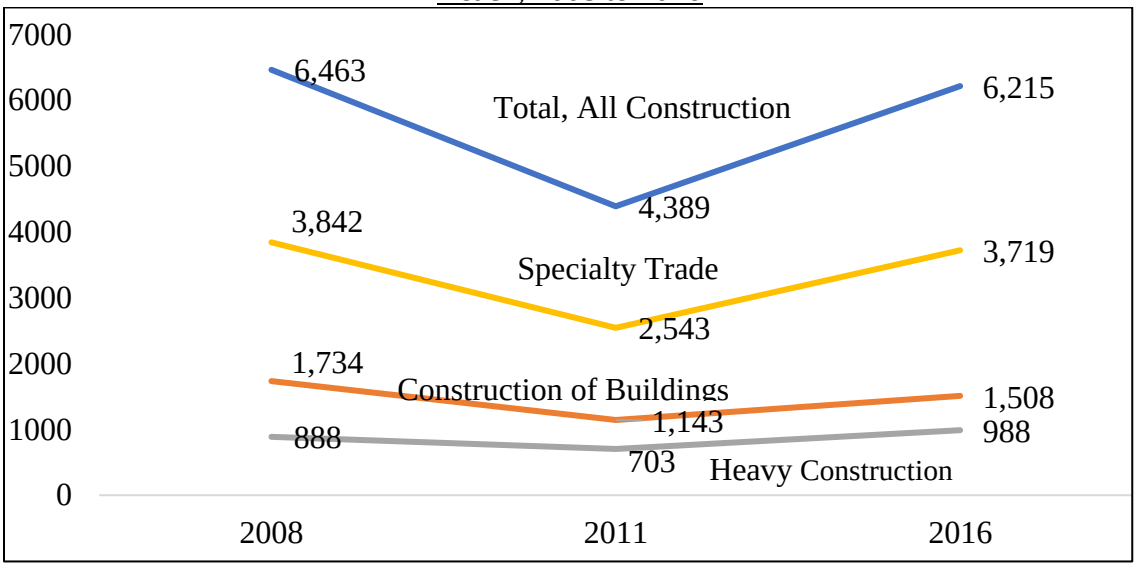
the QCEW data are not a time series. This means that year to year changes in measured employment we find in the data that were provided us by EDD can occur for both economic and non-economic reasons.

Given these limitations for QCEW employment and wage data we established a set of data review procedures that designed to minimize (but unable to eliminate) the chance of non-economic change measurement error. It is also important to note that since these special tabulations are not regularly produced by EDD they are subject to other estimation methods errors. We worked very intensively with EDD to correct estimation errors that we detected in our data quality review.

Construction

The construction sector is generally characterized by sharp swings in output and employment that are associated with changes in the nation's business cycle. Construction employment tends to rise at an above average pace during periods of economic expansion, but often falls sharply during economic recession. Following the construction boom of the early 2000s, the nation's (and California's) construction sector posted large employment losses

Chart 1:
Trends in Annual Average Construction Industry Covered Employment in the City of Long Beach, 2008 to 2016



Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations

associated with the housing bubble collapse in early 2006.[1] Employment in the city of Long Beach construction sector followed a similar pattern of decline. Between 2008 and 2011, overall employment among Long Beach businesses that engaged in construction employment declined by 28 percent, a loss of nearly 2,200 jobs by 2011. Losses were especially large among the city's specialty trade contracts who accounted for almost two-thirds of the city's construction sector losses.

The rebound in construction industry employment through 2016 was insufficient to recoup all of the industry's earlier job losses. The recovery in specialty trades and construction of buildings were not strong enough to return employment levels to their 2008 levels. However, the heavy construction industry was able to overcome the effects of the Great Recession entirely, and by 2016 employed 100 more workers than in 2008.

The construction industry in Long Beach is composed of a substantial number of small business establishments. Each of these business establishments employs a relatively small number of workers distributed over seven different kinds of firms who all engage in different aspects of the construction enterprise in Long Beach.

The typical construction establishment in Long Beach is a specialty trade contractor. About one in four construction jobs located in the city are involved in specialty trade contracting

Table 1:
Trends in Employment within Specific Industry Segments of the City of Long Beach Construction Sector, 2011 to 2016 Annual Averages

	2011	2016	Change	Percent Change
Residential Building Construction	581	761	180	31%
Nonresidential Building Construction	562	747	185	33%
Utility System Construction	279	605	327	117%
Foundation, Structure, and Building Exterior Contractors	480	528	48	10%
Building Equipment Contractors	800	1,093	293	37%
Building Finishing Contractors	465	482	18	4%
Other Specialty Trade Contractors	799	1,616	817	102%

Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations.

[1] The U.S. Bureau of Labor Statistics suggests that the housing bubble burst in 2005. See Kathryn Byun, "The U.S. Housing Bubble and Bust: Impacts on Employment," *Monthly Labor Review,* U.S. Bureau of Labor Statistics, December, 2010

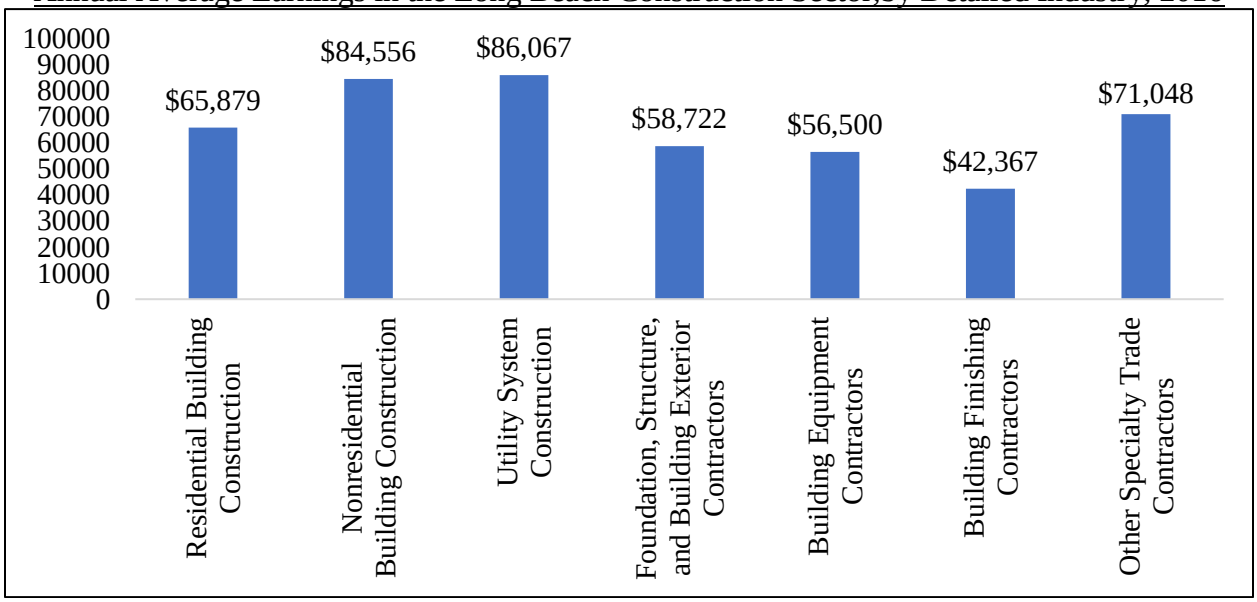
including the contracting for buildings additions, altering and improving interiors and exteriors of existing residential and commercial buildings, as well as engaging in maintenance and repair activities for structure.

The other specialty trade contractors in Long Beach experienced very rapid growth over the course of the economic recovery, adding more than 800 jobs and doubling employment levels. Utility system construction, part of the heavy construction industry, also experienced a steep rise in employment levels over this period. Utility system construction includes firms working in water and sewer construction, oil and gas pipelines, and power and communication related construction.

Building construction posted more modest, but still quite strong job gains over this period of the recovery. Firms in the residential construction industry build single and multi-family homes, while producers in non-residential construction build new industrial and commercial facilities.

Those employed in wage and salary jobs in the city's construction industry generally have relatively high earnings. Both non-residential construction and utility construction payroll employees have annual earnings in the mid-$80,000s range. In the rapidly growing other specialty contractor industry, employers in Long Beach paid an average of $71,000 per worker during 2016.

Chart 2:
Annual Average Earnings in the Long Beach Construction Sector,by Detailed Industry, 2016

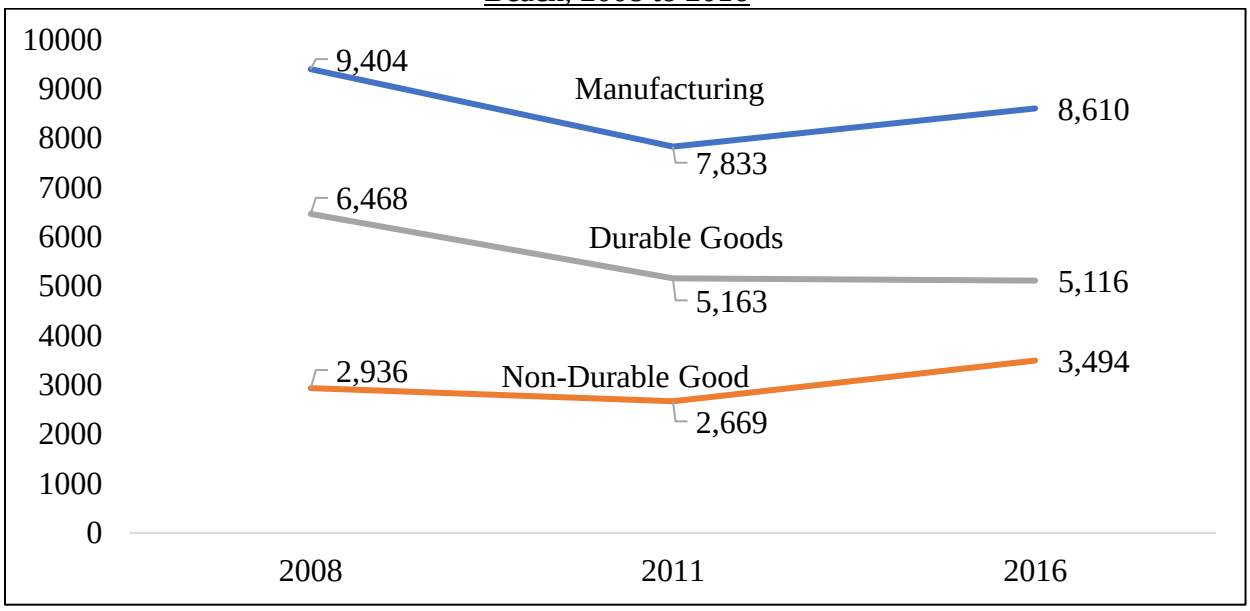


Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations.

Manufacturing

Manufacturing employment in Long Beach accounted for about 5 percent of total covered payroll employment in the city during 2016. Over the course of the economic recession, manufacturing employment in the city declined sharply, falling from 9,400 jobs in 2008 to just over 7,800 by 2011, a 16 percent loss. Much of this decline was among the city's durable goods producers, where employment fell by one-fifth during the economic downturn. Non-durable manufacturing producers' job losses were much less severe, employment among non-durable goods firms fell by a still steep 9 percent over the three year period. The city's manufacturing sector did rebound, but by 2016, overall manufacturing employment was still well below its 2008 level. The sluggish recovery in the city's manufacturing sector was associated with essentially no net job gains among goods producing firms, instead the manufacturing recovery in Long Beach was heavily concentrated among non-durable goods producers, who experienced quite strong job growth during the recovery.

Chart 3:
Trends in Annual Average Manufacturing Industry Covered Employment in the City of Long Beach, 2008 to 2016



Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations,

Non-durable manufacturing in Long Beach is dominated by three specific industries: food manufacturers, apparel producers, and plastics and rubber products producers. Together

these three industries accounted for the lion's share of employment growth among Long Beach non-durable goods producers in recent years. Both apparel and plastics manufacturing producers appear to have posted strong employment gains over the past five years, further exploration of developments in these industries is certainly warranted.

Table 2:
Trends in Employment within Specific Industry Segments of the City of Long Beach Manufacturing Sector, 2011 to 2016 Annual Averages

	2011	2016	Change	Percent Change
Food Manufacturing	607	676	69	11%
Apparel Manufacturing	197	551	354	179%
Plastics and Rubber Products Manufacturing	251	645	394	157%
Fabricated Metal Product Manufacturing	827	990	162	20%
Machinery Manufacturing	270	247	-23	-9%
Computer and Electronic Product Manufacturing	628	321	-307	-49%
Transportation Equipment Manufacturing	2,205	2,274	69	3%
Furniture and Related Product Manufacturing	304	331	27	9%
Miscellaneous Manufacturing	384	490	106	28%

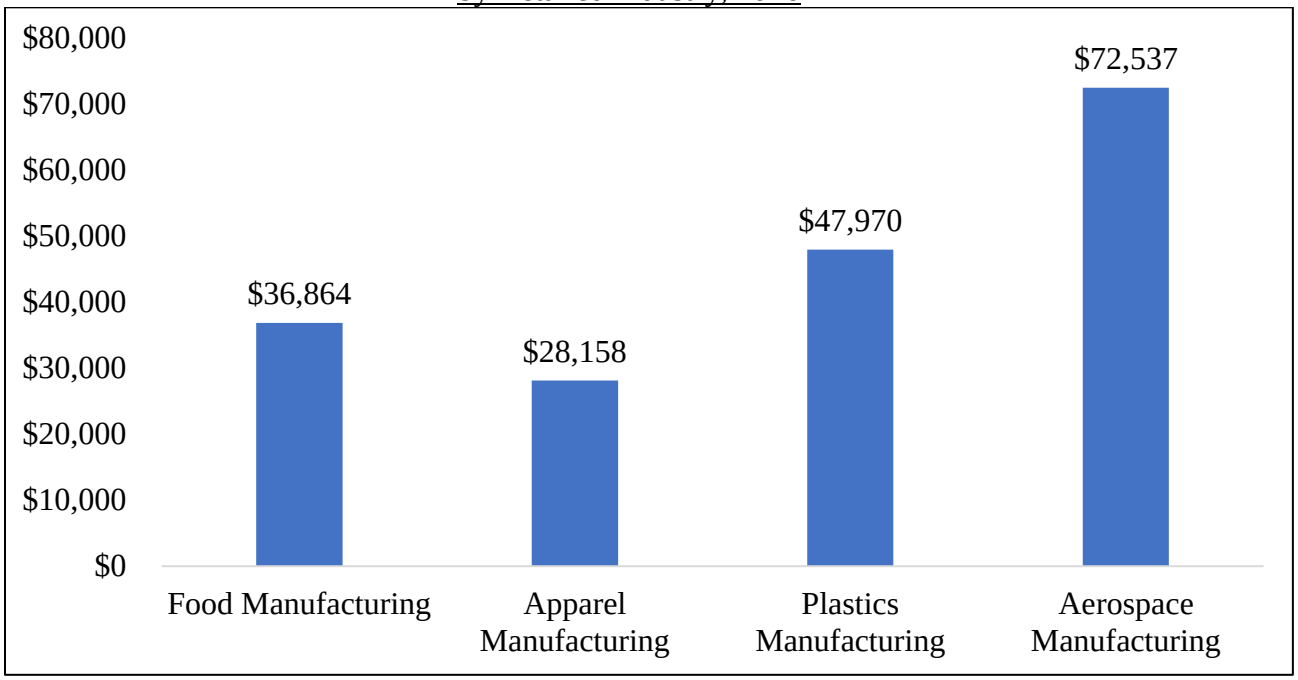
Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations,

The largest component of durable goods manufacturing in Long Beach is in the transportation manufacturing sector accounting for about 45 percent of all durable good jobs in the city. Fabricated metals manufacturers account for an additional 20 percent of durable goods employment in the city. Machinery manufacturing and computer and electronics producers round out the Long Beach durable goods industry.

Given its size it is important to gain some understanding about the various elements of the city's transportation firms. Employment measures that examine specifics about the city's transportation producers are spotty and the data we rely on to measure transportation industry employment are suppressed on the data file we received. Only one motor vehicle producer is located in the city, but this firm is a large employer who reported some labor supply problems in a meeting held by Pacific Gateway staff about producer constraints on growth.

Aerospace products and parts manufacturing establishments is the second key component of the city's transportation industry. Fortunately, employment measures are available for aerospace producers. These firms have posted strong employment gains over the course of the economic recovery. Only 12 establishments are engaged in aerospace manufacturing activities in Long Beach, but they employ over 1,400 wage and salary workers. Aerospace employment in the city has expanded by 20 percent during the economic recovery. Pacific Gateway discussions with producers in the aerospace industry reveal plans for substantial employment expansion in several firms that will drive up the demand for requirements for a variety of machining, metal fabrication, and various finished craft proficiencies including woodworking, painting, and upholstering skills.

Chart 4:
Annual Average Earnings in the Long Beach Manufacturing Sector,
by Detailed Industry, 2016



Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations,

The mean annual earnings of workers in manufacturing firms in Long Beach varies sharply by industry. Generally, wages in non-durable manufacturing firms are substantially below those paid by durable goods manufacturers, in large part as a result of much different staffing requirements between durable and non-durable firms. Apparel producers in Long Beach

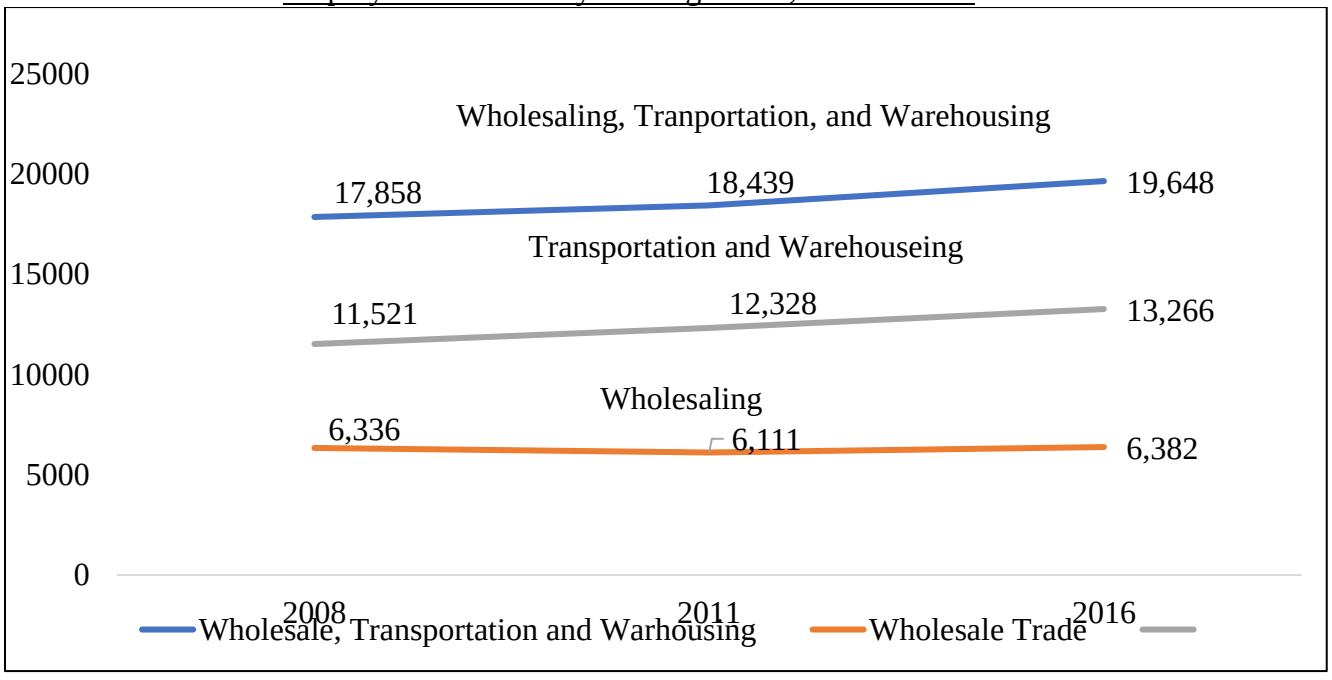
had mean wages of just over $28,100 per year, while aerospace firms had mean annual pay of $72,500 per year during 2016.

Wholesale Trade, Transportation, and Warehousing

The Long Beach airport and the seaport of Los Angeles-Long Beach make the city a hub of transportation warehousing and wholesale trade activities in the nation's west. Payroll employment in combined wholesale trade, transportation, and warehousing averaged 19,650 during 2016 and accounted for one out of eight payroll jobs in the city. This national and international trade-oriented sector is composed of two key elements, the transportation and warehousing industry and the wholesaling industry.

Transportation and warehousing industry employment in Long Beach saw steady gains both during the economic downturn and during the current recovery. Between 2011 and 2016 transportation and warehousing employment rose from 12,300 to 13,250, an increase of about 8 percent. Wholesale employment saw payroll employment dip modestly during the recession, but was able to recover all these job losses by 2016.

Chart 5:
Trends in Annual Average Wholesale Trade, Transportation, and Warehousing Industry Covered Employment in the City of Long Beach, 2008 to 2016



Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations.

Support services for transportation is among the most important and high paying in the city. This industry is at the center of the international trade system on the west coast with employment of 7,900 during 2016. About three-quarters of workers in this industry are engaged in providing support services to water transportation including port and harbor operations, cargo handling, and navigational services. Employment in support activities for water transportation has remained relatively stable over the 2011 to 2016 period, falling by about 3 percent over five years. The freight transportation industry in Long Beach employed about 1,500 during 2016, down about 7 percent from its 2011 level. Freight transport arrangers organize transport between freight shippers and carriers, they are sometimes known as freight forwarders.

Table 3:
Trends in Employment within Specific Industry Segments of the City of Long Beach Wholesale Trade, Transportation, and Warehousing Sector, 2011 to 2016, Annual Averages

	2011	2016	Change	Percent Change
Air Transportation	204	NA		
Water Transportation	330	341	11	3%
Truck Transportation	1351	1980	628	46%
Transit and Ground Passenger Transportation	603	316	-286	-48%
Support Activities for Transportation	8079	7912	-167	-2%
Support Activities for Water Transportation	6086	5892	-194	-3%
Freight Transportation Arrangement	1582	1469	-113	-7%
Warehousing and Storage	1106*	1662	556	50%

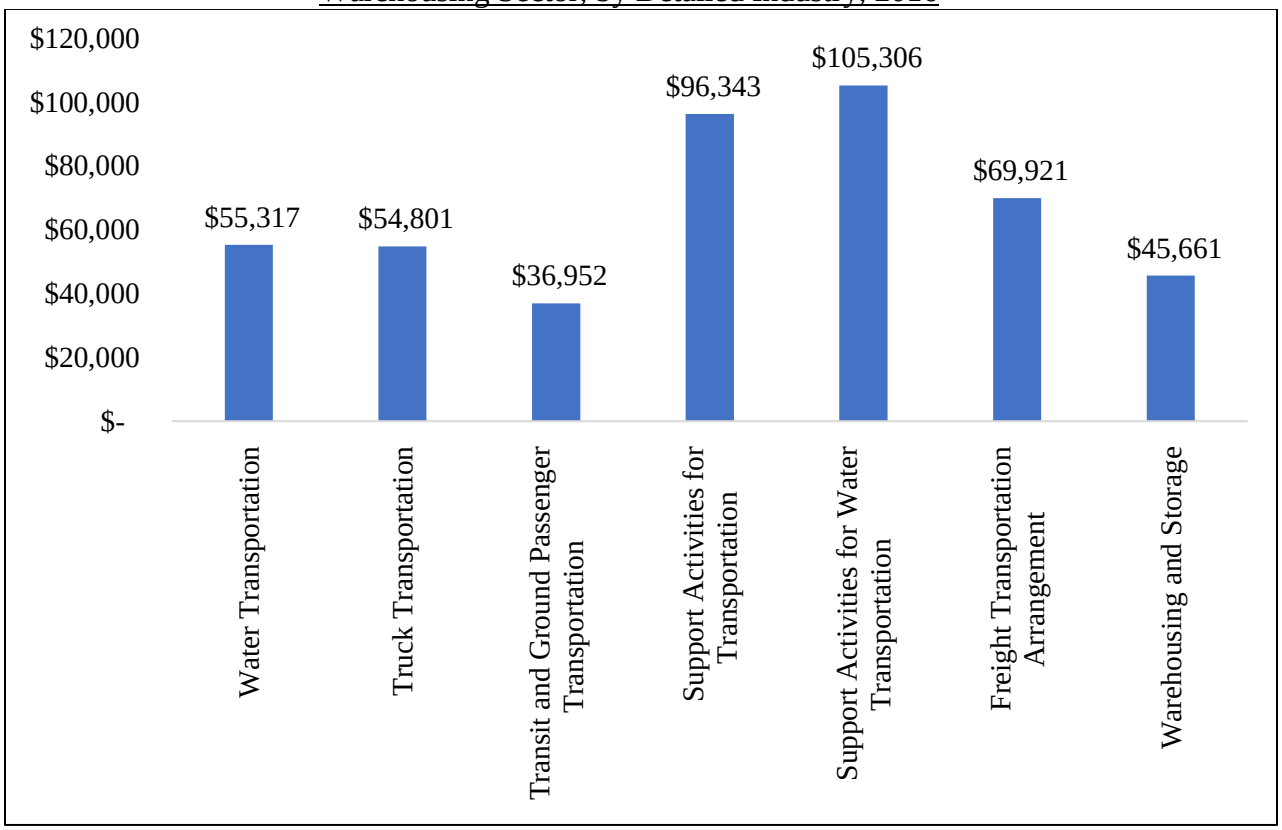
*Interpolation Estimate for 2011 by CLMP
Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations,

Closely connected to the services to water transportation and freight transportation industries is the truck transportation industry. Firms in this industry provide networks of sorting, pick-up terminal, and hauling services. These trucking services can truck both general palletized products or specialized trucking such as auto carrier, bulk liquid and the like. The trucking industry in Long Beach has posted strong job gains as employment increased by 46 percent in just five years. Similarly, the warehouse and storage industry in Long Beach also posted very strong employment gains.

Long Beach's wholesale trade, transportation, and warehousing sector is characterized by a wide interindustry earnings distribution. The data reveal that water transportation support

activities had mean earnings of $105,300 while the other major component of the transportation support industry, freight transport arrangement, paid its workers an average of $69,900 during 2016. The very high wages found in these industries are unusual. Generally, high wage industries are characterized by staffing patterns dominated by professional, technical, and managerial occupations, but the services for water transportation employs only about 10 percent of its staff in these occupations. Nationally, 70 percent of those working in this industry are employed in transport and material moving jobs. In the freight transportation arrangement industry, half of the staff work in clerical positons and one-fifth in material moving occupations.

Chart 6:
Annual Average Earnings in the Long Beach Wholesale Trade, Transportation, and Warehousing Sector, by Detailed Industry, 2016



Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations,

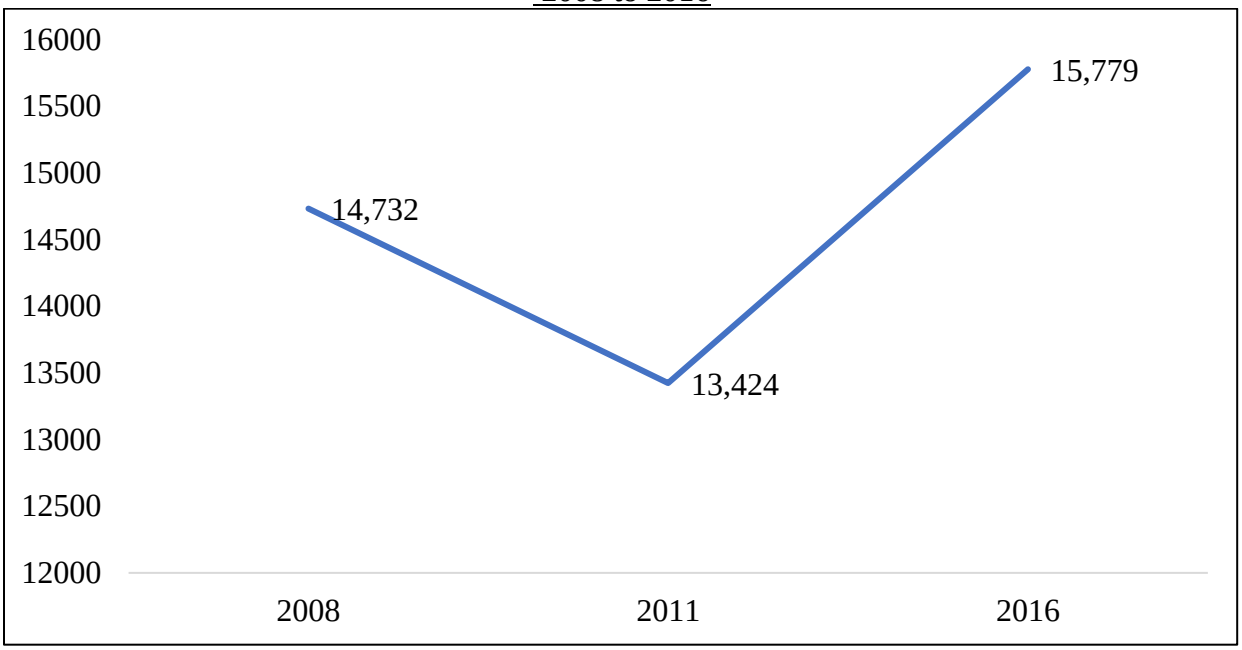
The annual wages paid to workers in the truck transportation industry in Long Beach averaged $54,800 during 2016, while the earnings in warehousing averaged $45,700. Annual pay in this sector was lowest in the ground passenger transportation industry that is largely

unconnected to the national and international export orientation of most of the rest of this sector. Local transport industries include commercial and school bus services, along with taxi and limousine services.

Retail Trade

Retail trade employment, which accounts for about 10 percent of covered wage and salary jobs in the city, proved to be cyclically sensitive over the business cycle. Employment in the city's retail trade sector declined from about 14,700 jobs during 2008 to 13,400 by 2011, a loss of about 7 percent, However, retail employment appears to have rebounded smartly between 2011 and 2016, rising by 15 percent over that time. The three largest retail industries in the city are motor vehicle sales, food and beverage stores (largely grocery stores), and general merchandise stores that include department stores, warehouses, club and supercenter retail stores. These stores account respectively for 16 percent, 26 percent, and 18 percent (collectively about 60%) of the Long Beach retail trade sector.

Chart 7:
Trends in Annual Average Retail Trade Covered Employment in the City of Long Beach, 2008 to 2016



Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations,

Most of the individual components of the city's retail trade industry have been able to add jobs over the last five years. Motor vehicle and parts dealers saw employment rise by more than 500 jobs and posted a 26 percent rise in employment between 2011 and 2016. Grocery stores also added a considerable number of jobs between 2011 and 2016, with employment in the food and beverage industry rising by 9 percent.

Table 4:
Trends in Employment within Specific Industry Segments of the City of Long Beach Retail Trade Sector, 2011 to 2016, Annual Averages

	2011	2016	Change	Percent Change
Motor Vehicle and Parts Dealers	1,993	2,505	511	26%
Furniture and Home Furnishings Stores	132	243	111	84%
Electronics and Appliance Stores	554	613	60	11%
Building Material and Garden Equipment and Supplies Dealers	1,031	1,037	7	1%
Food and Beverage Stores	3,725	4,067	343	9%
Health and Personal Care Stores	1,086	1,113	27	2%
Gasoline Stations	479	476	-4	-1%
Clothing and Clothing Accessories Stores	1,072	958	-114	-11%
Sporting Goods, Hobby, Musical Instrument, and Book Stores	645	613	-32	-5%
General Merchandise Stores	1,657	2,821	1,164	70%
Miscellaneous Store Retailers	791	886	95	12%
Non-store Retailers	259	446	187	72%

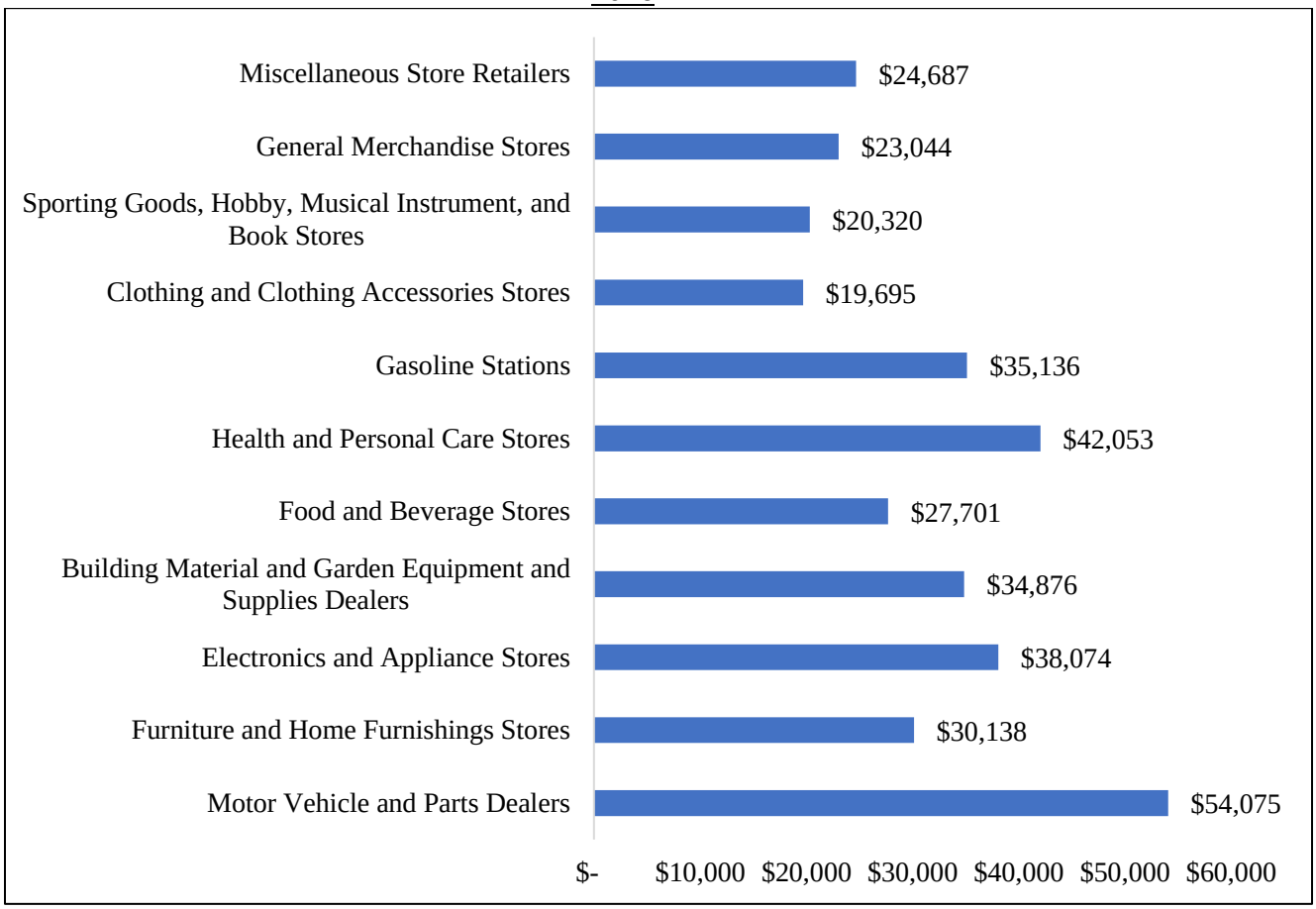
Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations

A very large employment gain was found in the general merchandise industry, that added over 1,100 jobs a 70 percent rise over the period. A large part of this increase was reported among department stores with a large increase beginning in the fourth quarter of 2015 and continuing through 2016. A similar increase was observed in the warehouse, club, and superstore component of the general merchandise industry for the same time period. Given the size and timing of this change, a more careful investigation by Pacific Gateway of developments in this industry may be desirable.

Annual earnings of workers in the Long Beach retail trade sector, much like retailing throughout California and the U.S., are relatively low; part-time and part-year work help explain the low annual earnings of those employed in retail, but hourly wage rates are closer to the bottom of the interindustry wage distribution. Those employed in motor vehicle and parts

retailers have mean annual earnings that are substantially above those in other sectors of retailing. Higher skill requirements and more annual hours of work help explain the higher pay observed in auto sales, service, and related retailing.

Chart 8:
Annual Average Earnings in the Long Beach Retail Trade Sector, by Detailed Industry, 2016



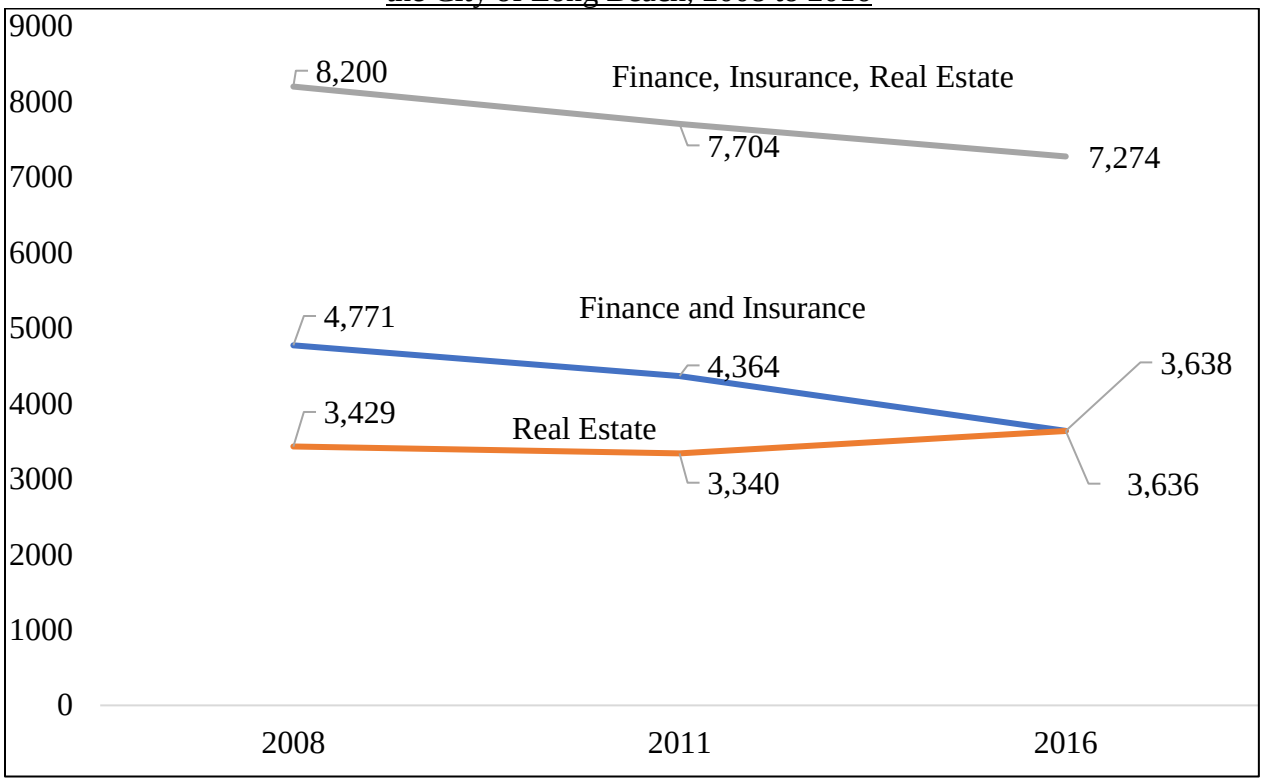
Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations

Food and beverage stores, the largest single part of retailing in Long Beach, had mean annual earnings of just $27,700. Low skill requirements and more part-time work have made this part of retail an important source of work for both in-school and out-of-school teens and young adults. General merchandise stores including department store and club and superstore retailers had mean annual earnings of $23,000 during 2016.

Finance, Insurance and Real Estate

Covered payroll employment levels in the city of Long Beach have continued to decline over the 2008 to 2016 period. Overall employment levels in this sector of the city's economy declined by about 500 jobs from its 2008 level of 8,200 by 2011. Despite the overall rebound in employment levels in the city that occurred between 2011 and 2016, the number of jobs in the city's finance, insurance, and real estate sector declined by an additional 6 percent to about 7,300 positions by 2011.

Chart 9:
Trends in Annual Average Finance, Insurance, and Real Estate Sector Covered Employment in the City of Long Beach, 2008 to 2016



Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations.

All of these job losses were concentrated in the finance insurance component of the industry as employment in the real estate segment remained stable during the downturn and added about 300 jobs between 2011 and 2016, a 9 percent increase.

The findings in Table 5 reveal that the losses in finance and insurance were concentrated in depository credit intermediation establishments (commercial and savings banks as well as credit unions) that lost about 100 jobs over the 2011 to 2016 period and insurance carriers (who

underwrite insurance, that is, assume certain risks for households and businesses in exchange for premiums) that posted a loss of nearly 800 jobs over the same period of time, a one-third reduction in insurance carrier employment over the period. Partially offsetting these losses was a gain in employment among establishments providing non-depository credit intermediation services employment. These firms engage in extending credit or lending funds by the use of various debt instruments and borrowing, often from banks.

Table 5:
Trends in Employment within Specific Industry Segments of the City of Long Beach Finance, Insurance, and Real Estate Sector, 2011 to 2016 Annual Averages

	2011	2016	Change	Percent Change
Credit Intermediation and Related Activities	1,677	1,659	-18	-1%
Depository Credit Intermediation	1,391	1,286	-106	-8%
Non-depository Credit Intermediation	109	240	131	121%
Insurance Carriers and Related Activities	2,273	1,498	-775	-34%
Insurance Carriers	1,375	599	-776	-56%
Agencies, Brokerages, and Other Insurance Related Activities	898	899	1	0%
Real Estate	2,465	2,752	287	12%
Lessors of Real Estate	683	779	96	14%
Offices of Real Estate Agents and Brokers	338	389	51	15%
Activities Related to Real Estate	1,443	1,584	141	10%

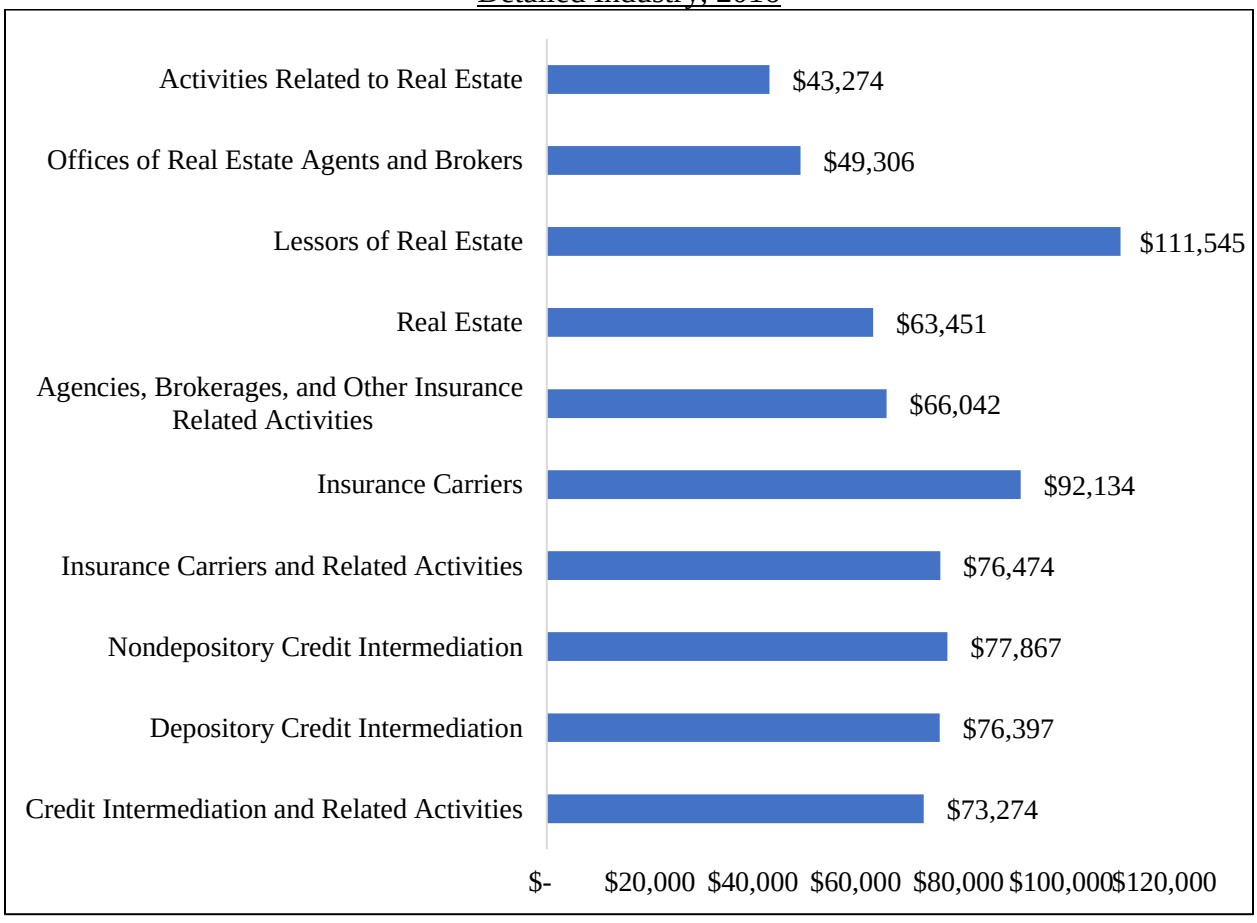
Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations

Real estate employment in the city posted across the board gains during the recovery, with employment rising by nearly 300 jobs or about 12 percent. The largest employment within the real estate industry is among establishments that provide activities related to real estate which include real estate property managers, real estate appraisers, and listing services. Employment among lessors of real estate increased by 14 percent, adding about 100 jobs between 2011 and 2016. These firms rent residential, commercial, and industrial property. These firms sometimes opt to manage buildings themselves. Finally, employment among real estate brokers also increased by about 50 positions, a rise of 15 percent over the period.

The annual earnings of workers in the Long Beach finance, insurance, and real estate industries were relatively high, but they did vary sharply across each of the components of this sector. Earnings in the city's financial sector generally ranged in the mid-$70,000s during 2016.

Insurance carrier mean earnings during 2016 were the highest in the finance sector averaging $92,000 that year. Mean annual earnings in the real estate sector were much more dispersed than those in finance and insurance. Lessors of real estate establishments paid their covered employees an average of $111,000 during 2016, while establishments engaged in activities related to real estate, like property management, paid an average of $43,200 to their staff members and real estate agent/broker establishments had mean annual earnings of $49,300 during 2016.

Chart 10:
Annual Average Earnings in the Long Beach Finance, Insurance, and Real Estate Sector, by Detailed Industry, 2016



Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations

Professional and Business Services

Some of the QCEW employment data for the Long Beach professional and business services industry that are available to us seem inconsistent and we worry that these data are not representative of actual economic activity. Our review of these data found substantial variations in industry employment levels, which are very hard to reconcile with employment developments in California and metropolitan Los Angeles when compared with findings from the Current Employment Statistics survey as well as with QCEW data in other states and the nation. We found very unlikely short-term employment gains accompanied by sudden losses not only in the QCEW Long Beach professional and business services industry employment special tabulations, but also in the QCEW Los Angeles county data available on the BLS website. We are at a loss to explain these variations and suspect they are at least in part related to industry and geographic coding problems (non-economic changes) and not to actual economic activity.

As we explained in the introduction, the QCEW are not designed to serve as a time series measure of employment as is the BLS Current Employment Survey. But with care, these data can be used to provide some insight in employment developments over time and are often used in this way. Indeed, BLS and state data producers often compare employment development with these data over time. However, we now re-emphasize some of the potential limitations of the QCEW data in discussing the professional and business services industries as we have strong evidence of problems with these data for certain years.

We have not used data for some important parts of this very large employment sector since we had little confidence that these data gave any sort of useful depiction of employment and wage developments in Long Beach. Indeed, the overall total employment data for the entire professional and business services industry appear suspect. Therefore, we focus on those specific industries within the professional and business services sector that we think are more likely to reflect actual economic activity rather than coding and classification error.

Elements of the professional, scientific, and technical industry have experienced job growth over the 2011 to 2016 period, with three industries posting especially strong employment gains. The architectural and engineering services industry is composed of firms that design a variety of products and provide complex analytical services including machines, materials, instruments, structures, processes, and systems. Firms in this industry may also engage in the provision of architecture services and geophysical survey and related services. Engineering

services establishments in Long Beach added 400 jobs, growing by 21 percent between 2011 and 2016. Computer and systems design, a much smaller industry than engineering services, posted strong relative gains adding 190 jobs, a rise of 37 percent over the period. Firms in this industry develop, test and support software for clients as well as provide data processing services and onsite support services. The nascent specialty design services provide design support in areas like interior design, industrial design, and graphic design. Employment in this industry has increased by almost 100 jobs over the period, a rise of 24 percent.

Table 6:
Trends in Employment within Specific Industry Segments of the City of Long Beach
Professional, Scientific, and Technical Sector, 2011 to 2016 Annual Averages

	2011	2016	Change	Percent Change
Accounting, Tax Preparation, Bookkeeping, and Payroll Services	1,158	1,244	86	7%
Engineering, and Related Services	1,965	2,368	403	21%
Specialized Design Services	401	496	95	24%
Computer Systems Design and Related Services	515	705	190	37%
Scientific Research and Development Services	140	112	-28	-20%
Advertising, Public Relations, and Related Services	366	242	-124	-34%

Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations

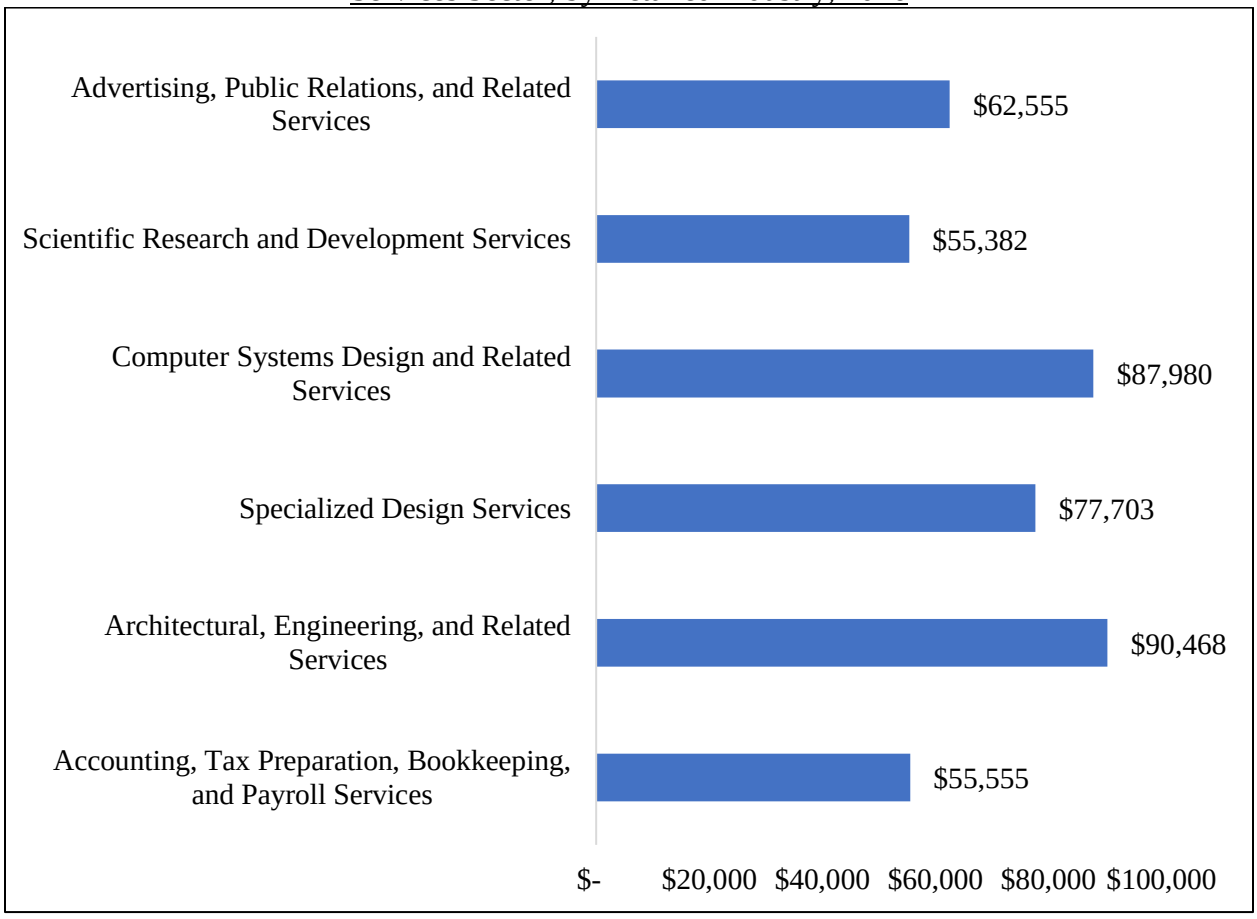
Both the scientific research and development industry and the advertising and public relations industry posted losses over the period. These comparatively small industries lost a combined total of about 150 jobs over the 2011 to 2016 period.

The three strong growth components of the Long Beach professional, scientific, and technical services are also industries with relatively high annual earnings for their covered wage and salary workers. Engineering services, with its staff heavily oriented to engineering and related technical occupations, offers some of the highest earnings for workers among Long Beach employers. Annual average pay for all workers in the engineering services industry in the city were about $90,500 during 2016. The 2016 annual earnings in the computer and systems design industry were similarly high, averaging about $88,000. Specialized design service firms in Long Beach also had comparatively high earnings for their covered workers. During 2016,

annual earning averaged $77,700 for wage and salary workers employed by specialized design firms in Long Beach.

Employment levels in both the accounting and advertising industries declined and their annual rate of pay was well below that of engineering, computer science, and design firms. These findings suggest that at least part of the professional and business services industry in Long Beach is becoming more oriented toward services that require more mathematical and technical preparation at the post-secondary level.

Chart 11:
Annual Average Earnings in Selected Long Beach Professional, Scientific, and Technical Services Sector, by Detailed Industry, 2016



Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations

Healthcare and Social Assistance

Employers in the healthcare and social assistance sector located within the city of Long Beach employ more than 25,200 workers distributed across four key industries: ambulatory care, hospitals, nursing and residential care companies, and social service organizations. Historically, healthcare and social services have been thought of industries that are very different from one another. Healthcare served the critically ill population in hospitals and through the ambulatory care system, including medical professional offices and outpatient diagnostic and treatment centers. Chronically ill persons were largely served by nursing care and residential treatment facilities of various types. In contrast, the social services industry has not provided services to persons with either chronic or acute health conditions. The social services industry typically provided adoption and foster care, community food and housing, vocational rehabilitation, and child care services. It also provided support to the elderly and disabled through community centers and day care centers for the elderly and disabled.

In recent years, the connections between healthcare and social services have changed dramatically with the emergence of personal care attendants as the primary service provider to elderly and disabled individuals with substantial limitations in activities of daily living that otherwise would require institutionalization in a medical facility, most often a nursing home. Increasingly, patients are diverted from nursing homes and instead return home with assistance from a personal care attendant. Employment in the personal care attendant occupation has grown more rapidly than any other occupation in the American economy. In the next decade, personal care attendants are expected to account for a stunning 7 percent of the total employment increase forecast for the U.S. economy.[2] This shift in health care delivery has developed a new role for the social services industry in the nation, that of providing support to the elderly and disabled to reduce the costs of health care institutions through aging-at-home policies. The result is that parts of the social service industry are now closely integrated into the healthcare delivery system primarily through Medicaid and Medicare programs[3]

A second important change that has had very large impacts on the QCEW measure of healthcare and social service employment has been the reclassification of personal care

[2] "Occupational Projections and Worker Characteristics" Table 1.7 Occupational Projections, 2016-2026 and Worker

[3] Neeta Fogg et al, "Chapter 4: The Changing Nature of the Health Care Workforce In Massachusetts", *Evaluation of the 2012 Health Care Cost Containment Law in Massachusetts*, Office of the State Auditor, Boston, June 2017

attendants (PCAs) from the private household industry to the individual and family services industry, within the social services sector, beginning in January 2013. California and five other states included employment counts of persons employed as personal care attendants funded by state Medicaid programs in the 'private household industry' since they were considered domestic household workers and exempt from some provisions of the Fair Labor Standards Act. The U.S. Department of Labor removed their FLSA and reclassified PCAs as healthcare workers. BLS required each of the six states to shift their PCA employment classification from the private household industry to the individual and family services industry. This resulted in a very large employment increase in the healthcare and social assistant sector, along with a reciprocal reduction in private household employment levels. This reclassification of employment in the city of Long Beach resulted in about 6,600 jobs moving from the private household industry to the social services industry. The impact of this change on the measure of health and social services sector employment was very large.

Table 7:
Effects of Reclassification of PCA Employment from the Private Household Sector to the Social Services Industry in the City of Long Beach

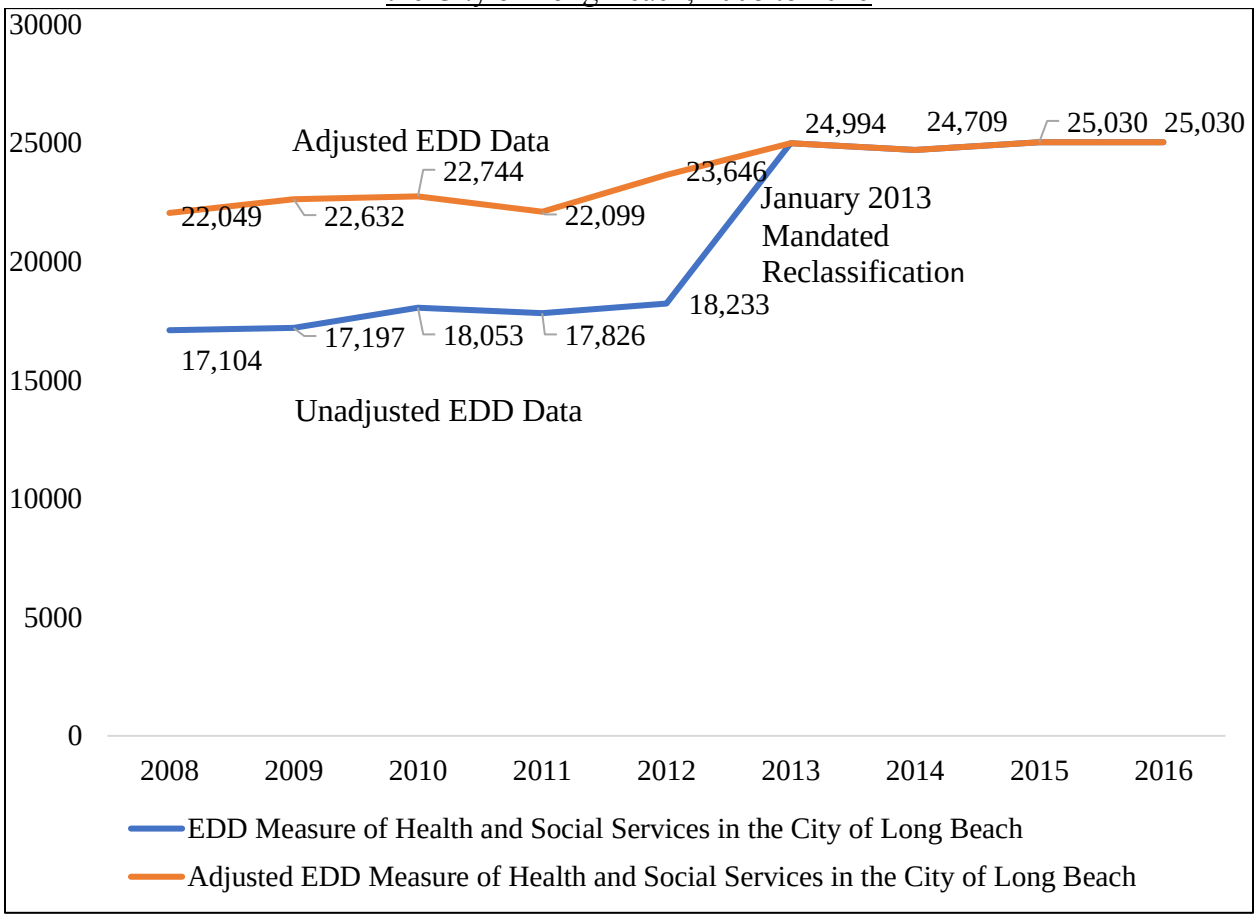
	2012 IV	2013 I	Change
Private Households	6,614	185	-6,429
Social Services	2,774	9,669	6,895

Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations

Because the QCEW data is not organized as a time series data system, even very large reclassifications of whole classes of workers are not revised in the historical files. Thus, when California EDD produced our employment measures they excluded PCA employment from the healthcare and social assistance industry for all years prior to 2013. Comparing EDD data for healthcare and social services suggests a very large increase in employment in the city suddenly occurred between 2012 and 2013. However, this employment increase is simply the product of the reclassification of about 6,600 PCA workers from outside the healthcare and social services industry into that sector of the Long Beach labor market. When the data are properly adjusted we find that instead of a sharp rise in healthcare and social services employment since 2008, there has been a much more modest increase in employment in that sector.

The point of 'inflection' that we observe in the unadjusted data beginning in 2013 did not actually occur. If it had, it would mean that between 2008 and 2012, employment in the city's healthcare increased by about 1,100 jobs, a 6 percent rise in four years, but then suddenly increased by 37 percent (about 6,800 jobs) between 2012 and 2013. This abrupt rise would then be followed by virtually no employment change over the next three years. It would mean that employment in the sector had increased by 45 percent between 2008 and 2016. Once we properly adjust the healthcare and social services industry to account for the reclassification of personal care attendants we find that employment in the healthcare and social services in Long Beach grew at a much more modest pace over the period, adding about 3,000 jobs over the eight-year period, an increase of 13 percent.

Chart 12:
Comparison of Adjusted and Unadjusted Healthcare and Social Service Employment Levels in the City of Long Beach, 2008 to 2016



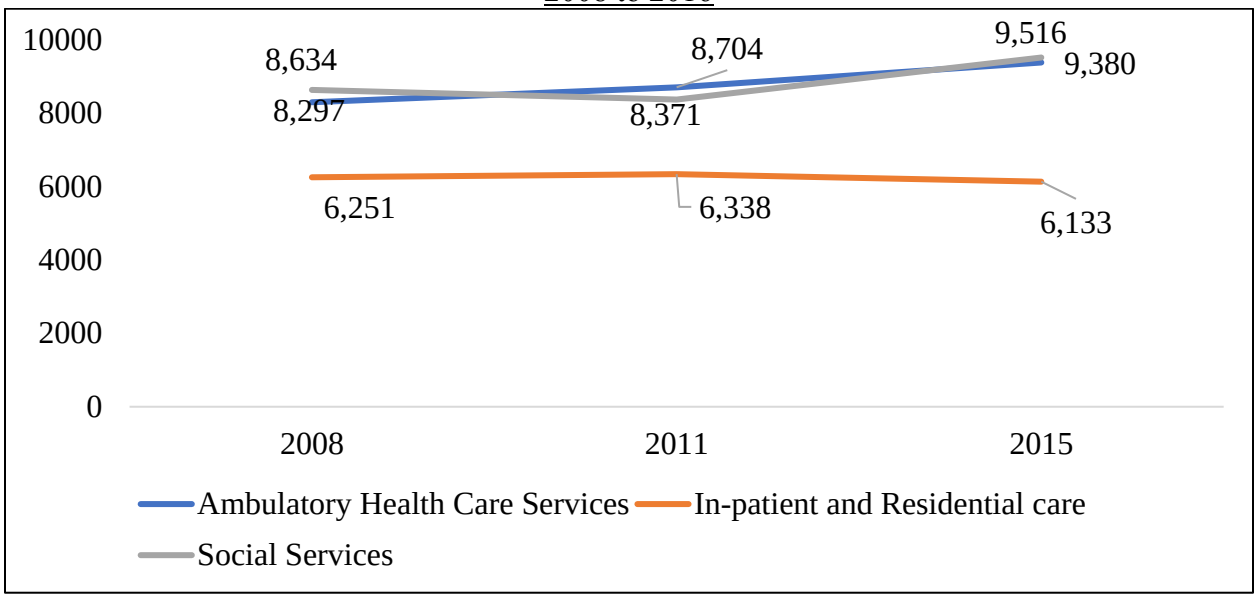
Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations

Within the healthcare and social services industry, we find that all of the increase in employment occurred outside of the traditional core of the healthcare sector: hospitals and nursing homes and residential care facilities. Between 2008 and 2016 employment among these in-patient serving organizations fell, except for skilled nursing facilities. More than offsetting these losses were gains in healthcare employment among organizations that provide outpatient care and in-home, direct care services.

Ambulatory care providers saw employment levels rise steadily between 2008 and 2016, adding almost 1,100 jobs. The pace of job growth among ambulatory care providers in Long Beach remained strong during the economic recession, with no interruption in employment growth despite job losses in many other sectors of the city's (state's and nation's) job market during the Great Recession.

Fueled by expansion in the PCA occupation, the city's social service industry saw employment increase by nearly 900 jobs, a 10 percent rise between 2008 and 2016. However, employment in social services declined over the Great Recession shedding about 260 jobs. However, beginning in 2011, employment in the industry rebounded rapidly, adding about 1,150 jobs and growing by 14 percent in just three years.

Chart 13:
Trends in the Components of the Long Beach Healthcare and Social Services Industry, 2008 to 2016



Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations

Since the end of the jobs recession in 2011overall employment levels within the health and social services industry have, for the most part, changed little. However, beneath the overall stable employment levels within the sector we found considerable change occurring among specific industry sectors.[4] The most important development is in the city's healthcare and social services industry is the employment gains in the individual and social service industry where PCAs deliver services to the elderly and disabled population of the area. Employment in the city's individual and social services industry grew by over 1,000 jobs, a 15 percent rise. Offices of physicians saw employment increase by nearly 500 jobs a 16 percent rise as outpatient clinics added nearly 300 jobs growing by 21 percent between 2011 and 2016.

Table 8:
Trends in Employment within Specific Industry Segments of the City of Long Beach Healthcare and Social Service Sector, 2011 to 2016 Annual Averages

	2011	2016	Change	Percent Change
Offices of Physicians	3002	3497	495	16%
Offices of Dentists	1168	1091	-77	-7%
Offices of Other Health Practitioners	759	824	65	9%
Outpatient Care Centers	1332	1615	284	21%
Nursing Care Facilities (Skilled Nursing Facilities)	3019	3414	396	13%
Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities	642	484	-158	-25%
Individual and Family Services	6732	7768	1036	15%

Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations

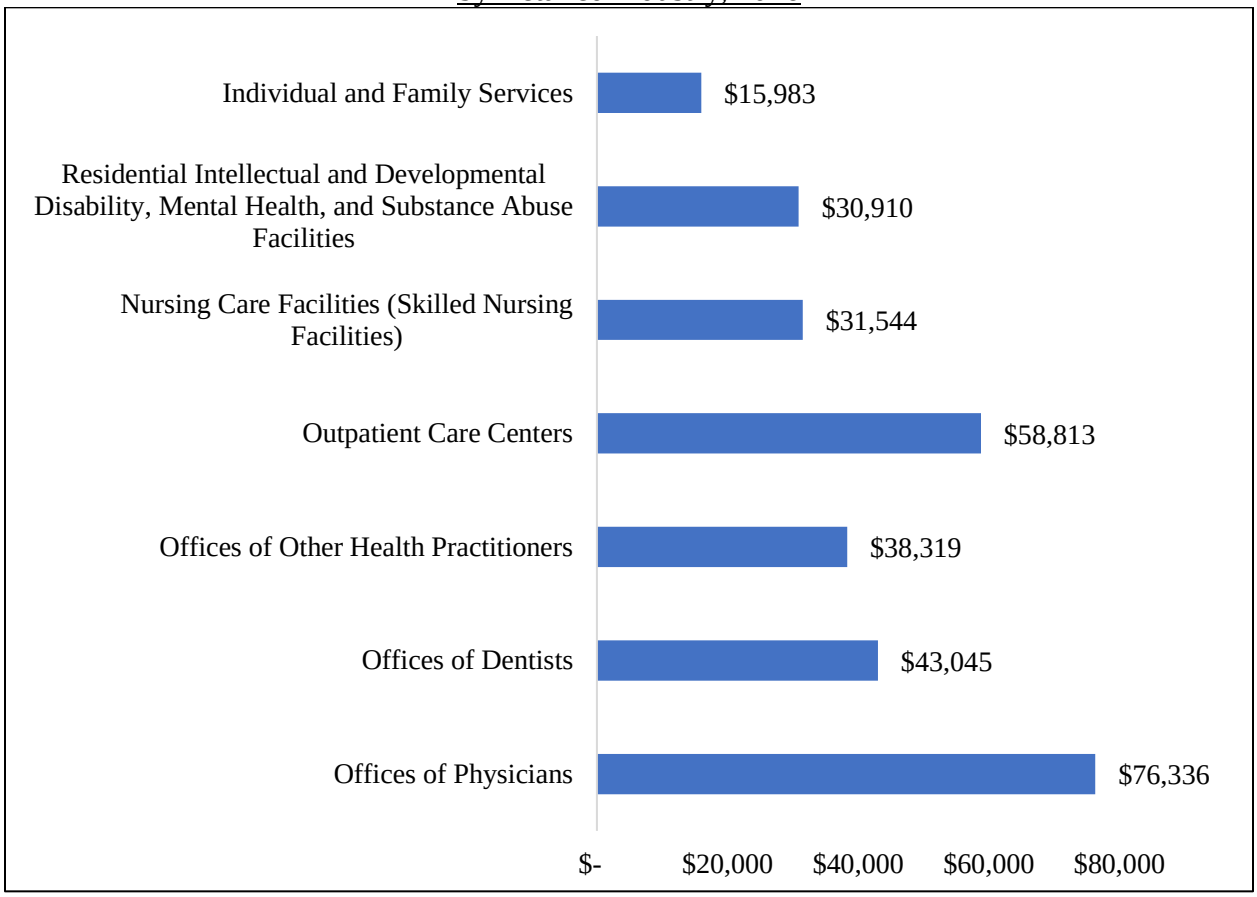
The earnnings of workers in the healthcare and social services sector vary quite sharply across industry components of the sector. Annual average earnings in the individual and social services are quite low. During 2016, the average earnings of persons employed in the industy were just $16,000 per year. Workers in this industry have very low hourly earnings, averaging just $18.00 across all occupations. In California, PCAs were paid an average of just $12.00 per hour during 2016. PCA positions are usually part-time and often part-year. Reduced annual

[4] Unfortunately, hospital employment data for the City of Long Beach have been suppressed by California EDD. However, we suspect that substantial employment declines have occurred among the city's medical-surgical hospital employers, as the number of hospital establishments located in the city declined—suggesting a major number of hospital lay-offs and closings.

hours of work and low hourly pay both contribute to the low annual earnings of those employed in this industry. In contrast, annual pay in offices of physicians in Long Beach averaged more than $76,000 during 2016, about 5 times the rate of pay of the average worker in the individual and family services industry.

Generally, healthcare and social service industries that employ large shares of staff in diagnostic and treatment occupations have above average levels of pay- both because of high hourly wage rates and a large fraction of full-time, year-round workers. Those industries that employ large shares of staff in healthcare support occupations have lower annual pay associated with a higher incidence of part-time work and lower hourly wage rates.

Chart 14:
Annual Average Earnings in Selected Long Beach Healthcare and Social Services Sector, by Detailed Industry, 2016

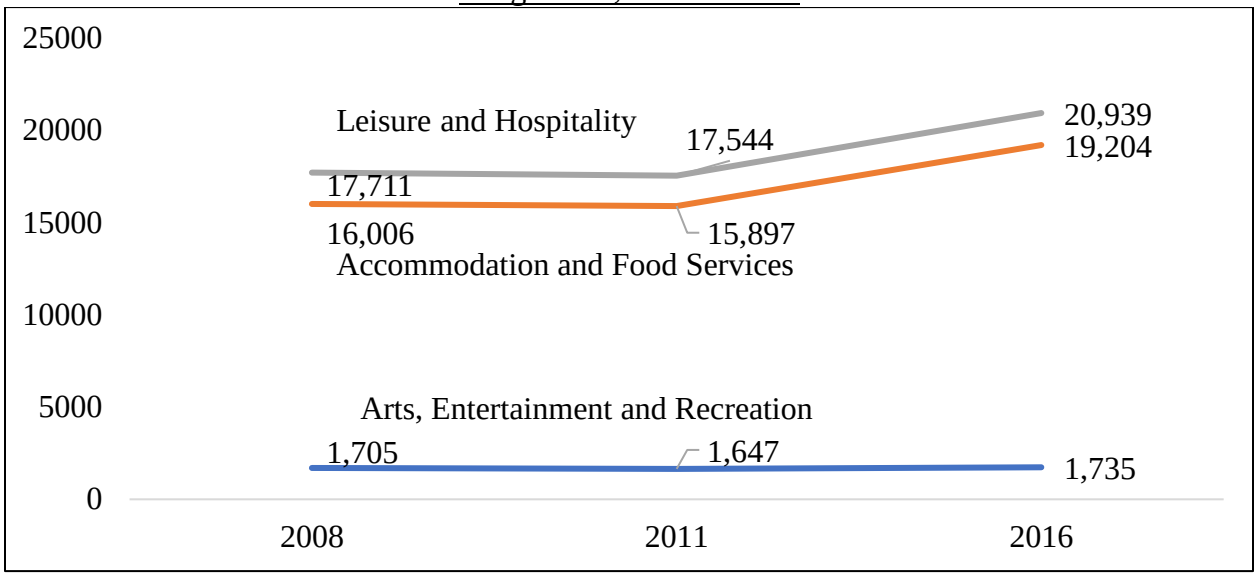


Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations

Leisure and Hospitality

Like many large cities, leisure and hospitality is an important source of employment in Long Beach. During 2016, the city hosted 20,900 jobs in a variety of leisure and hospitality related activties, accounting for about 13 percent of total payroll employment in the city. The city's arts, entertainment, and recreation industry employed just over 1,700 workers on average during 2016. Employment in this part of the leisure and hospitality sector has remained largely unchanged at approximately 1,700 jobs each year since 2008. In contrast, the accommodation and food services industry has experienced very rapid employment growth since 2008 with employment rising by about 3,200 jobs, by 2016. All of that gain occurred after 2011 as the area's economy recovered from the recession.

Chart 15:
Trends in Annual Average Leisure and Hospitality Sector Covered Employment in the City of Long Beach, 2008 to 2016



Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations

Essentially all of the employment gains within the leisure and hospitality sector in Long Beach have come from strong gains in food services and drinking establishments. This covers a wide range of businesses ranging from full service restaurants, fast food, carryout, and cafeteria services as well as caterers. Bars, taverns, and nightclubs are also part of this rapidly growing sector of the city's job market. Total employment in the food services and drinking establishments sector increased by more than 3,300 jobs since 2011, a nearly one-quarter increase in payroll employment levels. The food services and drinking industry is emerging as a

leading source of new job creation in Long Beach accounting for more than one in five jobs created in the city since 2011.

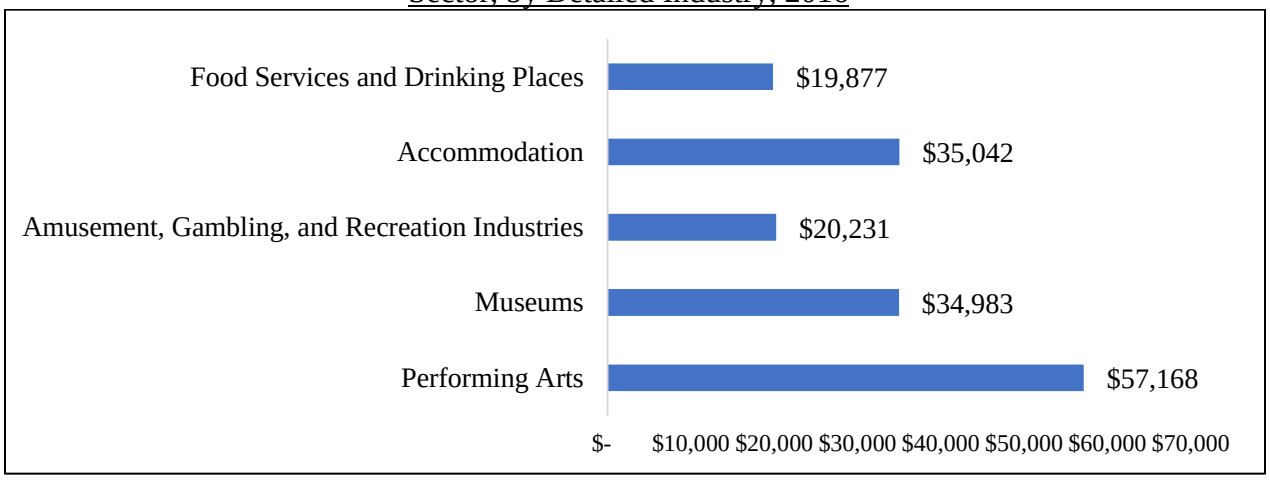
Table 9:
Trends in Employment within Specific Industry Segments of the City of Long Beach Leisure and Hospitality Services Sector, 2011 to 2016 Annual Averages

	2011	2016	Change	Percent Change
Performing Arts	277	283	6	2%
Museums	430	501	70	16%
Amusement, Gambling, and Recreation Industries	940	952	12	1%
Accommodation	2,293	2,267	-26	-1%
Food Services and Drinking Places	13,604	16,937	3,333	24%

Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations

The mean annual earnings of workers within the leisure and hospitality sector are generally low since the low paying food services and drinking industry accounts for about 80 percent of total employment in the sector. During 2016, mean earnings for those employed in food services and drinking places averaged just under $20,000 per year. Pay in the performing arts industry was nearly 3 times greater averaging $57,100 during the year.

Chart 16:
Annual Average Earnings in Selected Long Beach Leisure and Hospitality Services Sector, by Detailed Industry, 2016



Source: Employment Development Department, State of California, Quarterly Census of Employment and Wages Special Tabulations