

Implementation of Action 6 of CSFAP Phase 3 Tracking Economic Competitiveness

Part 1: 2021 Economic
Competitiveness Metrics Annual
Report

January 2022

A Research Report from the Pacific Southwest
Region University Transportation Center

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TECHNICAL REPORT DOCUMENTATION PAGE

1. Report No. PSR-18-SP90	2. Government Accession No. N/A	3. Recipient's Catalog No. N/A	
4. Title and Subtitle Implementation of Action 6 of CSFAP Phase 3 Tracking Economic Competitiveness Part 1: 2021 Economic Competitiveness Metrics Annual Report		5. Report Date January 2022	
		6. Performing Organization Code N/A	
7. Author(s) Genevieve Giuliano, ORCID 0000-0002-9257-8269 Dan Wei, ORCID 0000-0003-0738-2286 Elena Vindrola		8. Performing Organization Report No. PSR-18-SP90	
		10. Work Unit No. N/A	
9. Performing Organization Name and Address METTRANS Transportation Consortium University of Southern California University Park Campus, RGL 216 Los Angeles, CA 90089-0626		11. Contract or Grant No. USDOT Grant 69A3551747109 Caltrans Grant 65A0674	
		13. Type of Report and Period Covered Final report (5/17/2019-7/31/2021)	
12. Sponsoring Agency Name and Address U.S. Department of Transportation Office of the Assistant Secretary for Research and Technology 1200 New Jersey Avenue, SE, Washington, DC 20590		14. Sponsoring Agency Code USDOT OST-R	
		15. Supplementary Notes https://www.mettrans.org/research/implementation-of-action-6-of-the-california-sustainable-freight-action-plan-csfap-phase-3-tracking-economic-competitiveness	
16. Abstract This report is the first of three parts of the project final report. Part 1 presents a first annual report on freight industry economic competitiveness metrics. Part 2 describes data and computations for the metrics, and Part 3 presents an economic impact analysis of electrifying cargo handling equipment at the ports of Los Angeles and Long Beach. This research supports implementation of the California Sustainable Freight Action Plan (CSFAP) and the California Freight Management Plan (CFMP).			
17. Key Words Economic Competitiveness		18. Distribution Statement No restrictions.	
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 44	22. Price N/A

Form DOT F 1700.7 (8-72)

Reproduction of completed page authorized

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About the Pacific Southwest Region University Transportation Center

The Pacific Southwest Region University Transportation Center (UTC) is the Region 9 University Transportation Center funded under the US Department of Transportation's University Transportation Centers Program. Established in 2016, the Pacific Southwest Region UTC (PSR) is led by the University of Southern California and includes seven partners: Long Beach State University; University of California, Davis; University of California, Irvine; University of California, Los Angeles; University of Hawaii; Northern Arizona University; Pima Community College.

The Pacific Southwest Region UTC conducts an integrated, multidisciplinary program of research, education and technology transfer aimed at *improving the mobility of people and goods throughout the region*. Our program is organized around four themes: 1) technology to address transportation problems and improve mobility; 2) improving mobility for vulnerable populations; 3) Improving resilience and protecting the environment; and 4) managing mobility in high growth areas.

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Disclosure

Genevieve Giuliano, Dan Wei, and Elena Vindrola conducted this research Implementation of Action 6 of CSFAP Phase 3 Tracking Economic Competitiveness. Part 1: 2021 Annual Report of Metrics, at the Price School of Public Policy and Viterbi School of Engineering, University of Southern California. The research took place from May 2019 to December 2021 and was funded by a grant from Caltrans in the amount of \$299,500. The research was conducted as part of the Pacific Southwest Region University Transportation Center research program.

Acknowledgements

This research was supported by Caltrans under the Pacific Southwest Region 9 University Transportation Center grant. This research was conducted with the collaboration of the Governor's Office of Business and Economic Development and the Economic Competitiveness Working Group, whose members include freight industry representatives, Caltrans, and CARB. Frank Ramirez, Goods Movement and Sustainable Freight Manager, coordinates the Working Group. Participation of the Working Group in all aspects of this research is greatly appreciated. Shangchen Yong, USC graduate student, produced the MySQL files used to generate the metrics.

Abstract

This report is the first of three parts of the project final report. Part 1 presents a first annual report on freight industry economic competitiveness metrics. Part 2 describes data and computations for the metrics, and Part 3 presents an economic impact analysis of electrifying cargo handling equipment at the ports of Los Angeles and Long Beach. Each part of the final report is published separately and available at <https://www.metrans.org/research/implementation-of-action-6-of-the-california-sustainable-freight-action-plan-csfap-phase-3-tracking-economic-competitiveness>. This research supports implementation of the California Sustainable Freight Action Plan (CSFAP) and the California Freight Management Plan (CFMP).

Metrics were developed in earlier phases of the project. We track a series of metrics across various subsectors of the freight industry. The metrics measure financial performance, workforce statistics, and overall economic performance. Data to compute the metrics are drawn from publicly available data sources. In this report we present four full years of data, from 2015 through 2018, with some data sources extended to 2019 as available. Data sources and computations are stored in a MySQL database at USC.

The results suggest that the performance of the freight industry of California has been positive overall, with steady growth in most subsectors. While growth is documented in revenues, workers and GDP, wages remain stagnant. California's trucking sector is growing, but not as fast as that of other states. Self-employed workers are growing faster than employed workers. Real wages have been relatively flat in all states. Comparing trucking sector wages to state averages shows that trucking has been losing ground. This trend is particularly pronounced in California, where the cost of living is much higher than in the comparison states. California's port sector has not grown as fast as that of competing states and has lost some market share over the period.

The metrics overall are reliable and consistent across years. The metrics have two disadvantages. First, there is no available measure for profitability. Rising revenues and GDP could reflect rising costs as well as sector growth. Second, the data lag by 2-3 years, so provide a good picture of the past but not the present. Findings in the report apply only to the period of 2015-2018, not to current market conditions.

1. Introduction

This report, “2021 Economic Competitiveness Metrics Annual Report,” is Part 1 of the final report for the project, “Implementation of Action 6 of CSFAP Phase 3 Tracking Economic Competitiveness.” The final report has three parts, each on a different topic. This report constitutes the first annual report on freight sector economic competitiveness under CSFAP. Part 2 is a description of data and computations used to generate the annual metrics, and Part 3 is an economic impact analysis of switching to electricity powered cargo handling equipment at the ports of Los Angeles and Long Beach. The three reports together constitute the work conducted under Phase 3 of this project. The three parts of the final report are published separately and are available at <https://www.metrans.org/research/implementation-of-action-6-of-the-california-sustainable-freight-action-plan-csfap-phase-3-tracking-economic-competitiveness>.

The METRANS team began assisting Caltrans and the Governor’s Office of Business and Economic Development (GO-Biz) with implementation of Action 6 of the California Sustainable Freight Action Plan (CSFAP) shortly after the plan began implementation in 2016. The research is conducted in collaboration with the Economic Competitiveness Working Group. Working Group members include representatives of the various freight industry sectors as well as state agency officials and staff.

Action 6 requires the development of performance measures for monitoring the economic competitiveness of the freight sector, as well as the establishment of targets for increased economic competitiveness. The METRANS team was tasked with developing appropriate metrics for tracking the economic competitiveness of the freight industry. In previous phases of the research, the METRANS team held workshops to consider approaches for measuring economic competitiveness (Giuliano, 2017), conducted research on data sources for metrics, tested sets of possible metrics (Giuliano and Hassan, 2018), tested methods for separately tracking trucking and port-related subsectors, and ultimately identifying a final set of metrics (Giuliano and Hassan, 2020).

This is the first annual report to be produced. We are now confident of the integrity of the data and of our computational procedures. The Working Group has reviewed the metrics in several meetings. Although questions remain on the extent to which metrics reflect on the ground experience, there is consensus that these metrics represent the most comprehensive and reliable way to track industry trends.

The remainder of this report is organized as follows. We begin with a brief overview of the freight industry, economic competitiveness, and metrics. We then present and discuss the metrics. Performance of California is compared to the rest of the US for the entire freight industry. We then address two subsectors, trucking and port activity. For trucking we use the same metrics and compare California to its local competitors, Arizona, Nevada and Utah. For port activity we use USA trade data on imports and exports and compare California to Washington, New York, Georgia and Virginia. The report ends with some brief conclusions.

2. Freight Industry, Competitiveness, and Metrics

The starting point for tracking the competitiveness of the industry is to clearly define the freight sector. The Working Group agreed on the following broad definition of the freight sector:

The freight sector constitutes all transportation based and transportation dependent enterprises involved in the supply chain from point of origin to point of consumption.

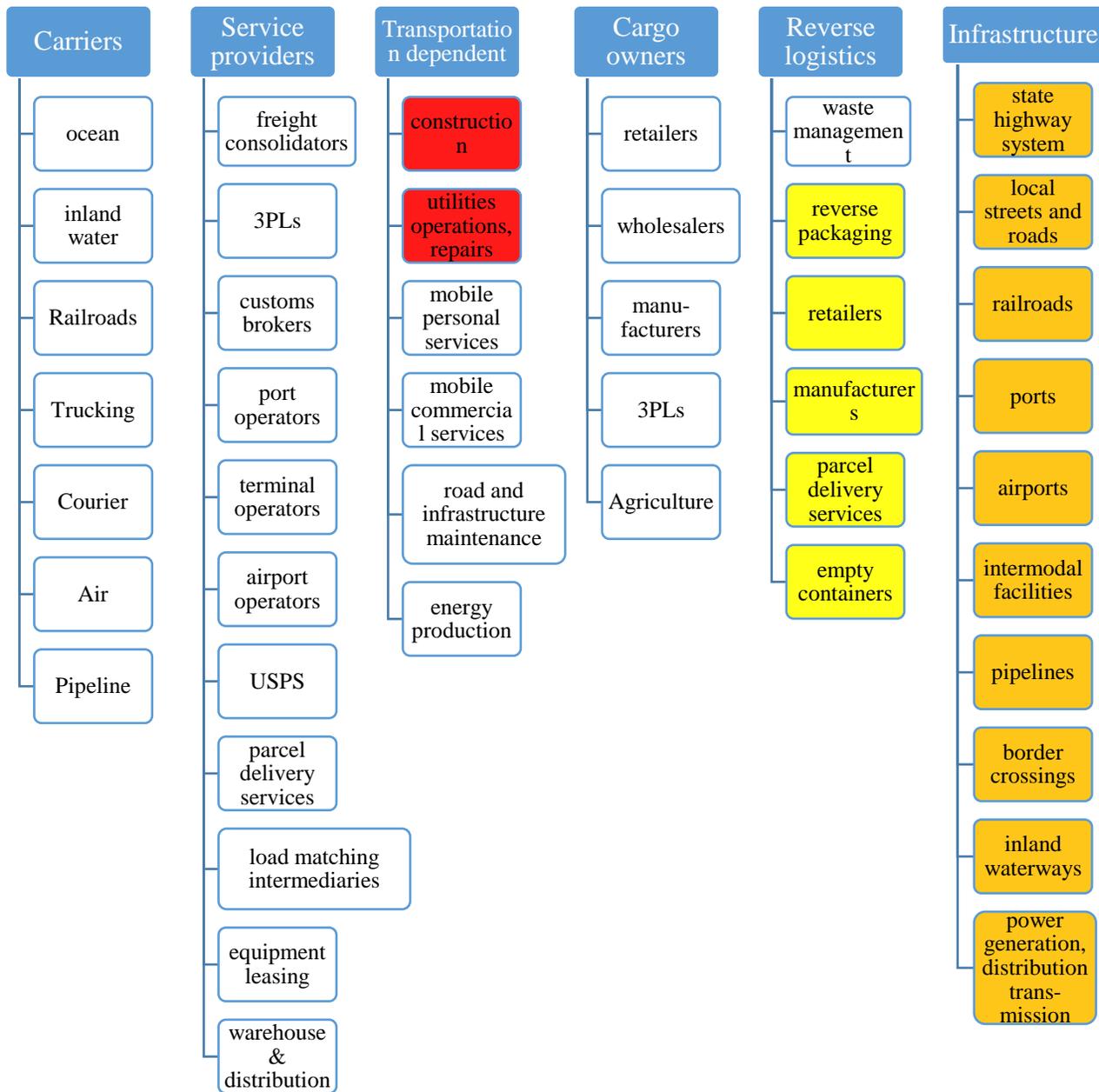
It includes:

1. All carriers
2. All transportation service providers involved in moving, handling, managing, or planning the flow of cargo
3. All transportation dependent activities
4. All cargo owners or intermediaries
5. Reverse logistics chains
6. Transportation infrastructure

The Working Group argued that cargo owners should be included, because the fundamental purpose of freight movement is to connect producers with consumers. However, the size of the retail, manufacturing, and wholesale sectors dwarfs the more traditional concept of freight sector. We therefore compute performance metrics with and without cargo owners. The Working Group included transportation infrastructure (public and private) because infrastructure is a critical part of the goods movement system. Performance measures are entirely different for public infrastructure, and the group elected to defer consideration of infrastructure metrics.

The final enumeration of all activities included in the six subsectors is given in Figure 1. The yellow boxes denote activities that could not be separately measured; they are effectively incorporated into the main sectors (e.g. retailing includes returns). The red boxes are sectors that were large, and for which transportation represented a small part, and hence were removed. The orange boxes represent the sector deferred.

Figure 1: Freight sector enumerated by group



2.1 Economic Competitiveness

The working group agreed on the following definition of economic competitiveness:

The California freight sector’s ability to 1) successfully compete with freight sectors in other states as measured by using existing comparable metrics, and 2) increase the productivity of freight and related sectors and contribute to the growth of California’s economy. Economic competitiveness is affected by policies, institutions, and investments that influence the freight sector’s productivity.

This definition was the basis of developing a suitable set of metrics and a suitable comparative group. The second part of this definition recognizes that public policy affects competitiveness. For example, investments to reduce freight bottlenecks will increase reliability, contributing to economic competitiveness. Policies that add to the cost of doing business will reduce competitiveness, all else equal.

2.2 Data and Sources

We used 6-digit NAICS (National Industrial Classification System) codes to allocate activity to each of the five subsectors. Six-digit codes are the most fine grain classifications broadly available in economic data and therefore give the most detailed portrayal of each subsector. For a mapping of each NAICS code to the freight subsectors, see Giuliano and Hassan (2018).

The primary data sources are listed in Table 1. The Quarterly Census of Employment and Wages (QCEW) is the main data source; it provides quarterly data for employment and earnings for all employees covered by unemployment insurance. Although QCEW is the most detailed and consistent data source of its kind available, it is not perfect. There are various types of missing data problems, and of course the data are only as good as what is reported to the state. The QCEW data is supplemented with Non-employer Statistics (NES). NES is provided annually, and there is a two-year lag before it becomes available. Bureau of Economic Analysis (BEA) is the only source of annual sector level GDP data, but it is limited to 2-digit sectors. The Economic Census (EC) data are used to expand GDP data to 6-digit sectors. For more information on data sources, see Giuliano and Hassan (2018).

The Economic Census does not have railroad or USPS data. In calculating the initial set of metrics, it became apparent that railroad data are broadly missing from QCEW as well. We discussed railroad data with Working Group representatives. By using AAR data and obtaining California specific data directly from the two Class 1 railroads (BNSF and UP), it is possible to include the railroads. However, it has proven difficult to obtain data directly from the Class 1 operators. Therefore railroad industry data are not included in the metrics.

Table 1: Data Sources

Data Source	Frequency	Latest data available	NAICS digits	Variables	Exclusions
Quarterly Census of Employment and Wages (QCEW)	Quarterly	Q4 2020	2-6	Employment, earnings	Public sector not covered by unemployment insurance program; self-employed
Non-Employer Statistics (NES)	Annual	2018	2-4	N of establishments, revenues	Firms with employees
Economic Census	5 years	2017	2-6	N of establishments, employees, payroll per employee, total annual payroll, revenues	Firms with no employees, RR, USPS
Bureau of Economic Analysis (BEA)	Annual	2020	2	GDP, real GDP, per capita real GDP	

2.3 Metrics

There are many aspects of economic performance that could be measured. Starting with the composite measure, overall economic performance is traditionally measured by the sector's contribution to GDP. As the sector grows relative to other sectors, its contribution to GDP grows. However, GDP contribution may not be the best indicator for the freight sector. As freight becomes more productive, its share of GDP will decline, all else equal. Thus, a better measure of the economic health of the industry might be net profits or revenue per employee. There is no publicly available data source for profits, and therefore a profit metric could not be included. The final set of metrics has three categories: financial performance, workforce statistics, and overall economic performance. See Table 2, which lists metrics and their data sources. Note that we do not include the self-employed in payroll statistics, The NES data reports total revenue for each self-employed entity, but we do not know how much of the revenue goes to payments to the firm owner.

Table 2: Metrics and data sources

Category	Metric	Data source
Financial performance	Revenues, with and without self-employed	Economic Census, QCEW, NES
Workforce statistics	Number of workers, with and without self-employed	QCEW, NES
	Total payroll, employees only	QCEW
	Payroll/employee, employees only	QCEW
Overall economic performance	GDP and real GDP	BEA

3. California Freight Sector Metrics

We present all metrics for 2015 through 2018 and some metrics through 2019 depending on data availability. First, we present metrics for the entire freight sector. Metrics are given with and without cargo owners for the reasons described previously. We have 7 different metrics (accounting for with and without self-employed), 7 categories (5 subsectors, 1 subtotal, 1 total) and four years of data. Given the large number of metrics values generated, we provide summary results here and detailed results in Appendix A.

3.1 California Freight and Freight Related Sector Metrics

3.1.1 Financial Performance

Table 3 and Figures 2 and 3 show financial performance, total revenues. Table 3 gives revenues for firms with employees only, and the total adding the self-employed. The 2019 NES data is not yet available. We note that 2016-2017 shows the change in year of the Economic Census; 2015 and 2016 are based on the 2012 EC, and 2017 and following are based on the 2017 EC. See Giuliano (2018) and Part 2 of this report for details. All revenues are in constant 2015 dollars. Table 3 shows a gradual increase in revenues for the freight sector and a peak in 2017 followed by a decrease for cargo owners.

Table 3: Total revenues, firms with employees only, in constant \$ millions

CA	Firms with employees only					All firms, including self-employed			
	2015	2016	2017	2018	2019	2015	2016	2017	2018
Freight sector	\$64,109	\$65,641	\$74,984	\$75,657	\$79,552	\$74,811	\$76,396	\$86,990	\$88,458
Cargo owners	\$2,070,558	\$2,037,526	\$2,226,644	\$2,150,612	\$2,094,645	\$2,095,784	\$2,059,430	\$2,248,498	\$2,172,317
Total all	\$2,134,668	\$2,103,166	\$2,301,627	\$2,226,270	\$2,174,197	\$2,170,596	\$2,135,826	\$2,335,489	\$2,260,775

Figures 2 and 3 give the same information in index form. Freight sector revenues have increased about 5% over the five year period (Figure 2), while the cargo owner sector decreased by about 12%. Figure 3 shows the trend is the same when including revenues from the self-employed.

Figure 2: Total revenues, indexed, firms with employees only

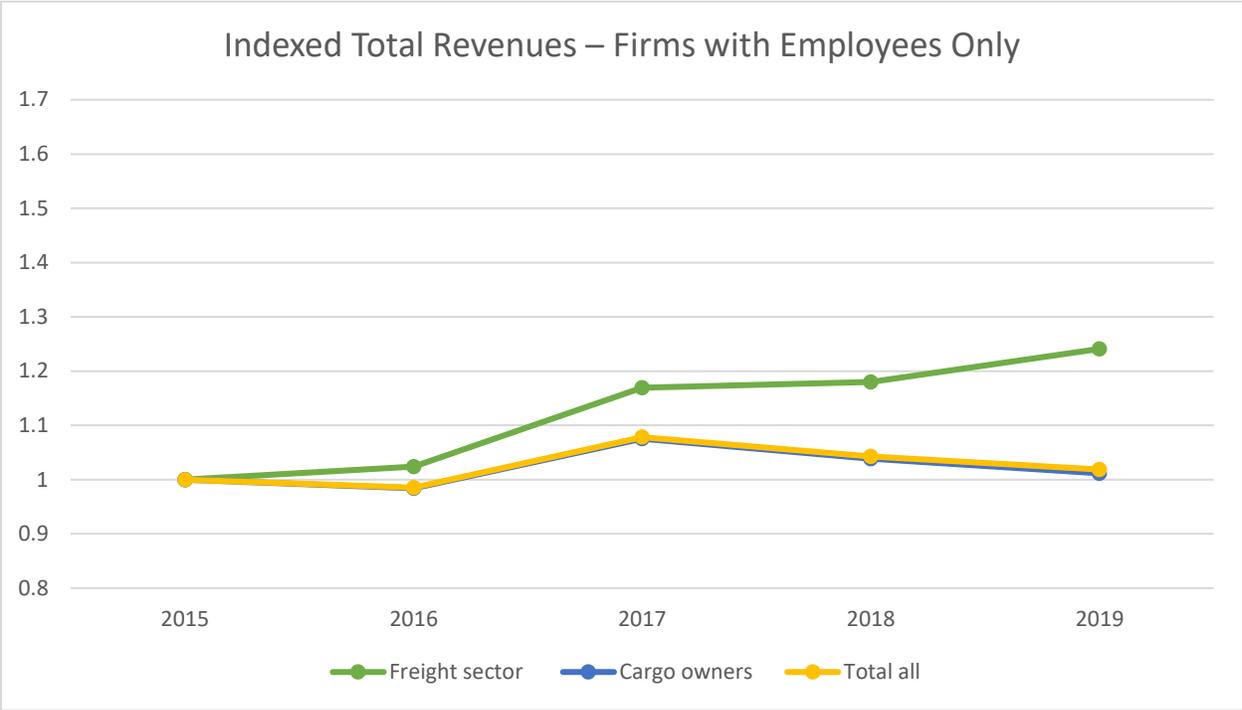
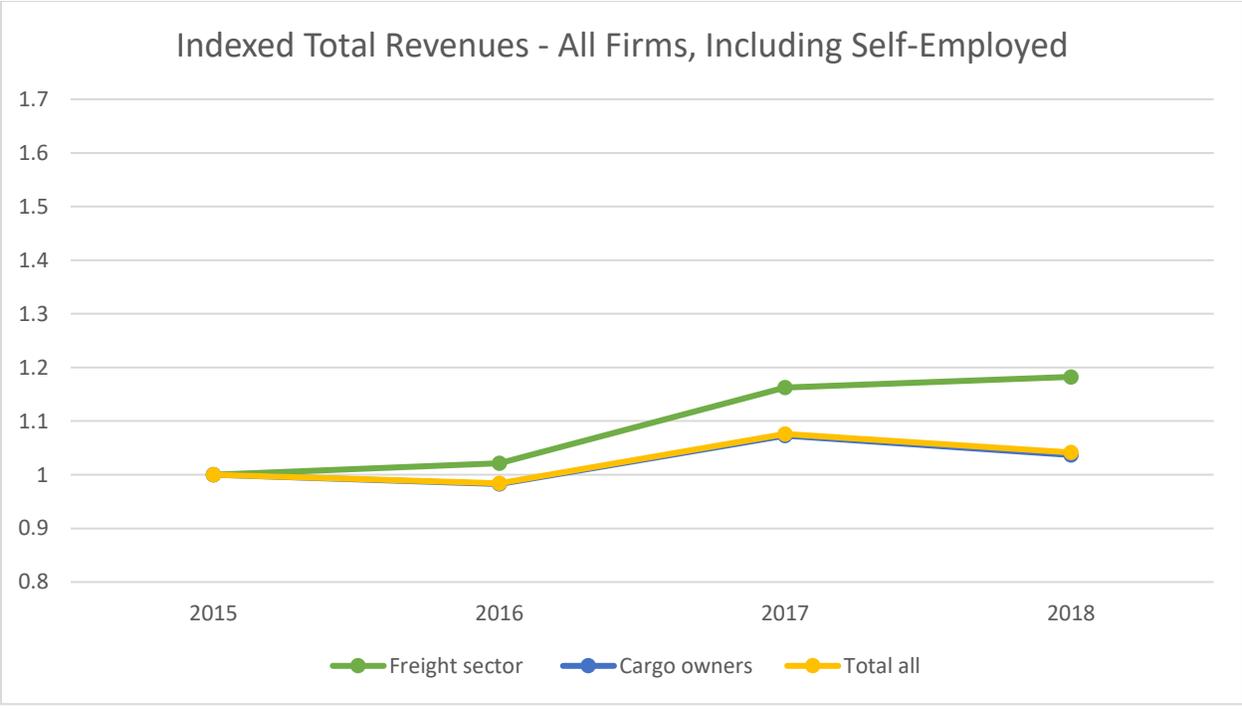


Figure 3: Total revenues, indexed, all firms including self-employed



3.1.2 Workforce Statistics

Number of employees/workers

Tables 4 and 5 give number of employees by year, subsector, and with and without self-employment. Employment has increased every year in every subsector within the freight sector, Employment for cargo owners has remained basically flat. The 2019 QCEW data are available, so we have a 5 year series for firms with employees only. There is a slight decrease in employees for cargo owners in 2019. When we include the self-employed, number of workers increases across the board.

Table 4: Number of employees, firms with employees only,

CA	Firms with employees only				
	2015	2016	2017	2018	2019
All carriers	220,510	232,269	240,498	250,757	265,557
Reverse logistics	47,591	48,675	50,080	52,802	53,916
Freight svc providers	149,434	165,575	206,806	211,524	250,007
Transp dependent	76,101	77,662	79,917	80,664	82,735
Freight sector total	493,636	524,181	577,301	595,747	652,215
Cargo owners	3,680,805	3,708,519	3,734,844	3,735,618	3,706,500
Total all	4,174,441	4,232,700	4,312,145	4,331,365	4,358,715

Table 5: Number of employees, including self-employed

CA	All firms, including self-employed			
	2015	2016	2017	2018
All carriers	320,331	340,027	367,943	403,128
Reverse logistics	49,248	50,249	51,728	54,473
Freight svc providers	160,385	177,819	224,581	223,936
Transp dependent	108,853	110,520	113,839	109,448
Freight sector total	638,817	678,615	758,091	790,985
Cargo owners	4,030,427	4,056,482	4,087,210	4,091,756
Total all	4,669,244	4,735,097	4,845,301	4,882,741

An important characteristic of the freight sector is the number of self-employed in some subsectors. Table 6 gives shares of self-employed for each year and subsector. For the freight sector as a whole, the share of self-employed is much higher than that of cargo owners, and the share has been increasing. Self-employment makes up a large share for all carriers and transportation dependent activities. All carriers is the largest subsector (accounts for about half of all freight sector jobs) and thus has a strong effect on the sector total.

Table 6: Share of self-employed by subsector and year

	Share self-employed			
	2015	2016	2017	2018
All carriers	31%	32%	35%	38%
Reverse logistics	3%	3%	3%	3%
Freight svcs providers	7%	7%	8%	6%
Transp dependent	30%	30%	30%	26%
Freight sector total	23%	23%	24%	25%
Cargo owners	9%	9%	9%	9%
Total all	11%	11%	11%	11%

Figures 4-5 give employee data in index form. For firms with employees only, freight service providers grew the most, especially from 2018-2019. Growth is relatively flat for transportation dependent activities and cargo owners. Trends do not change much when adding the self-employed because the share of self-employed is relatively stable.

Figure 4: Number of workers by subsector, indexed, firms with employees only

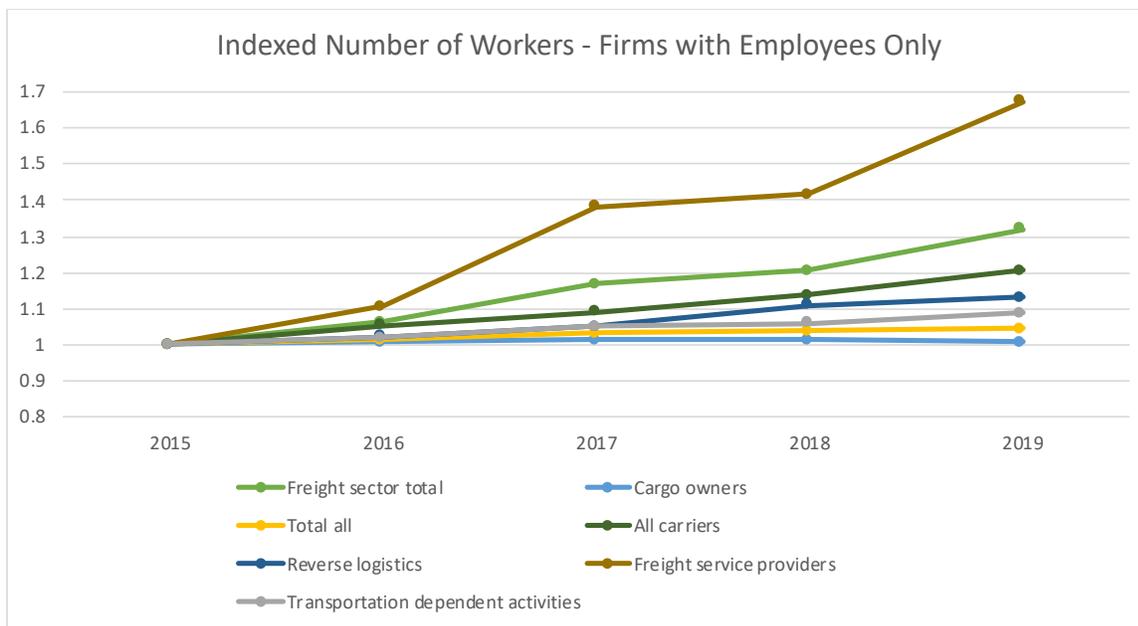
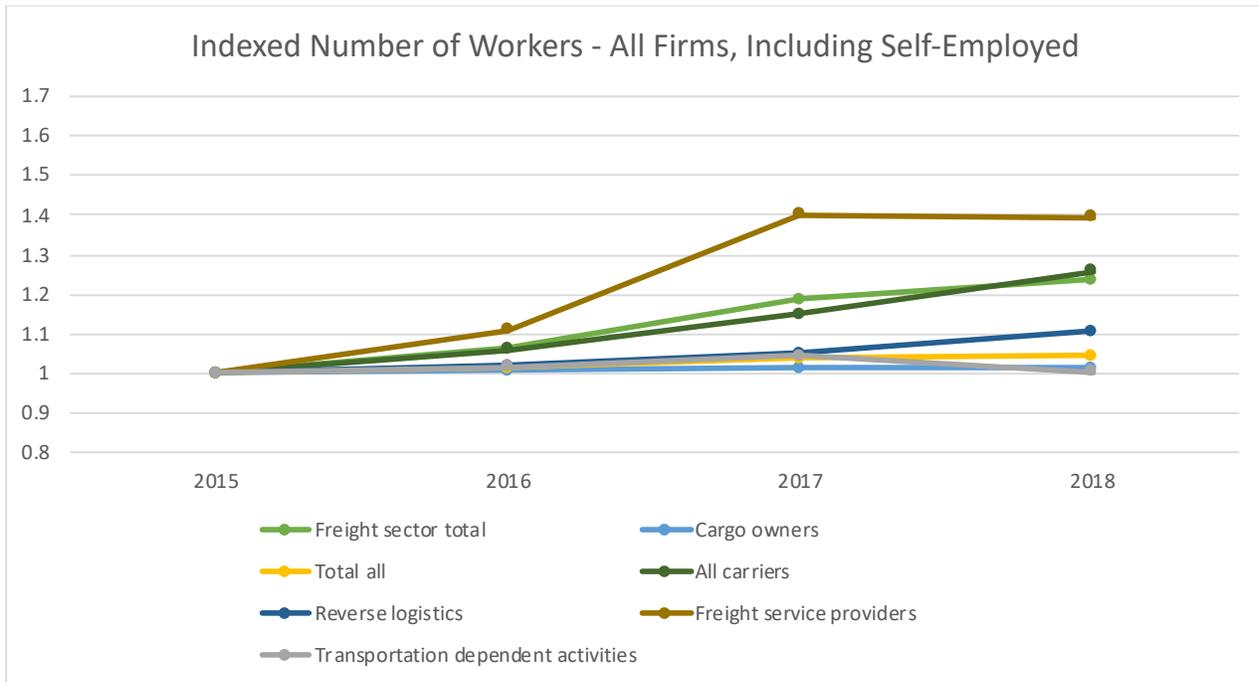


Figure 5: Number of workers by subsector, indexed, all firms including self-employed



Payroll

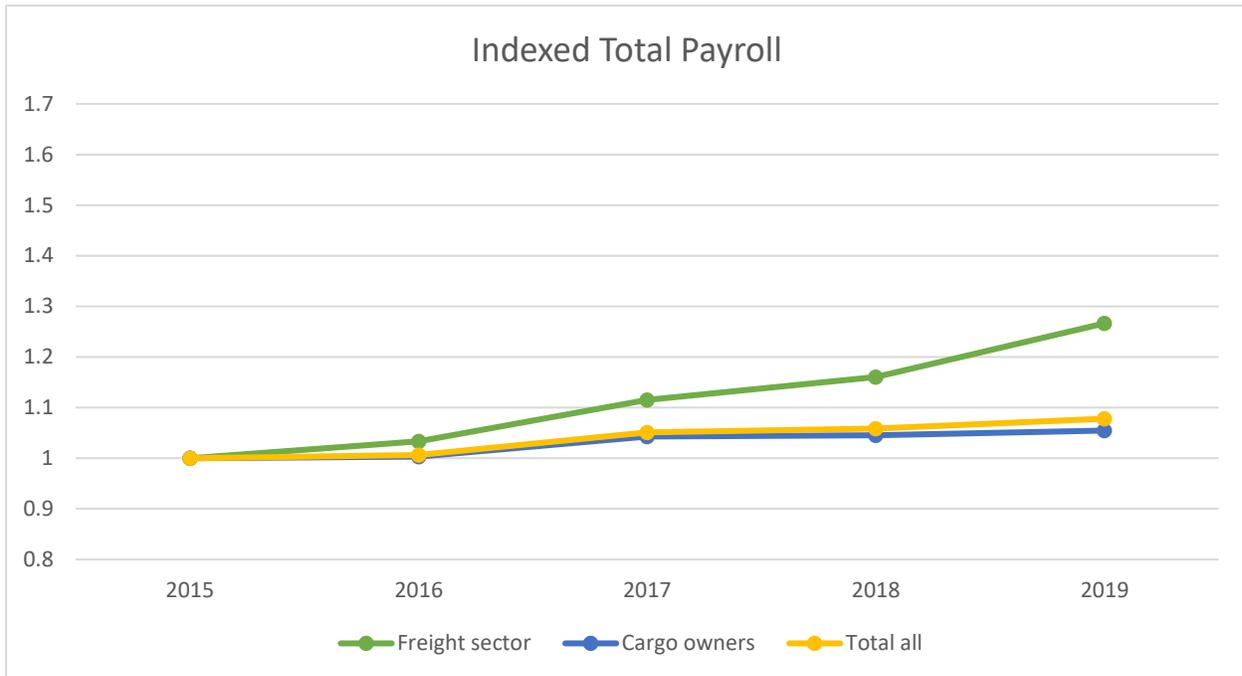
Table 7 gives total payroll in constant 2015 dollars for firms with employees only. Payroll steadily increases throughout the period for the freight sector, but peaks in 2017 for cargo owners and remains flat in the following years.

Table 7: Total payroll, firms with employees only, constant \$ millions

CA	Firms with employees only				
	2015	2016	2017	2018	2019
Freight sector	\$27,449	\$28,374	\$30,610	\$31,854	\$34,762
Cargo owners	\$220,654	\$221,320	\$230,131	\$230,744	\$232,719
Total all	\$248,103	\$249,693	\$260,741	\$262,598	\$267,481

Figure 6 give the Table 7 data in index form. It reveals the same trend. Freight sector payroll has increased about 28% and cargo owners payroll has increased about 5%.

Figure 6: Total payroll, indexed, freight sector, cargo owners and total

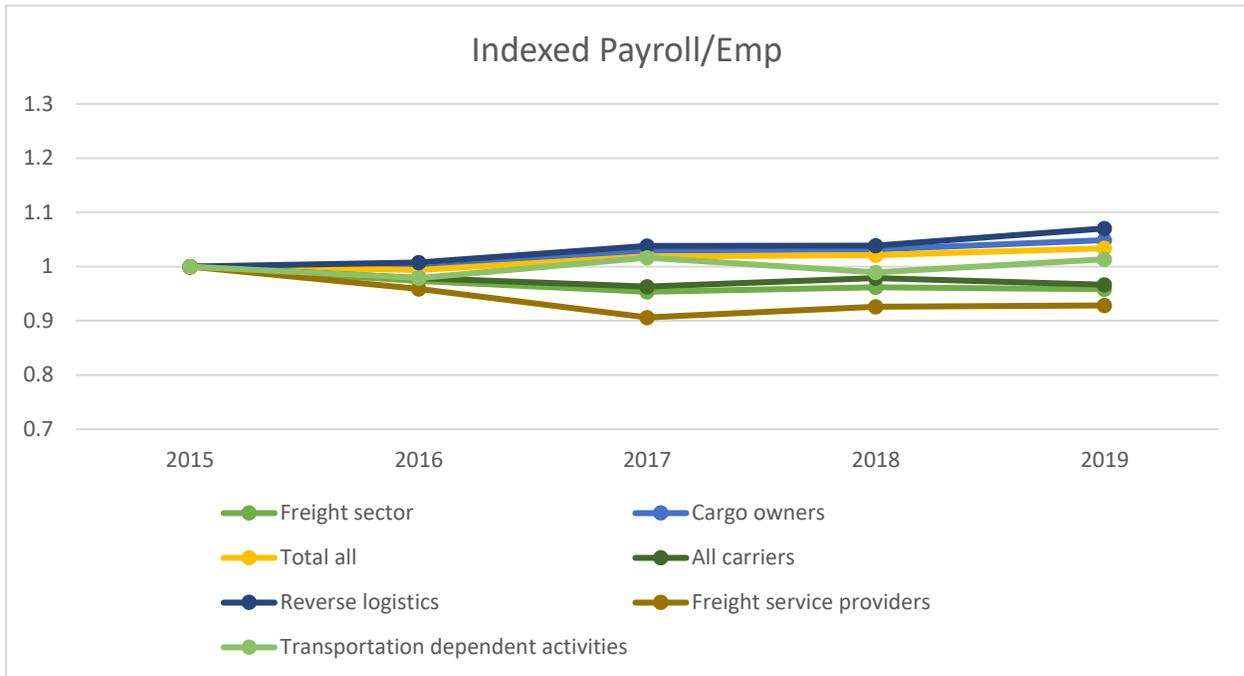


Rising payroll does not necessarily mean rising wages. Table 8 gives payroll per employee in 2015 dollars. We show the data for all the freight subsectors. The average annual freight sector payroll per employee is lower than that of cargo owners, There is a substantial range within the freight subsectors, for example in 2019, ranging from 47 to 69 thousand dollars. Perhaps more significantly, real wages have either declined or remained flat for all subsectors except reverse logistics, one of the smallest subsectors. Figure 7 gives the indexed data, which shows the variation across subsectors. Wages for all subsectors and cargo owners have remained in a tight range of plus or minus 5%.

Table 8: Payroll per employee, firms with employees only, constant dollars

CA	Firms with employees only				
	2015	2016	2017	2018	2019
All carriers	\$52,803	\$51,688	\$50,853	\$51,678	\$51,044
Reverse logistics	\$61,046	\$61,495	\$63,356	\$63,416	\$65,339
Freight service providers	\$51,507	\$49,390	\$46,677	\$47,707	\$47,810
Transp dependent activities	\$68,373	\$66,919	\$69,496	\$67,637	\$69,272
Freight sector	\$55,606	\$54,130	\$53,022	\$53,469	\$53,298
Cargo owners	\$59,869	\$59,679	\$61,617	\$61,768	\$62,787
Total all	\$59,365	\$58,991	\$60,467	\$60,627	\$61,367

Figure 7: Payroll per employee, 2015 constant dollars, indexed



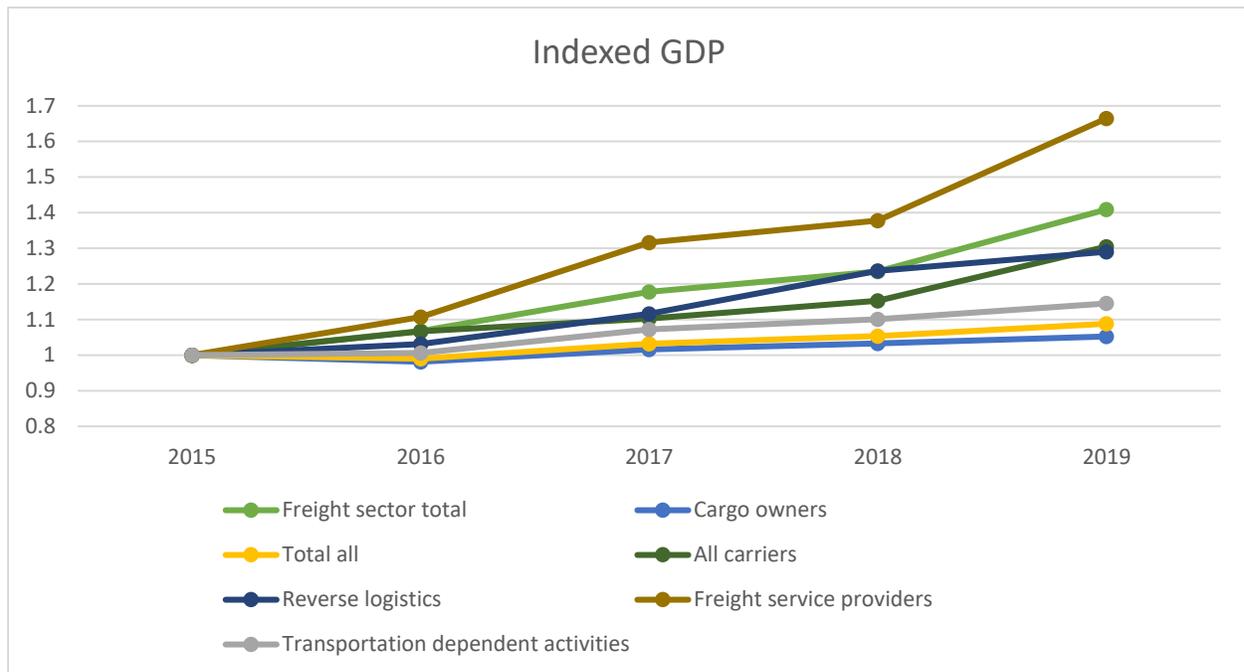
3.1.3 Overall Economic Performance

Our final metric is overall economic performance as measured by GDP. At the sector level GDP is a measure of a state’s output, defined as “the sum of value added from all industries in the state” (BEA). GDP is only available for firms with employees, which means it is an incomplete measure particularly for the subsectors that have a significant share of self-employment. Table 9 gives the 5 year constant dollar series of GDP by subsector, and Figure 7 gives the indexed data. GDP has increased about 40% for the freight sector and about 5% for cargo owners. Freight service providers again stands out as having increased the most, consistent with its increase in employment and revenues. The growth in this subsector reflects the growth of e-commerce.

Table 9: GDP by subsector, millions, constant dollars

CA	Firms with employees only				
	2015	2016	2017	2018	2019
All carriers	\$22,719	\$24,234	\$25,054	\$26,185	\$29,640
Reverse logistics	\$5,792	\$5,975	\$6,464	\$7,165	\$7,474
Freight service providers	\$23,742	\$26,276	\$31,249	\$32,712	\$39,522
Transp dependent activities	\$11,424	\$11,490	\$12,252	\$12,578	\$13,082
Freight sector total	\$63,677	\$67,976	\$75,018	\$78,641	\$89,718
Cargo owners	\$571,526	\$560,892	\$580,724	\$590,342	\$601,447
Total all	\$635,203	\$628,868	\$655,742	\$668,983	\$691,165

Figure 8: GDP by subsector, indexed



3.1.4 Summary

Our metrics show that revenues for the freight sector have increased, while revenues for cargo owners have remained relatively flat. Number of workers, whether measured as employees only or including the self-employed increased substantially in the freight sector but remains flat for cargo owners. For employees, payroll increases in the freight sector, but not enough to affect wages. Wages across the board are flat over the 5 year period. GDP increased by about 40% in the freight sector, compared to cargo owners at about 5%. The picture overall is of a growing freight sector with respect to revenues, workers, and GDP, but with little effect on wages. The freight sector is expanding, but flat wages suggest limited profitability.

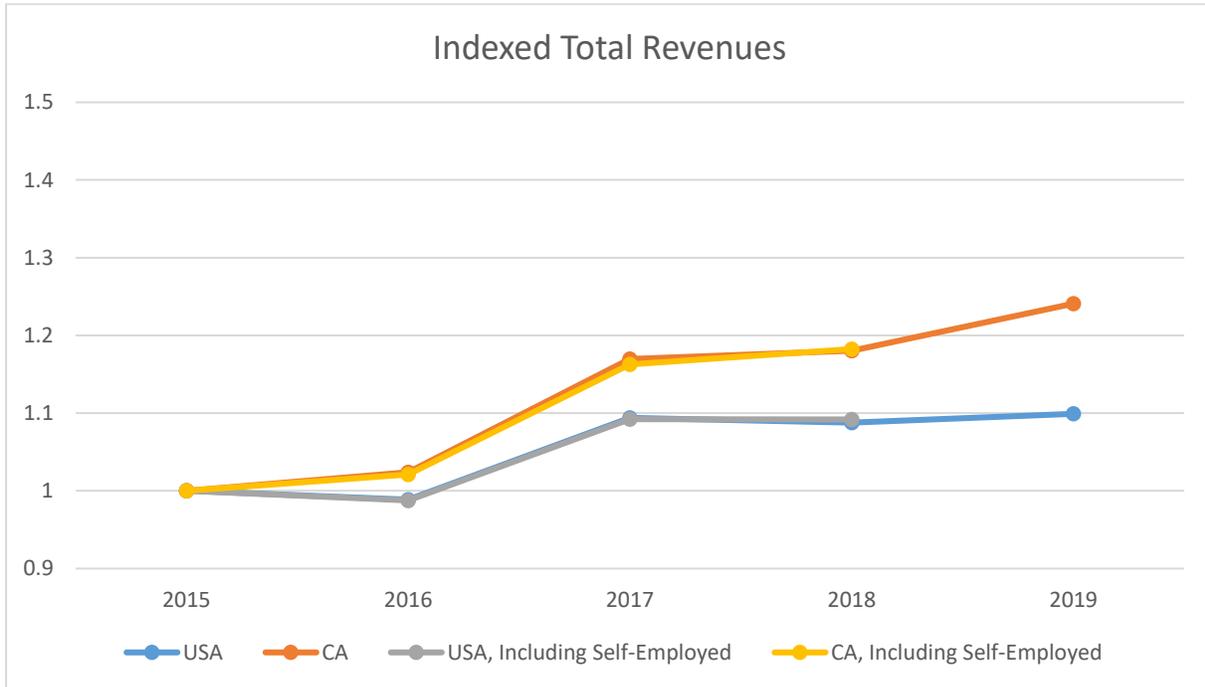
3.2 Comparisons of California Freight Sector with Rest of US

Our metrics give a relatively positive picture of the freight sector. The question is whether California is doing better or worse than the rest of the country. We calculated all the above metrics for the US and then compared California and the US. In this section we show only the summary indexed graphics. Data tables are provided in **Appendix A**.

3.2.1 Financial Performance

Figure 9 shows the indexed data for freight sector revenues (cargo owners not included). The figure has four lines: orange and yellow are California without and with self-employed respectively; grey and blue are US without and with self-employed respectively. The lines for with and without self-employed overlap and therefore are difficult to see. Note that the self-employed data is not yet available for 2019 and those series end with 2018. Over the period, revenues increased about 24% for California and about 10% for the US.

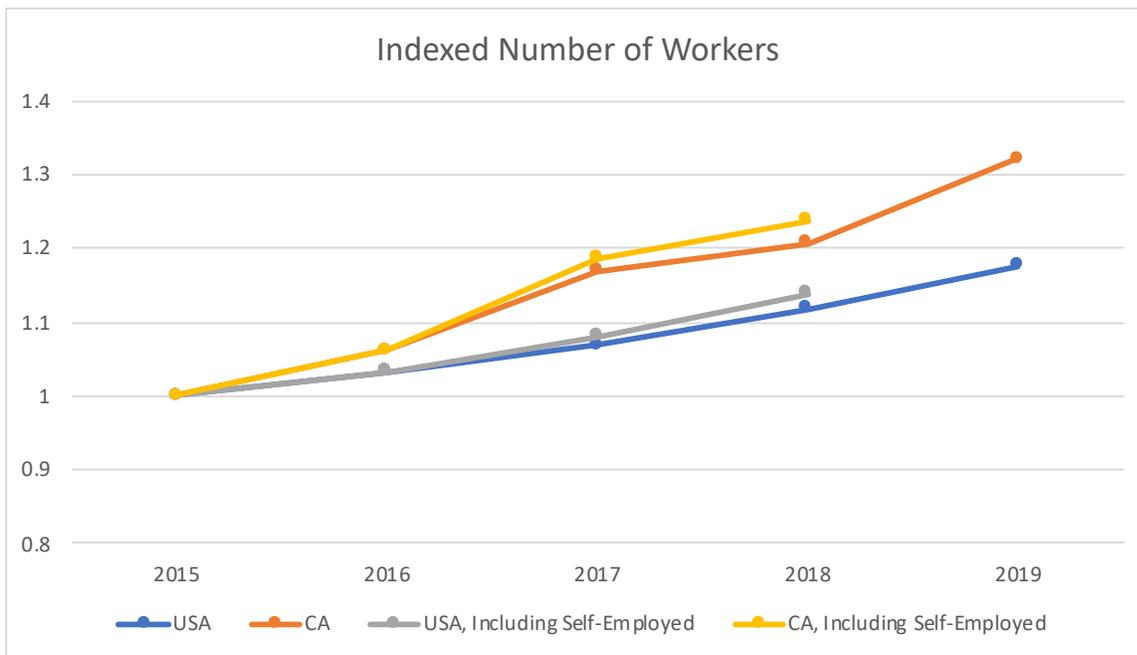
Figure 9: Total freight sector revenue, excluding cargo owners, indexed, with and without self-employed, CA and US (4 lines)



3.2.2 Workforce Metrics

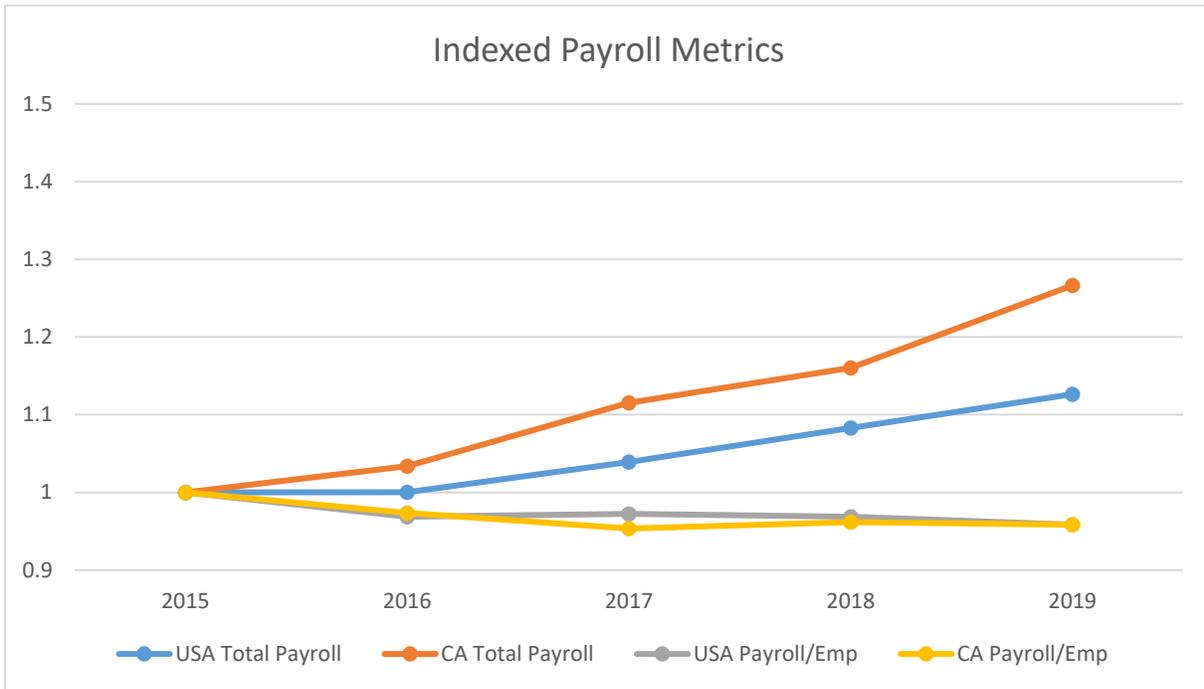
Figure 10 gives the indexed data for number of workers. The line colors have the same meaning as in Figure 9. The number of workers in the California freight sector has increased more than the US freight sector. From 2017 there is an approximate 10 percentage point difference between California and the US. When including the self-employed, growth is slightly more, but the difference between California and the US remains the same.

Figure 10: Total freight sector employees, indexed, California and US



The payroll comparisons are quite interesting. Figure 11 includes both total payroll and payroll per employee. Payroll has grown approximately in line with employees, with a slight increase in difference between California and US from 2018 to 2019. Payroll per employee declines by a few percentage points, and the trend is the same for both California and the US. Wage stagnation is not unique to California.

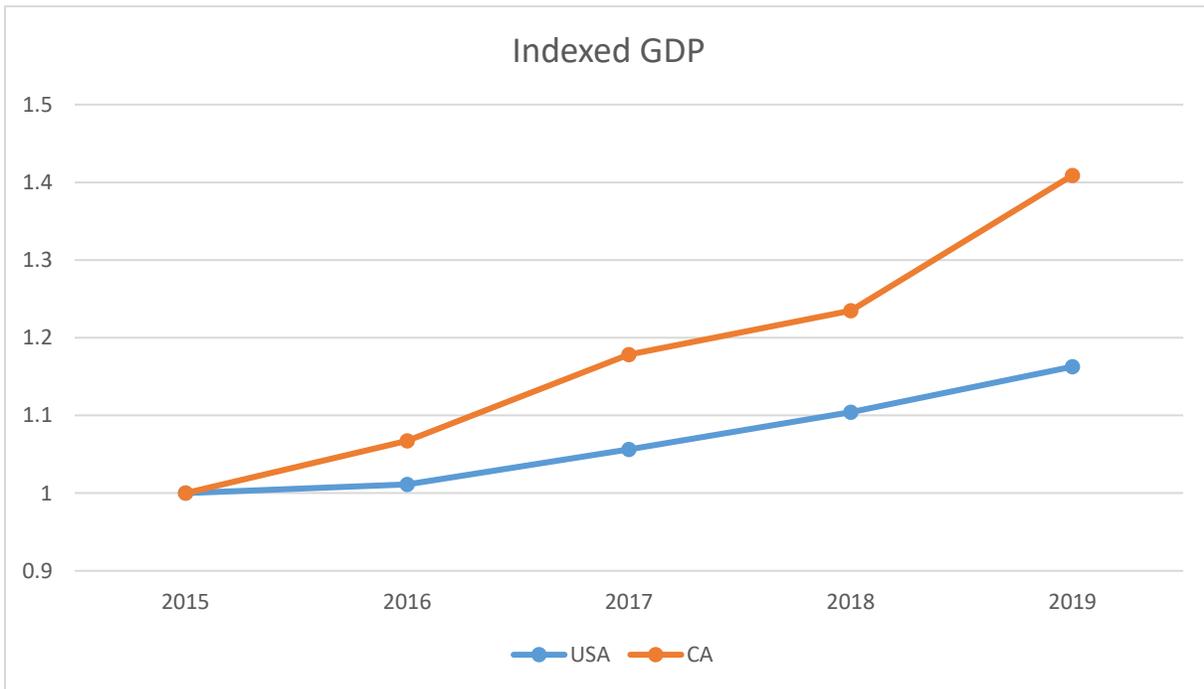
Figure 11: Total payroll and payroll per employee, indexed, California and US



3.2.3 Overall Economic Performance

The last metric is GDP. Figure 12 gives the indexed results. Consistent with the other metrics, California freight sector GDP increased by 40% while US freight sector GDP increased about 16%.

Figure 12: Freight sector GDP, indexed, California and US



3.2.4 Conclusions on Comparisons

Our results suggest that California's freight sector is growing, but the growth has not resulted in higher wages. Growth in employment, revenues, and GDP is faster than that of the US. What explains more rapid growth in California? Possible explanations include greater overall economic growth in California (real GDP increased 6% in the US and 11% in California from 2015 to 2018), as well as greater growth in manufacturing and high-tech industries, which would generate more freight demand. The stagnation in real wages in California is consistent with the US pattern. Stagnating wages suggest thin profit margins and a competitive industry. We note that the payroll data do not include the self-employed, and the share of self-employed is increasing over time. Thus we have an increasing share of the industry with unknown pay rates. An increasing share of self-employed may reflect increasing numbers of "gig" workers being paid per job or per delivery, which would push down the average wage.

4. Subsector Comparisons

This section examines two subsectors in more detail: the trucking industry and port-related industries. These subsectors may be particularly affected by the CSFAP and associated plans and regulations. There are a number of regulations aimed at achieving a zero-emission truck fleet by 2040, including targets for sales of zero emission heavy trucks and a low carbon fuel standard. The Los Angeles and Long Beach ports have committed to zero or near emission port operations by 2030, and CARB is soon to begin rulemaking to move all cargo handling equipment to zero emissions.

4.1 Trucking

This section presents a comparative evaluation of the trucking sector. When comparing specific subsectors, we include only the portion of each of our groups that includes subsector or subsector related activities. We do not include cargo owners, as we have no way to separate out the transportation portion of these sectors. For trucking, there are trucking related activities in all carriers, freight transportation service providers, all transportation dependent activities. Table 10 below lists all the 6-digit activities included in the trucking comparisons.

California trucking sector performance is compared with Nevada, Arizona and Utah. These states were selected as the most logical to compete for California business, or for warehousing and transportation to relocate from California. It is important to note the difference in the population of these states. The 2020 estimated population of the states are: California, 39.54 million; Arizona, 7.15 million; Nevada, 3.10 million, and Utah, 3.27 million.¹ Thus California population is more than 5 times as large as Arizona and more than 10 times as large as Nevada and Utah. Differences in the relative scale of the trucking sector are comparable.

¹ Source: 2020 US Census, <https://www.populationu.com/gen/us-states-by-population>.

Table 10: Six digit sectors included in trucking metrics comparisons

Group	NAICS codes	
All carriers	Trucking-General Freight trucking, Local	484110
	General Freight trucking, Long distance, truckload	484121
	General Freight trucking, Long distance, less than truckload	484122
	Couriers/Last mile	491110
Freight transportation service providers	Couriers and express delivery	492110
	US postal Service	491110
All transportation dependent activities	Communication Equipment Repair and Maintenance	811213
	Other Electronic and Precision Equipment Repair and Maintenance	811219
	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	811310
	Home and Garden Equipment Repair and Maintenance	811411
	Appliance Repair and Maintenance	811412
	Re-upholstery and Furniture Repair	811420
	Funeral Homes and Funeral Services	812210
	Pet Care (except Veterinary) Services	812910

4.1.1 Financial Metrics

We present metrics for the entire trucking sector as defined in Table 10. Data for the three subsectors is available in Appendix B. Tables 11 and 12 give total revenues in real 2015 dollars for firms with employees only and all firms including the self-employed respectively. Figure 13 gives the Table 11 data in index form. Total revenues increase for all states, with the growth rate higher for California and Nevada than Arizona and Utah. Including the self-employed does not significantly change the pattern.

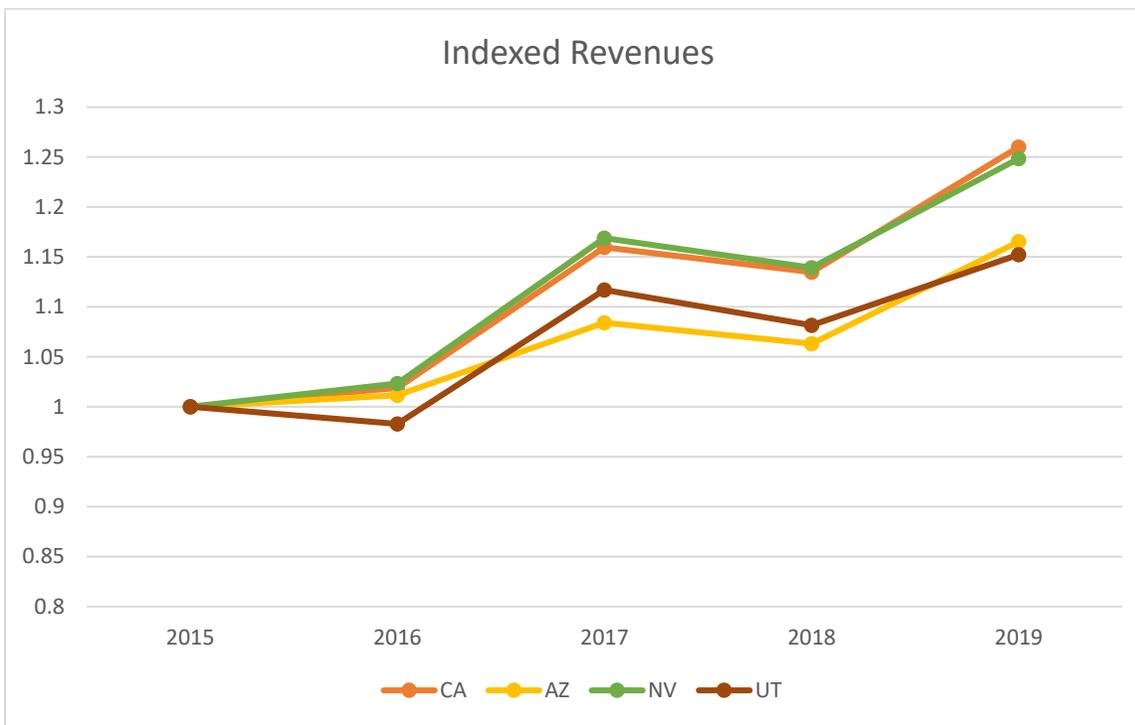
Table 11: Total revenues, firms with employees only, by state, real 2015 million dollars

State	Year				
	2015	2016	2017	2018	2019
California	\$29,141	\$ 29,691	\$ 33,792	\$ 33,068	\$ 36,716
Arizona	\$4,477	\$ 4,528	\$ 4,853	\$ 4,760	\$ 5,217
Nevada	\$1,611	\$ 1,649	\$ 1,883	\$ 1,836	\$ 2,011
Utah	\$3,255	\$ 3,199	\$ 3,636	\$ 3,520	\$ 3,750

Table 12: Total revenues, all firms including self-employed, by state, real 2015 million dollars

State	2015	2016	2017	2018
California	\$39,089	\$ 39,646	\$ 44,677	\$ 44,205
Arizona	\$5,478	\$ 5,520	\$ 5,918	\$ 5,872
Nevada	\$2,007	\$ 2,050	\$ 2,369	\$ 2,350
Utah	\$3,660	\$ 3,589	\$ 4,057	\$ 3,951

Figure 13 – Indexed revenues by state, firms with employees only



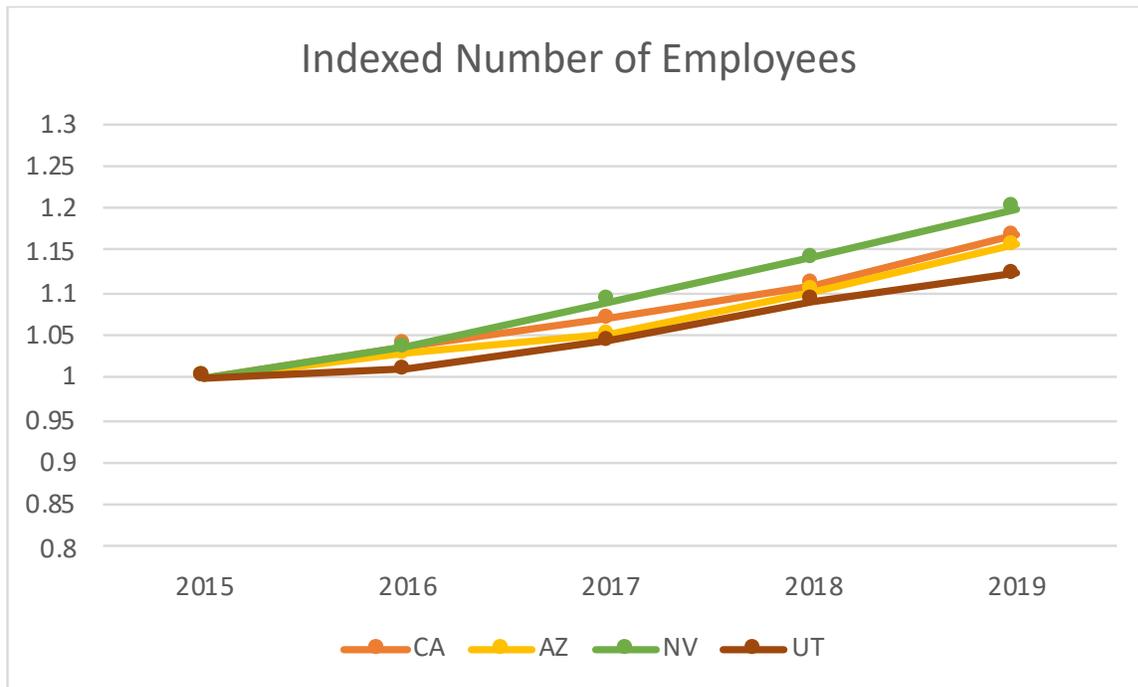
4.1.2 Workforce Statistics

Table 13 give number of employees by state and Figure 14 gives the same data in index form. As observed for the freight sector as a whole, trucking employment increased. Nevada employment increased the most, about 20%. California and Arizona employment increased about 16%; Utah had the smallest increase at 12%.

Table 13: Number of employees by state, firms with employees only

State	Year				
	2015	2016	2017	2018	2019
California	250,144	259,693	267,621	277,399	292,077
Arizona	41,593	42,803	43,707	45,837	48,131
Nevada	16,335	16,922	17,822	18,643	19,587
Utah	29,830	30,092	31,154	32,548	33,506

Figure 14: Indexed number of employees by state, firms with employees only



The relative ranking of the states is the same when we include the self-employed, but the differences between states are greater. Including the self-employed increases the growth rate for all states, meaning that growth of self-employment is more rapid than growth of the employed workforce. The change is the most dramatic for Nevada, where the difference between employed only and total is eight percentage points.

Table 14: Number of employees by state, all firms including self-employed

State	Year			
	2015	2016	2017	2018
California	376,919	393,171	419,558	446,153
Arizona	56,974	59,026	61,944	66,452
Nevada	22,065	23,372	26,340	28,248
Utah	35,387	35,654	37,166	39,549

Figure 15: Indexed number of employees by state, all firms including self-employed

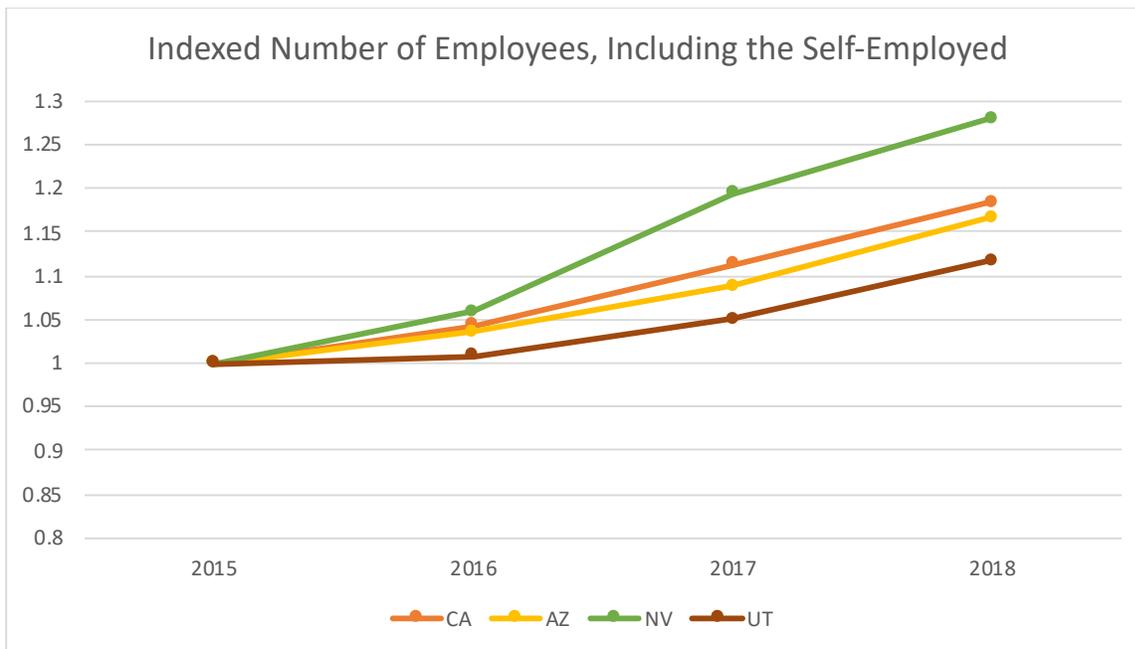


Table 15 shows total payroll by state, and Table 16 shows payroll per employee. Figure 16 gives Table 16 data in indexed form. Table 15 shows that total payroll remains flat or increases slightly in every state. Table 16 shows that by 2019 the average wage is similar across the states, ranging from roughly \$46,000 in Utah to \$50,000 in Nevada and California. Given the far higher cost of living, California wages appear to be relatively low. Figure 16 shows that payroll per employee remains flat or declines slightly in each state. These patterns are consistent with the pattern of the California freight sector as a whole (Section 3.1). The data also show that stagnating wages in the trucking industry are not unique to California. However, we note that these numbers are before the COVID pandemic and associated driver shortages.

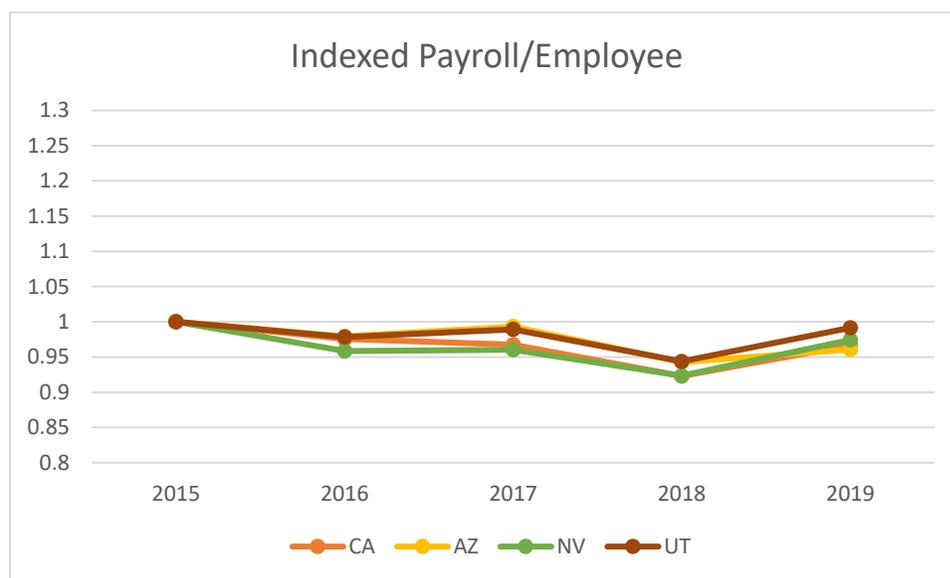
Table 15: Payroll by state, firms with employees only, 2015 million dollars

State	Year				
	2015	2016	2017	2018	2019
California	\$12,936	\$ 13,104	\$ 13,388	\$ 13,241	\$ 14,599
Arizona	\$2,037	\$ 2,053	\$ 2,126	\$ 2,116	\$ 2,264
Nevada	\$844	\$ 838	\$ 884	\$ 889	\$ 986
Utah	\$1,380	\$ 1,362	\$ 1,426	\$ 1,421	\$ 1,537

Table 16: Payroll per employee by state, firms with employees only, 2015 dollars

State	Year				
	2015	2016	2017	2018	2019
California	\$51,715	\$ 50,460	\$ 50,026	\$47,731	\$49,982
Arizona	\$48,978	\$ 47,974	\$ 48,644	\$46,171	\$47,046
Nevada	\$51,649	\$ 49,512	\$ 49,610	\$47,695	\$50,325
Utah	\$46,268	\$ 45,272	\$ 45,772	\$43,666	\$45,882

Figure 16: Indexed payroll per employee by state



Another way to consider wages is relative to the average across all industries. Table 17 gives payroll per employee in annual dollars for each year from 2015 through 2019. The numbers are calculated from the QCEW data for each year. The first column gives payroll per employee for the trucking industry and the second column gives payroll per employee for all employees in the state. The last column gives the ratio of the trucking sector wage to average wage. In every year the trucking sector wage is lower than the average for California. It is also declining over time, reaching a low of about 75% in 2019. The decline in the ratio over the five years is 10%. The pattern of decline over time is apparent for every state, but from a higher base and with a smaller decline than California. These results may in part reflect differences in industry mix across the states. California's large hi-tech sector and its function as a major finance hub may be pushing up wages at the higher end, skewing the wage distribution. More research is required to better understand these differences.

Table 17: Comparison of payroll/employee in trucking sector and annual mean wage by state

	Trucking sector	All employees	Ratio
2015			
California	\$51,715	\$61,698	0.838
Arizona	\$48,978	\$47,933	1.022
Nevada	\$51,649	\$45,739	1.129
Utah	\$46,268	\$44,318	1.044
2016			
California	\$51,507	\$62,964	0.818
Arizona	\$48,969	\$48,523	1.009
Nevada	\$50,540	\$47,114	1.073
Utah	\$46,211	\$45,255	1.021
2017			
California	\$51,736	\$65,856	0.786
Arizona	\$50,307	\$50,146	1.003
Nevada	\$51,306	\$48,126	1.066
Utah	\$47,337	\$46,575	1.016
2018			
California	\$53,371	\$68,478	0.779
Arizona	\$51,627	\$51,865	0.995
Nevada	\$53,331	\$50,041	1.066
Utah	\$48,826	\$48,513	1.006
2019			
California	\$53,913	\$71,351	0.756
Arizona	\$50,745	\$53,807	0.943
Nevada	\$54,283	\$51,422	1.056
Utah	\$49,490	\$50,766	0.975

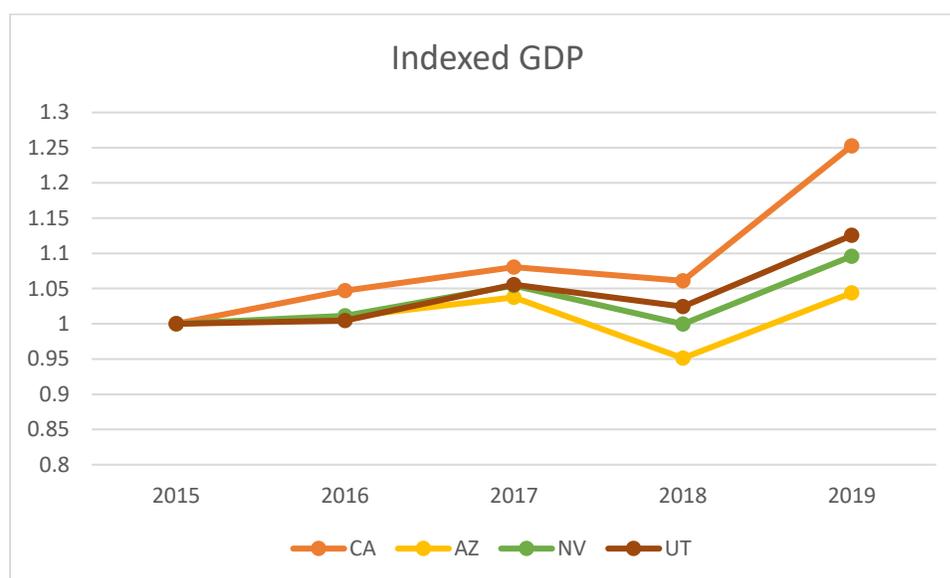
4.1.3 Overall Economic Performance

Table 18 and Figure 17 give trucking sector GDP by state. California has the only consistent increase in trucking GDP -- about 25% -- while the other states had smaller gains over the period. The increase in California trucking sector GDP is far lower than that of the California freight sector as a whole (40%).

Table 18: GDP by state, firms with employees only, 2015 million dollars

State	Year				
	2015	2016	2017	2018	2019
California	\$25,522	\$ 26,717	\$ 27,576	\$27,085	\$31,972
Arizona	\$4,374	\$ 4,415	\$ 4,538	\$ 4,160	\$ 4,565
Nevada	\$1,710	\$ 1,729	\$ 1,802	\$ 1,709	\$ 1,874
Utah	\$2,850	\$ 2,862	\$ 3,008	\$ 2,920	\$ 3,207

Figure 17: Indexed GDP by state



4.1.4 Conclusions on Trucking Comparisons

California's trucking sector is growing, but not as fast as that of other states. In terms of revenues, Nevada and California have grown more than Arizona and Utah. In contrast, California had the greatest growth in GDP. In terms of workers, Nevada has grown the most. Self-employed workers are growing faster than employed workers, with the biggest change observed in Nevada. Real wages have been relatively flat in all states, suggesting that sector growth has not benefitted workers. Comparing trucking sector wages to state averages shows that trucking has been losing ground. This trend is particularly pronounced in California, where the cost of living is much higher than in the comparison states. The implication is a highly competitive, thin profit industry.

4.2 Port Sector

We use different data to compare the California port sector to other states for three reasons. First, in previous phases of this research, we found that the QCEW data are unreliable for some port related 6-digit codes due to data suppression. Second, other states subsidize ports in various ways, and there is no straightforward way to identify these subsidies. Third, some ports are state entities and data such as employment may not be fully allocated to the ports. We therefore take a simpler approach of using trade statistics. The metrics are Vessel Value and Shipping Weight of Trade (SWT) for Imports, Exports

and Combined, which is simply the sum of imports plus exports. The data are further divided into containerized and not containerized shipments. Vessel Value is measured in US dollars, while Shipping Weight of Trade is measured in Kg. The data source is USA Trade and is available from the US Census website.² The data include all ports of entry within each state, which includes ports of any size.

4.2.1 Port Metrics

The comparison states were selected by the Working Group and include Georgia (GA), Virginia (VA), Washington (WA), and New York (NY). These states were selected as the most likely competitors to California ports. Table 19 gives total vessel value by state in constant 2015 dollars, and Table 20 gives market share relative to US total. Note this is all shipments both container and not container. There is no obvious trend either in dollars or market share. Figure 18 gives the same data in index form. Over the five-year period vessel value increased about 8% for Georgia, while all others decreased slightly. The unevenness in the pattern suggests a possible data problem. The data were re-downloaded and examined, and no inconsistencies were found.

Table 19: Vessel value, Imports and Exports, by state and year, 2015 million dollars

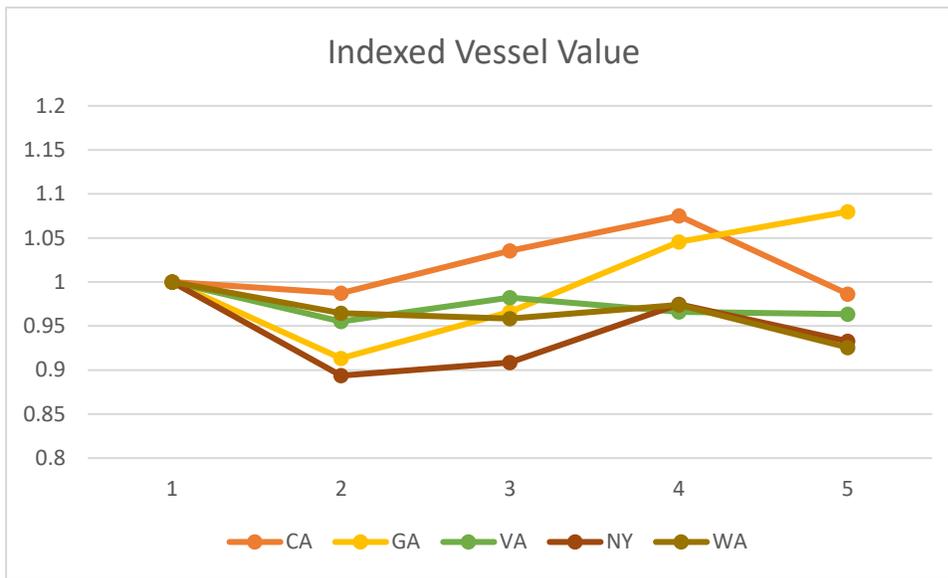
State	Year				
	2015	2016	2017	2018	2019
California	\$ 442,012	\$ 436,469	\$ 457,743	\$ 475,216	\$ 436,014
Georgia	\$ 107,759	\$ 98,422	\$ 104,107	\$ 112,667	\$ 116,367
Virginia	\$ 71,833	\$ 68,609	\$ 70,559	\$ 69,401	\$ 69,213
NY	\$ 206,932	\$ 184,932	\$ 188,004	\$ 201,712	\$ 193,043
Washington	\$ 83,092	\$ 80,153	\$ 79,640	\$ 80,931	\$ 76,917

Table 20: Market share by vessel value, state, and year, 2015 dollars

State	Year				
	2015	2016	2017	2018	2019
California	28%	30%	30%	29%	28%
Georgia	7%	7%	7%	7%	7%
Virginia	5%	5%	5%	4%	4%
NY	13%	13%	12%	12%	12%
Washington	5%	6%	5%	5%	5%

² Available at <https://usatrade.census.gov/data/Perspective60/View/dispview.aspx?ReportId=139520>.

Figure 18: Indexed vessel value by state and year, 2015 dollars



We provide the same comparisons for containerized freight only. Table 21 gives containerized vessel value in constant 2015 dollars by state and Figure 19 presents the same data in index form. California has steady growth through 2018, then declines back to 2015 levels in 2019. There are steady increases for Georgia and Virginia, and net losses for New York and Washington. Georgia container activity grew the most, about 18%. These differences are reflected in changes of market share (Table 22), with Georgia and Virginia gaining market share and the other states losing market share.

Table 21: Vessel value, containerized imports and exports only, by state and year, 2015 million dollars

State	Year				
	2015	2016	2017	2018	2019
California	\$ 357,237	\$ 358,923	\$ 375,110	\$ 391,360	\$ 355,146
Georgia	\$ 76,684	\$ 70,979	\$ 77,838	\$ 87,350	\$ 90,844
Virginia	\$ 61,357	\$ 59,877	\$ 63,519	\$ 64,920	\$ 65,583
NY	\$ 162,233	\$ 146,147	\$ 150,338	\$ 161,335	\$ 156,103
Washington	\$ 65,225	\$ 65,132	\$ 64,765	\$ 66,083	\$ 62,987

Figure 19: Indexes vessel value, containerized imports and exports only, by state and year

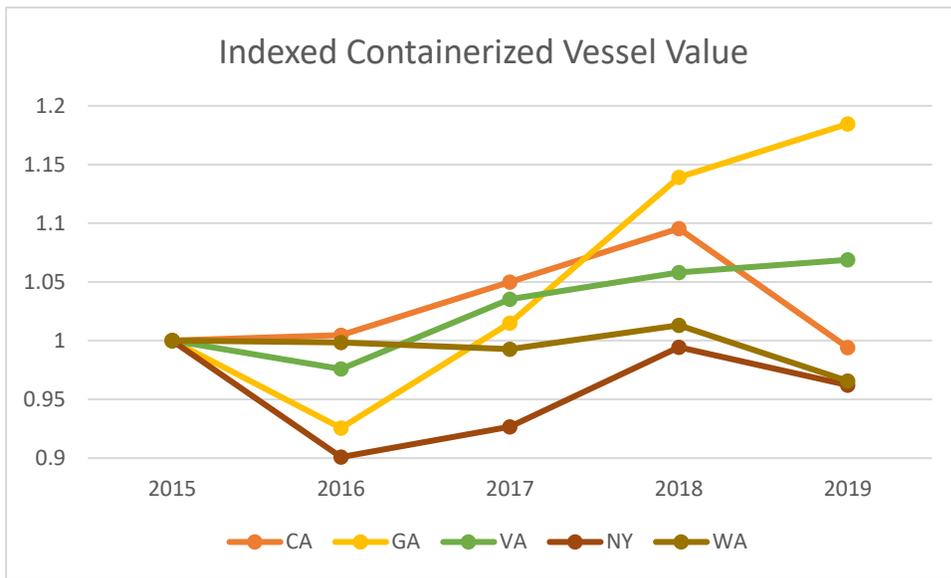


Table 24: Market share by vessel value, containerized imports and exports only

State	Year				
	2015	2016	2017	2018	2019
California	37%	38%	38%	38%	35%
Georgia	8%	8%	8%	8%	9%
Virginia	6%	6%	6%	6%	7%
NY	17%	16%	15%	15%	16%
Washington	7%	7%	7%	6%	6%

4.2.2 Conclusions on port metrics

The USA Trade data on vessel imports and exports suggests that the Georgia ports grew faster than others. The trends for containerized cargo are a little different; the Georgia growth increases to about 18% and Virginia increases to about 7%. The California and New York trends don't change, because container traffic dominates these ports. The data suggests some loss of market share for California, New York and Washington and gain of market share for Georgia and Virginia.

5. Conclusions

This is the first annual report of metrics to be produced under the Economic Competitiveness project. It is based on years of prior work that developed definitions for the freight sector, goals for the metrics, development of specific metrics, and extensive validation of the data and metrics. This process has resulted in a comprehensive set of metrics comparable across years. The fundamental purpose of this report is to track the economic competitiveness of California's freight sector as we progress in achieving the state's target greenhouse gas reduction goals. The intent of the CSFAP and following legislation is to achieve climate targets while improving the economic competitiveness of the freight sector. The annual freight sector economic performance reports will track progress in meeting the economic competitiveness goal.

There are two changes in the metrics from our prior work. First, we now use constant dollars for all metrics. With just a few years of data adjusting for inflation does not make a significant difference. However, with four- and five-year series using constant dollars is needed to assure valid time series comparisons. Second, we have created a new set of metrics for the port sector as a result of ongoing data suppression problems, lack of comparability across ports with different ownership structures, and other issues. We added a new data source, USA Trade, and track vessel imports and exports at the state level.

5.1 Summary of findings

For California our metrics show that revenues for the freight sector have increased, while revenues for cargo owners have remained relatively flat. Number of workers, whether measured as employees only or including the self-employed increased substantially in the freight sector but remains flat for cargo owners. For employees, payroll increases in the freight sector, but not enough to affect wages. Wages across the board are flat over the 5-year period. GDP increased by about 40% in the freight sector, compared to cargo owners at about 5%. The picture overall is of a growing freight sector with respect to revenues, workers, and GDP, but with little effect on wages.

Comparing California to the US, growth in employment, revenues, and GDP is faster than that of the US. What explains more rapid growth in California? Possible explanations include greater overall economic growth in California (real GDP increased 6% in the US and 11% in California from 2015 to 2018), as well as greater growth in manufacturing and high-tech industries, which would generate more freight demand. The stagnation in real wages in California is consistent with the US pattern. Stagnating wages suggest thin profit margins and a competitive industry. We note that the payroll data do not include the self-employed, and the share of self-employed is increasing over time. Thus, we have an increasing share of the industry with unknown pay rates. An increasing share of self-employed may reflect increasing numbers of "gig" workers being paid per job or per delivery, which would push down the average wage more than our metrics reflect.

California's trucking sector is growing, but not as fast as that of other states. In terms of revenues, Nevada and California have grown more than Arizona and Utah. In contrast, California had the greatest growth in GDP. In terms of workers, Nevada has grown the most. Self-employed workers are growing faster than employed workers, with the biggest change observed in Nevada. Real wages have been relatively flat in all states, suggesting that sector growth has not benefitted workers. Comparing trucking sector wages to state averages shows that trucking has been losing ground. This trend is

particularly pronounced in California, where the cost of living is much higher than in the comparison states.

The USA Trade data on vessel imports and exports suggests that the Georgia ports grew faster than others. The trends for containerized cargo are a little different; the Georgia growth increases to about 18% and Virginia increases to about 7%. The California and New York trends don't change because container traffic dominates these ports. The data suggests some loss of market share for California, New York and Washington and gain of market share for Georgia and Virginia.

5.2 Evaluation of metrics and future steps

As noted above, the metrics presented here are the result of extensive research and validation. With a four-year time series now assembled, we draw the following conclusions:

- The metrics overall are reliable and consistent over the years. The five-year interval of the Economic Census presents a problem because intervening year values must be interpolated. As we start each five-year series, there is some degree of incomparability that cannot be avoided.
- Making comparisons at the sub-sector level are helpful, as they reveal different patterns of growth and performance
- Comparisons of California to US are useful in putting California performance in a larger context.
- Subsector comparisons with competing states are helpful in revealing differences that may affect California's competitiveness. The trucking sector provides a good example.
- The metrics are limited by the lack of information on profitability. We have no way to distinguish revenues or GDP increasing due to higher profits or higher costs. Our best available proxy for profitability is wages.
- The time lag for data availability means that the metrics can never be up to date. This report reflects work performed in 2020 and 2021, yet the most recent year of full data is 2018. This is a particular problem due to the COVID pandemic's impact on the industry.

The results of this economic competitiveness analysis suggests three topics for further research. First, the employment and payroll data show that the share of self-employed is increasing, and for the employed, wages are stagnant. This trend is particularly evident for California's trucking sector, where wages are far lower than the average for all wages. The results may indicate significant labor market changes including the rise of "gig" work within the sector.

Second, the port subsector data is not as robust as measures of revenue and employment. The volume of imports and exports provides an indicator of scale of activity, but not on economic performance. We will continue to explore options for better port activity data.

Finally, to address both the lagged data problem and the limits to any set of metrics based on aggregates, we are considering the addition of case studies to the report. The case studies could be of even more specific sectors (e.g. courier services, warehousing), or of specific cases or firms. Examples might include examining the extent of gig work in local deliveries or tracking warehouse permit applications.

References

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Giuliano, G. and M. Hassan (2020) Implementation of Action 6 of CSFAP Phase 2a: Tracking Economic Competitiveness. Revised Final Report. METRANS Transportation Center. Available at

Data Management Plan

Products of Research

Data for this project were collected from the publicly available sources listed in Table 1 of this report. The data sources are used to generate economic competitiveness metrics for the California freight sector, the US freight sector, the trucking sectors of California, Arizona, Nevada and Utah, and the port sectors of California, Georgia, Virginia, New York, and Washington. This report covers a series from 2015 through 2018.

Data Format and Content

A description of the full data structure and computations is available in Giuliano, Yong and Vindrola (2021), Implementation of Action 6 of the California Sustainable Freight Action Plan (CSFAP) Phase 3: Tracking Economic Competitiveness. Final Report Part 2: Economic Competitiveness Metrics Data Description and Computations, available at https://www.mettrans.org/assets/upload/psr-18-sp90_part-2_giuliano_final-report-0.pdf. The data files are in Excel and MySQL.

Data Access and Sharing

The data sources are publicly available and can be accessed via web portals. See report referenced above for details. The Economic Competitiveness metrics data is a living database; it is updated annually as additional years of data become available. Economic competitiveness metrics data can be accessed by request to the METRANS Transportation Consortium, or by following the instructions in the above referenced final report.

Reuse and Redistribution

Metrics data may be reused with appropriate citation. There are no restrictions on redistribution of the data.

Appendix A- US Subsector Data

In the tables below the following acronyms are used:

- ac = all carriers
- r = reverse logistics
- s = service providers
- t = transportation dependent activities
- co = cargo owners
- emp = number of employees or workers

Moreover, real\$ stands for constant 2015 dollars.

Table 25: 2015 US metrics divided by subsector

United States of America 2015							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Emp	Emp, Including The self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
ac	3.20E+11	3.77E+11	2313898	3025139	1.24E+11	53656.32487	235664.0369
r	84106849887	85629944887	429530	448661	24065320935	56027.10156	47920
s	1.40E+11	1.46E+11	1371653	1492435	66829556131	48721.91154	211599.756
t	5.06E+11	5.15E+11	1089205	1366588	76895703326	70598.00802	234120.5182
co	1.86E+13	1.87E+13	34139266	36920666	1.70E+12	49882.60949	4316222.095
Freight sector	1.05E+12	1.12E+12	5204286	6332823	2.92E+11	56097.19435	729304.3111
total	1.96E+13	1.98E+13	39343552	43253489	1.99E+12	50704.66229	5045526.406

Table 26: 2016 US metrics divided by subsector

United States of America 2016							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Emp	Emp, Including The self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
ac	3.16142E+11	3.71652E+11	2358375	3101888	1.22625E+11	51995.29412	234431.4336
r	83654487170	85111863126	436083	454479	24331579644	55795.45514	46985.23394
s	1.42528E+11	1.48095E+11	1477421	1605333	68156038102	46131.93663	223690.2721
t	4.95624E+11	5.05203E+11	1101763	1380274	76905796051	69802.85453	232235.9809
co	1.8217E+13	1.83577E+13	34306523	37088910	1.69017E+12	49266.89803	4225557.646
Freight sector	1.03795E+12	1.11006E+12	5373642	6541974	2.92019E+11	54342.59647	737342.9206
total	1.92549E+13	1.94678E+13	39680165	43630884	1.98218E+12	49953.65051	4962900.566

Table 27: 2017 US metrics divided by subsector

United States of America 2017							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Emp	Emp, Including The self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
ac	3.55162E+11	4.17235E+11	2401966	3242951	1.25766E+11	52359.94839	240563.7459
r	95814298234	97366144608	449714	469116	25570446878	56859.13288	51162.8733
s	1.59961E+11	1.65965E+11	1595297	1731738	72687680604	45563.308	241283.1513
t	5.37415E+11	5.47057E+11	1115918	1396553	79375833314	71130.24051	237220.058
co	1.84938E+13	1.86368E+13	34490193	37355298	1.72996E+12	50158.21981	4309431.645
Freight sector	1.14835E+12	1.22762E+12	5562895	6840358	3.034E+11	54539.43729	770229.8285
total	1.96421E+13	1.98645E+13	40053088	44195656	2.03336E+12	50766.42679	5079660.507

Table 28: 2018 US metrics divided by subsector

United States of America 2018							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Emp	Emp, Including The self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
total	1.82158E+13	1.84324E+13	40456111	44728990	1.95611E+12	48351.32711	4935031.954
ac	3.39661E+11	4.05616E+11	2480594	3476177	1.23555E+11	49808.61009	234053.7111
r	90282348685	91810901850	458156	477680	24655011123	53813.5725	53179.36167
s	1.57045E+11	1.62947E+11	1746827	1869710	75167720158	43031.00431	248739.7368
t	4.98448E+11	5.06684E+11	1135653	1386185	76374172608	67251.32819	227021.3208
co	1.71304E+13	1.72654E+13	34634881	37519238	1.65635E+12	47823.31469	4172037.824
Freight sector	1.08544E+12	1.16706E+12	5821230	7209752	2.99752E+11	51492.87062	762994.1304

Table 29: 2019 US metrics divided by subsector

United States of America 2019						
Subsector	Revenues real\$	Emp	Payroll real\$	Payroll real\$ / emp	GDP real\$ million	
total	1.89499E+13	40725689	2.1E+12	51527.8123	5293793.342	
ac	3.68805E+11	2603867	1.35E+11	51655.5453	260684.4035	
r	96670025246	473235	2.71E+10	57230.5702	57968.14466	
s	1.7305E+11	1886197	8.53E+10	45219.9862	283622.7938	
t	5.15338E+11	1153911	8.2E+10	71082.6857	245692.1985	
co	1.7796E+13	34608479	1.77E+12	51132.0097	4445825.802	
Freight sector	1.15386E+12	6117210	3.29E+11	53767.0889	847967.5405	

Appendix B- Trucking Subsectors Metrics for California and the Comparison States

In the tables below the following acronyms are used:

- ac = all carriers
- t = transportation dependent activities

Moreover, real\$ stands for constant 2015 dollars.

Table 30: Trucking metrics divided by subsector for California in 2015

California 2015							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
ac	23065363416	31810630289	204645	300729	10742315436	52492.44026	21084.23008
t	6075891878	7277882841	45499	76190	2193962243	48220.01018	4437.715137
total	29141255294	39088513130	250144	376919	12936277679	51715.32269	25521.94522

Table 31: Trucking metrics divided by subsector for California in 2016

California 2016							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
ac	23668089527	32438861399	213551	316360	10912079374	51098.2359	22281.34052
t	6023340311	7207264114	46142	76811	2191966686	47504.80443	4435.785586
total	29691429839	39646125513	259693	393171	13104046060	50459.75848	26717.1261

Table 32: Trucking metrics divided by subsector for California in 2017

California 2017							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
ac	26896371423	36582725276	220701	340803	11114201347	50358.63611	22991.69342
t	6895857418	8093976262	46920	78755	2273843253	48462.13242	4584.310533
total	33792228841	44676701538	267621	419558	13388044600	50026.13621	27576.00396

Table 33: Trucking metrics divided by subsector for California in 2018

California 2018							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
total	33067566194	44205247020	277399	446153	13240581842	47731.18087	27085.23139
ac	26550285349	36744057404	228924	370707	11031546424	48188.68456	22650.14674
t	6517280845	7461189617	48475	75446	2209035419	45570.61204	4435.084649

Table 34: Trucking metrics divided by subsector for California in 2019

California 2019					
Subsector	Revenues real\$	Employees	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
total	36716206811	292077	1.5E+10	49982.13709	31972.47918
ac	29734666962	241576	1.2E+10	50248.8299	26963.02714
t	6981539848	50501	2.5E+09	48706.38846	5009.452044

Table 35: Trucking metrics divided by subsector for Arizona in 2015

Arizona 2015							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
ac	3493144119	4318349064	33653	44036	1685393892	50081.5348	3703.249638
t	983980458.1	1160136355	7940	12938	351764680	44302.8564	670.3125813
total	4477124577	5478485419	41593	56974	2037158572	48978.3995	4373.562219

Table 36: Trucking metrics divided by subsector for Arizona in 2016

Arizona 2016							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
ac	3555297034	4365954305	34637	45818	1697595766	49011.05079	3729.461151
t	972833113.5	1154059469	8166	13208	355840746.1	43575.89347	685.4028267
total	4528130147	5520013774	42803	59026	2053436513	47974.12596	4414.863977

Table 37: Trucking metrics divided by subsector for Arizona in 2017

Arizona 2017							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
ac	3853486243	4737765286	35362	48369	1748929486	49457.87809	3824.885793
t	999797501.7	1180175090	8345	13575	377160115.3	45195.93948	712.8644297
total	4853283745	5917940376	43707	61944	2126089601	48644.14396	4537.750222

Table 38: Trucking metrics divided by subsector for Arizona in 2018

Arizona 2018							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
total	4759902630	5871849621	45837	66452	2116349678	46171.20836	4160.341211
ac	3736634888	4689530023	36630	52733	1717982927	46900.98082	3424.748682
t	1023267742	1182319598	9207	13719	398366750.3	43267.81257	735.5925293

Table 39: Trucking metrics divided by subsector for Arizona in 2019

Arizona 2019					
Subsector	Revenues real\$	Employees	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
total	5216758455	48131	2.3E+09	47045.56182	4565.085166
ac	4113736067	38608	1.8E+09	47491.28001	3716.593571
t	1103022388	9523	4.3E+08	45238.53799	848.4915955

Table 40: Trucking metrics divided by subsector for Nevada in 2015

Nevada 2015							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
ac	1243652048	1587351486	12824	17095	672438268	52435.9223	1408.879945
t	367505076.6	419379073.8	3511	4970	171250199	48775.3344	300.7890842
total	1611157125	2006730560	16335	22065	843688467	51649.1256	1709.66903

Table 41: Trucking metrics divided by subsector for Nevada in 2016

Nevada 2016							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
ac	1291954370	1641740150	13450	18428	678979716.5	50481.76327	1443.735092
t	356780966.5	408592110.9	3472	4944	158869912.6	45757.46334	285.641637
total	1648735337	2050332262	16922	23372	837849629.2	49512.44702	1729.37673

Table 42: Trucking metrics divided by subsector for Nevada in 2017

Nevada 2017							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
ac	1491078859	1903688713	13842	20337	703453431.3	50820.21607	1476.323683
t	392100108.5	465022586	3980	6003	180698626	45401.66486	325.7587642
total	1883178968	2368711299	17822	26340	884152057.3	49610.14798	1802.082448

Table 43: Trucking metrics divided by subsector for Nevada in 2018

Nevada 2018							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
total	1835583317	2349914733	18643	28248	889186707.6	47695.47324	1709.009503
ac	1461329342	1911995879	14456	22322	709061850	49049.65758	1382.8757
t	374253975.2	437918853.8	4187	5926	180124857.5	43020.02807	326.1338029

Table 44: Trucking metrics divided by subsector for Nevada in 2019

Subsector	Revenues real\$	Employees	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
total	2011415246	19587	9.9E+08	50324.8082	1873.714633
ac	1602617677	15089	7.8E+08	51809.97986	1495.149564
t	408797569	4498	2E+08	45342.64832	378.5650692

Table 45: Trucking metrics divided by subsector for Utah in 2015

Utah 2015							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
ac	2649612568	2999433919	24097	27907	1098468200	45585.2679	2150.680102
t	605030075	660689246.5	5733	7480	281706756	49137.7561	699.1262428
total	3254642643	3660123165	29830	35387	1380174956	46268.0173	2849.806344

Table 46: Trucking metrics divided by subsector for Utah in 2016

Utah 2016							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
ac	2620029903	2948496465	24464	28247	1099053792	44925.35122	2179.233904
t	578676138.5	640927316.6	5628	7407	263271417.9	46778.85894	683.239176
total	3198706041	3589423782	30092	35654	1362325210	45272.00614	2862.473081

Table 47: Trucking metrics divided by subsector for Utah in 2017

Utah 2017							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
ac	3018559244	3378462110	25492	29685	1160100028	45508.3959	2308.021292
t	617156993.9	678874566.3	5662	7481	265872004.8	46957.25978	699.699737
total	3635716238	4057336676	31154	37166	1425972033	45771.71578	3007.721029

Table 48: Trucking metrics divided by subsector for Utah in 2018

Utah 2018							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
total	3520291681	3951101513	32548	39549	1421255637	43666.45067	2919.826167
ac	2902992323	3277591364	26459	31747	1147297994	43361.3513	2207.362621
t	617299358	673510149.3	6089	7802	273957642.5	44992.22245	712.463546

Table 49: Trucking metrics divided by subsector for Utah in 2019

Utah 2019					
Subsector	Revenues real\$	Employees	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
total	3750198866	33506	1.5E+09	45881.71001	3207.395081
ac	3097113193	27276	1.2E+09	45391.38985	2429.298421
t	653085673.5	6230	3E+08	48028.41508	778.09666