

# Implementation of Action 6 of CSFAP Phase 4 Tracking Economic Competitiveness

Economic Competitiveness Metrics  
Annual Report

December  
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A Research Report from the Pacific Southwest  
Region University Transportation Center

Genevieve Giuliano, Principal Investigator

Dan Wei, Co-Principal Investigator

Praise Olukilede Graduate Research Assistant

University of Southern California



University Transportation Center

**USC**Price

Sol Price School of Public Policy

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<b>16. Abstract</b> This report is one of two for Phase 4 of the Tracking Economic Competitiveness project. This is the Annual Economic competitiveness Metrics report, which presents competitiveness metrics and trends for California's freight sector. This research supports implementation of the California Sustainable Freight Action Plan (CSFAP) and the California Freight Management Plan (CFMP). This is the second annual performance metrics report. The six year series shows that the California freight sector continues to grow faster than that of the US, and faster than the general economy. Real revenues and employment continue to increase. Self-employment is growing faster than wage employment; self-employment now accounts for 45% of the sector workforce. Payroll per worker has recently increased, but not enough to move past 2015 levels. Significant tightening of the labor market is not yet reflected in wage increases. The trucking sector continues to grow approximately in parity with the comparison states (Arizona, Nevada, Utah). California wages continue to deteriorate relative to average state wage. The beginning of COVID effects are seen in a decline in GDP in 2020 and in the decline in vessel value for the port sector.					
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## Contents UPDATE

Acknowledgements	5
Abstract	6
Introduction	7
Freight Industry, Competitiveness, and Metrics	8
Economic Competitiveness	9
Data and Sources	10
Metrics	11
California Freight Sector Metrics	12
California Freight and Freight Related Sector Metrics	12
Comparisons of California Freight Sector with Rest of US	19
Subsector Comparisons	23
Trucking	23
Port Sector	30
Conclusions	38
Summary of findings	38
Evaluation of metrics and future steps	35
Data Management Plan	42
Appendix A- US Subsector Data	43
Appendix B- Trucking Subsectors Metrics for California and the Comparison States	46

## 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 Praise Olukilede conducted this research as part of the Implementation of Action 6 of CSFAP. Research was conducted at the Price School of Public Policy and Viterbi School of Engineering, University of Southern California. The research took place from May January 2022 to December 2023 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.

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## Abstract

This freight sector economic competitiveness metrics report is the second of a series. It is part of the research being conducted in support of implementation of the California Sustainable Freight Action Plan (CSFAP) and the California Freight Management Plan (CFMP). Its purpose is to track the economic competitiveness of California's freight sector as the CSFAP, CFMP and following policies are implemented to achieve the state's GHG reduction goals.

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. The data sources have different lags in when a given year's data becomes available; 2020 is currently the most recent year for which complete data are available. In this report we present six full years of data, from 2015 through 2020. Data sources and computations are stored in a MySQL database at USC.

The six year series shows that the California freight sector continues to grow faster than that of the US, and faster than the general economy. Real revenues and employment continue to increase. Self-employment is growing faster than wage employment; self-employment now accounts for 45% of the sector workforce. Payroll per worker has recently increased, but not enough to move past 2015 levels. Significant tightening of the labor market is not yet reflected in wage increases. The trucking sector continues to grow approximately in parity with the comparison states (Arizona, Nevada, Utah). California trucking wages continue to deteriorate relative to average state wage. The beginning of COVID effects are seen in a decline in GDP in 2020 and in the decline in vessel value for the port sector.

## Introduction

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, 2019). The first annual report was issued in 2022 (Giuliano, Wei and Vindrola, 2022).

The metrics are intended to measure the competitiveness of the industry relative to its competitors. 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 metrics are restricted to the sector itself and thus do not include conventional measures of competitiveness such as public infrastructure quality or general labor force attributes. Policies to achieve GHG reductions such as transition to zero emission trucks or cargo handling equipment will have their first order effects on the industry. California is leading this transition, hence firms operating in California face a unique operating environment. The metric comparisons will help us understand the impacts of this transition.

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.

## Freight Industry, Competitiveness, and Metrics<sup>1</sup>

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.

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<sup>1</sup> This section appeared in the first metrics report. It is included here to provide context for the rest of the report.



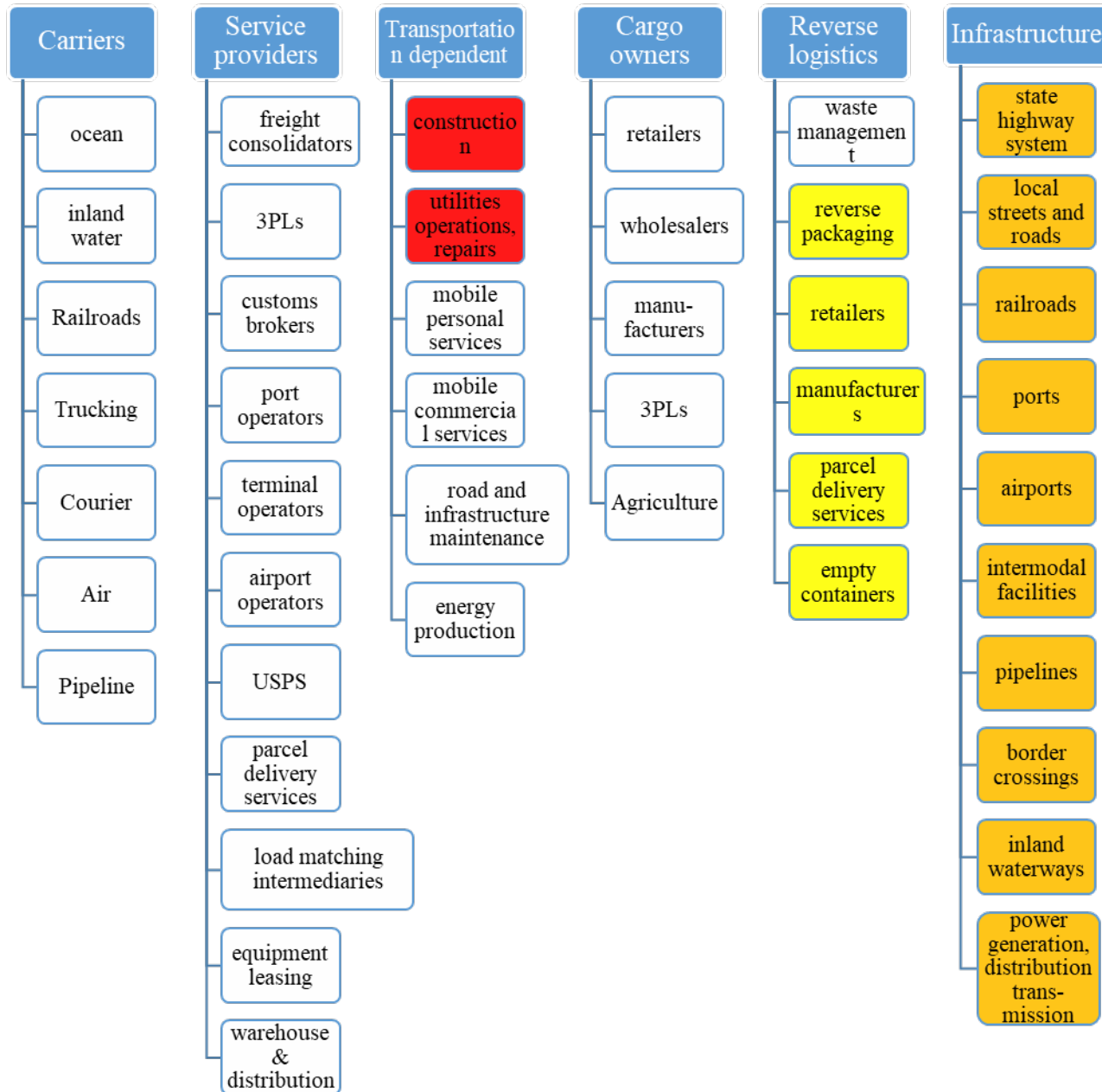


Figure 1: Freight sector enumerated by group

### 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.

## 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 and there is no other public source for such data. Therefore railroad industry and USPS 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	2020	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	

## 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

## California Freight Sector Metrics

We present all metrics for 2015 through 2020. 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 six years of data. Given the large number of metrics values generated, we provide summary results here and detailed results in Appendix A.

### California Freight and Freight Related Sector Metrics

#### Financial Performance

Table 3 and Figures 2 and 3 show financial performance, total revenues. Table 3 gives revenues for firms with employees only in the first panel, and the total adding the self-employed in the second panel. Figures 2 and 3 give the same information in index form. 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 and Hassan (2019) and Giuliano, Yong and Vindrola (2021) for details.

. All revenues are in constant 2015 dollars. Table 3 and the figures show a steady increase in revenues for the freight sector; the total for the 6 year period is about 27% without or with self employment. In contrast, cargo owners revenue has decreased from 2017 and is about 7% below the 2015 level. The trend is the same with or without self-employment.

Table 3: Total revenues, firms with employees only, in constant 2015 \$ millions

CA	Firms with employees only					
	2015	2016	2017	2018	2019	2020
<b>Freight sector</b>	\$64,109	\$65,641	\$74,984	\$75,657	\$79,520	\$81,101
<b>Cargo owners</b>	\$2,070,558	\$2,037,526	\$2,226,644	\$2,150,612	\$2,093,820	1,926,827
<b>Total all</b>	\$2,134,668	\$2,103,166	\$2,301,627	\$2,226,270	\$2,173,341	2,007,928

CA	All firms, including self-employed					
	2015	2016	2017	2018	2019	2020
<b>Freight sector</b>	\$74,811	\$76,396	\$86,990	\$88,458	\$92,157	\$94,396
<b>Cargo owners</b>	\$2,095,784	\$2,059,430	\$2,248,498	\$2,172,317	\$2,115,213	\$1,947,683
<b>Total all</b>	\$2,170,596	\$2,135,826	\$2,335,489	\$2,260,775	\$2,207,371	\$2,042,079

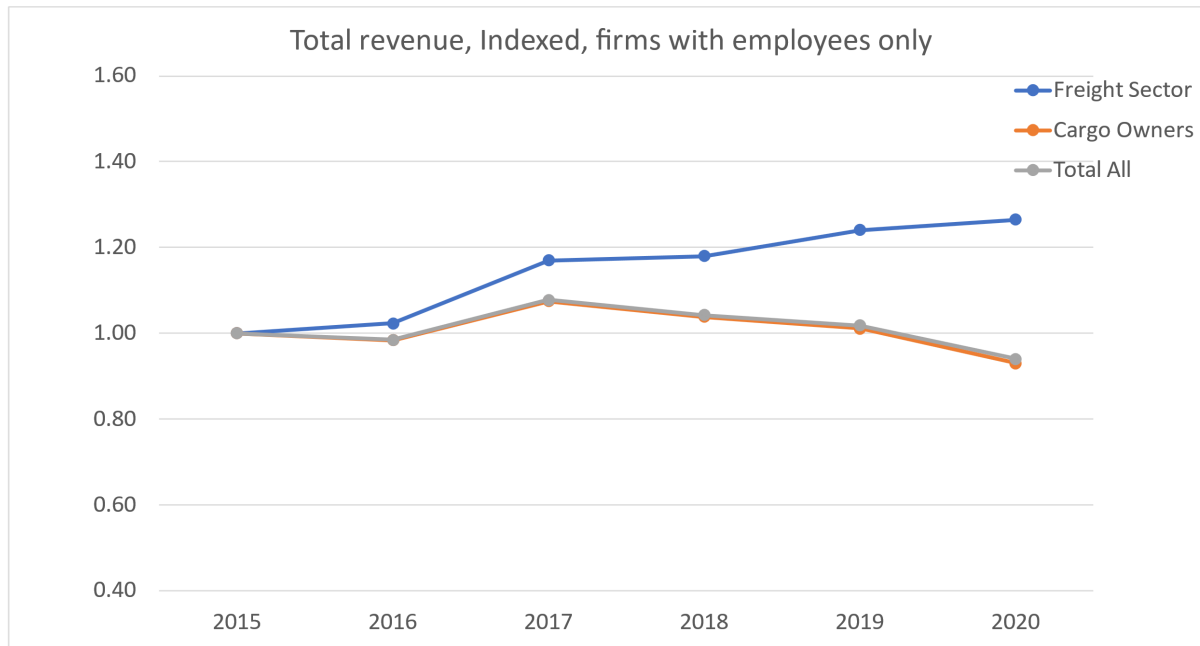
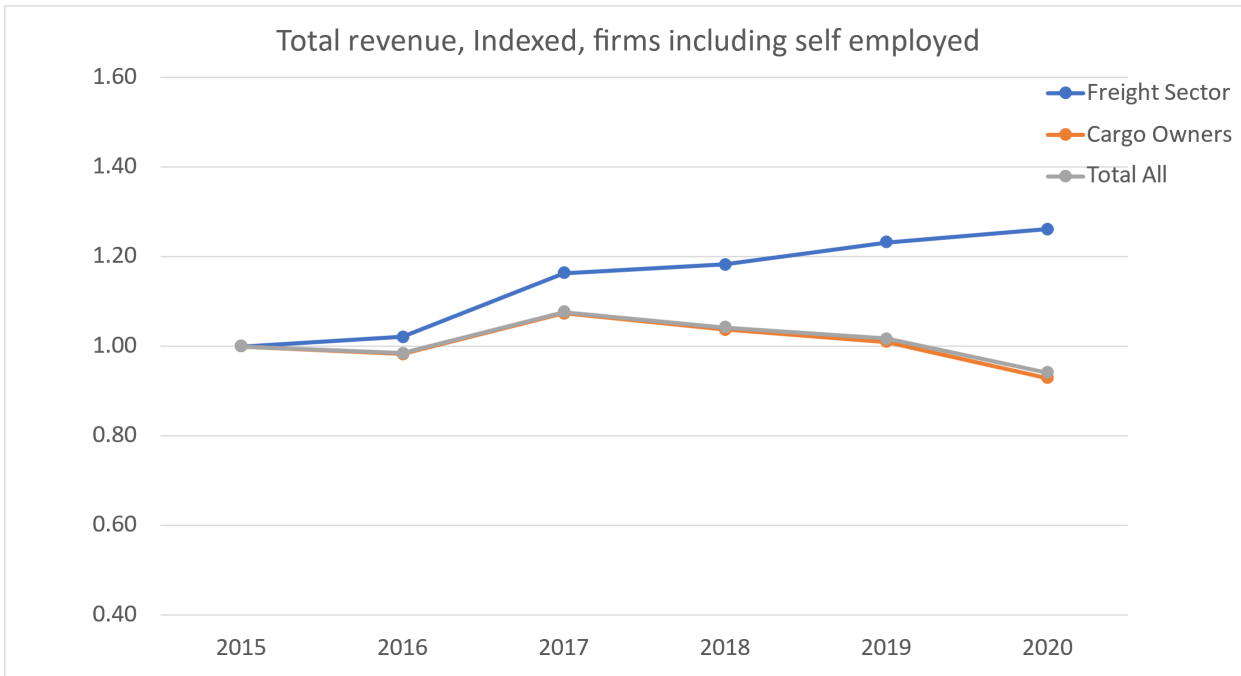
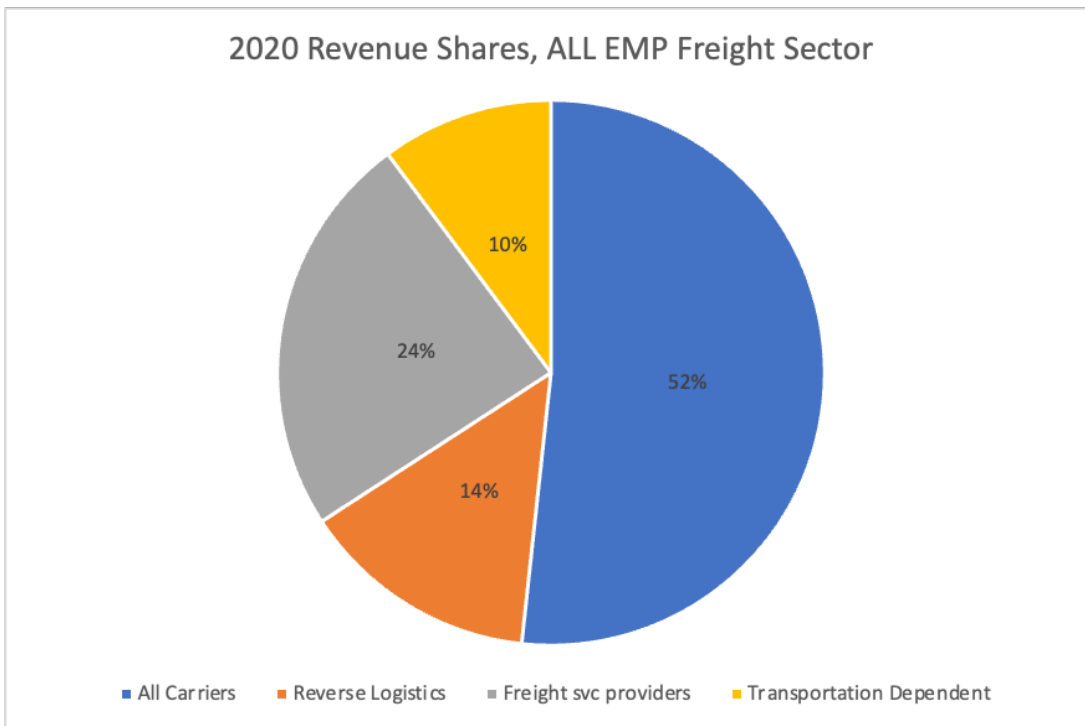


Figure 2: Total revenues, indexed, firms with employees only.



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

Figure 4 gives the share of revenue contributed by each subsector based on revenues including the self-employed. It shows that all carriers are by far the largest subsector, accounting for about half of all revenue. Freight service providers is the second largest at about 25%. Therefore, these subsectors have the most influence on trends for the sector as a whole.



**Figure 4: Freight subsector shares of revenue, 2020**

## Workforce Statistics

### Number of employees/workers

Tables 4 and 5 give number of employees by year, subsector, and with and without self-employment. Figure 5 shows the subsector shares for 2020, including self-employment. The dominance of all carriers and freight service providers is more pronounced, indicating less revenue per worker for these sectors. Employment has increased every year in every subsector within the freight sector with the exception of reverse logistics and transport dependent subsectors from 2019 to 2020. Trends are the same with or without the self-employed. Employment for cargo owners remained basically flat until 2020, likely reflecting early COVID impacts on retailing. Because all carriers and freight service providers increased and are the largest share of the sector, total freight sector 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	2020
<b>All carriers</b>	220,510	232,269	240,498	250,757	265,557	292,925
<b>Reverse logistics</b>	47,591	48,675	50,080	52,802	53,916	52,814
<b>Freight svc providers</b>	149,434	165,575	206,806	211,524	250,007	273,104
<b>Transp dependent</b>	76,101	77,662	79,917	80,664	82,735	79,494
<b>Freight sector total</b>	493,636	524,181	577,301	595,747	652,215	698,337
<b>Cargo owners</b>	3,680,805	3,708,519	3,734,844	3,735,618	3,706,500	3,464,304
<b>Total all</b>	4,174,441	4,232,700	4,312,145	4,331,365	4,358,715	4,162,641

Table 5: Number of employees, including self-employed

CA	All firms, including self-employed					
	2015	2016	2017	2018	2019	2020
<b>All carriers</b>	320,331	340,027	367,943	403,128	436,122	534,912
<b>Reverse logistics</b>	49,248	50,249	51,728	54,473	55,546	54,577
<b>Freight svc providers</b>	160,385	177,819	224,581	223,936	264,293	287,170
<b>Transp dependent</b>	108,853	110,520	113,839	109,448	110,358	104,622
<b>Freight sector total</b>	638,817	678,615	758,091	790,985	866,319	981,281
<b>Cargo owners</b>	4,030,427	4,056,482	4,087,210	4,091,756	4,059,905	3,828,872
<b>Total all</b>	4,669,244	4,735,097	4,845,301	4,882,741	4,926,224	4,810,153

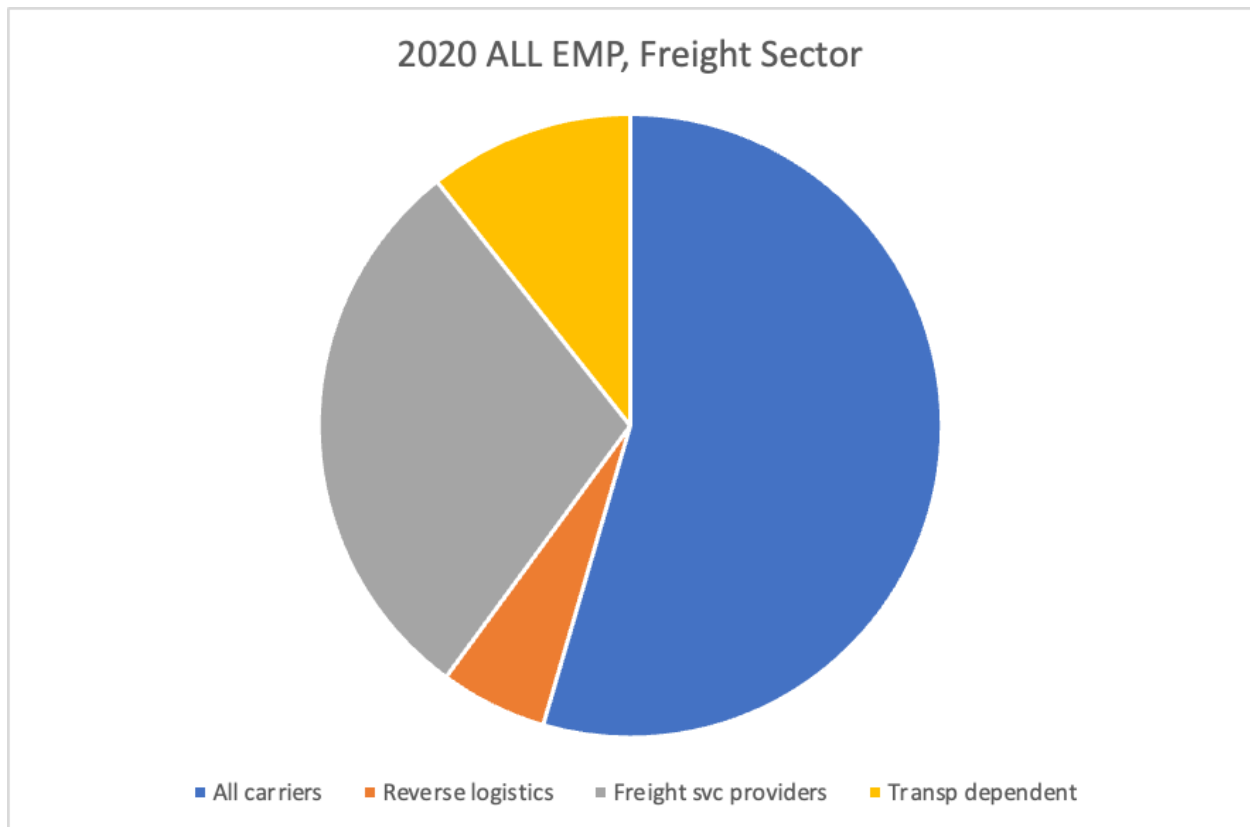


Figure 5: Subsector shares of workers including self-employed, 2020



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, reaching 29% in 2020. Self-employment makes up a large share for all carriers and it has been increasing over the entire series. Transport dependent has the second highest share, but the share is decreasing. Because transport dependent is a small share of all freight sector employment it has little effect on the sector total.

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

Share self-employed						
	2015	2016	2017	2018	2019	2020
<b>All carriers</b>	31%	32%	35%	38%	39%	45%
<b>Reverse logistics</b>	3%	3%	3%	3%	3%	3%
<b>Freight svcs providers</b>	7%	7%	8%	6%	6%	5%
<b>Transp dependent</b>	30%	30%	30%	26%	25%	24%
<b>Freight sector total</b>	23%	23%	24%	25%	25%	29%
<b>Cargo owners</b>	9%	9%	9%	9%	9%	10%
<b>Total all</b>	11%	11%	11%	11%	12%	13%

Figures 6-7 give employee data in index form. The figures show that the fastest growth is within freight service providers, which includes delivery and courier services. Rapid growth tracks with e-commerce growth. All carriers continues to grow, but at a far slower rate. Other subsectors are flat or declining.

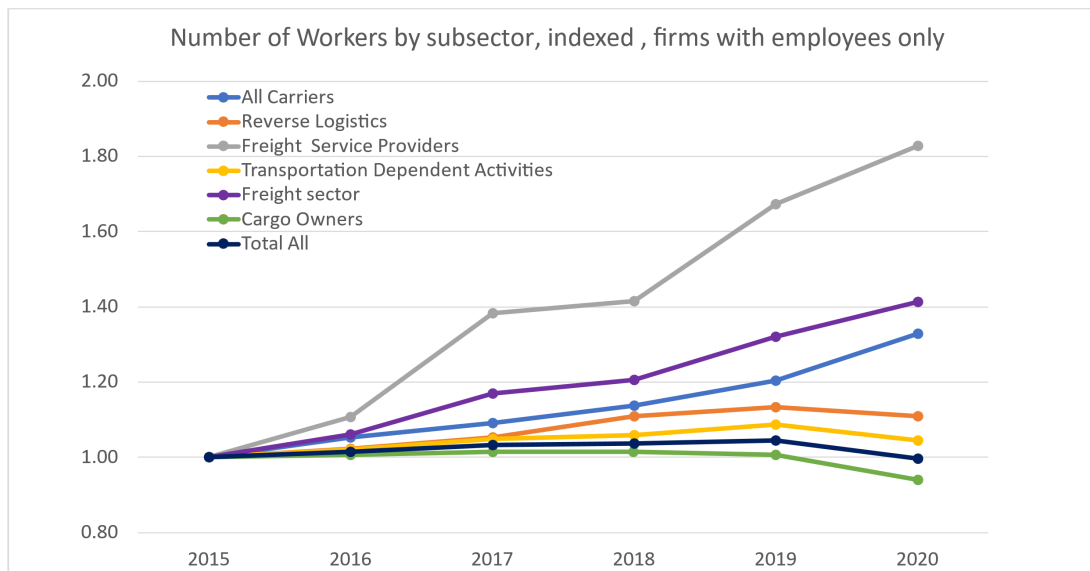
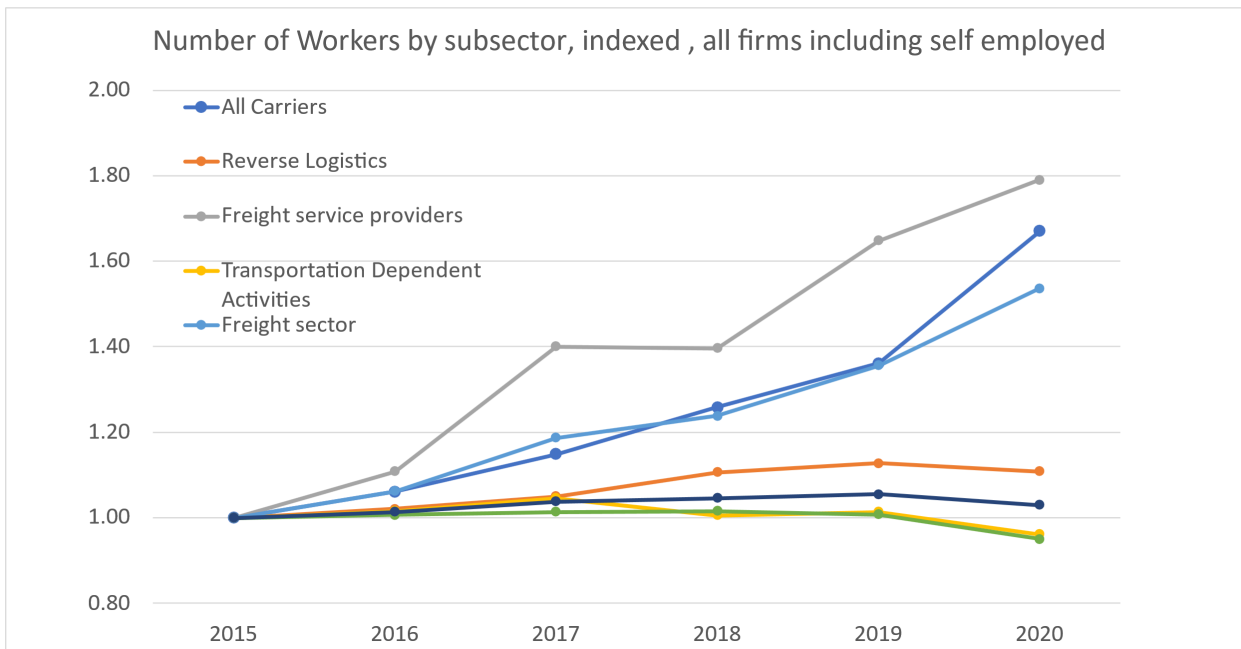


Figure 6: Number of workers by subsector, indexed, firms with employees only



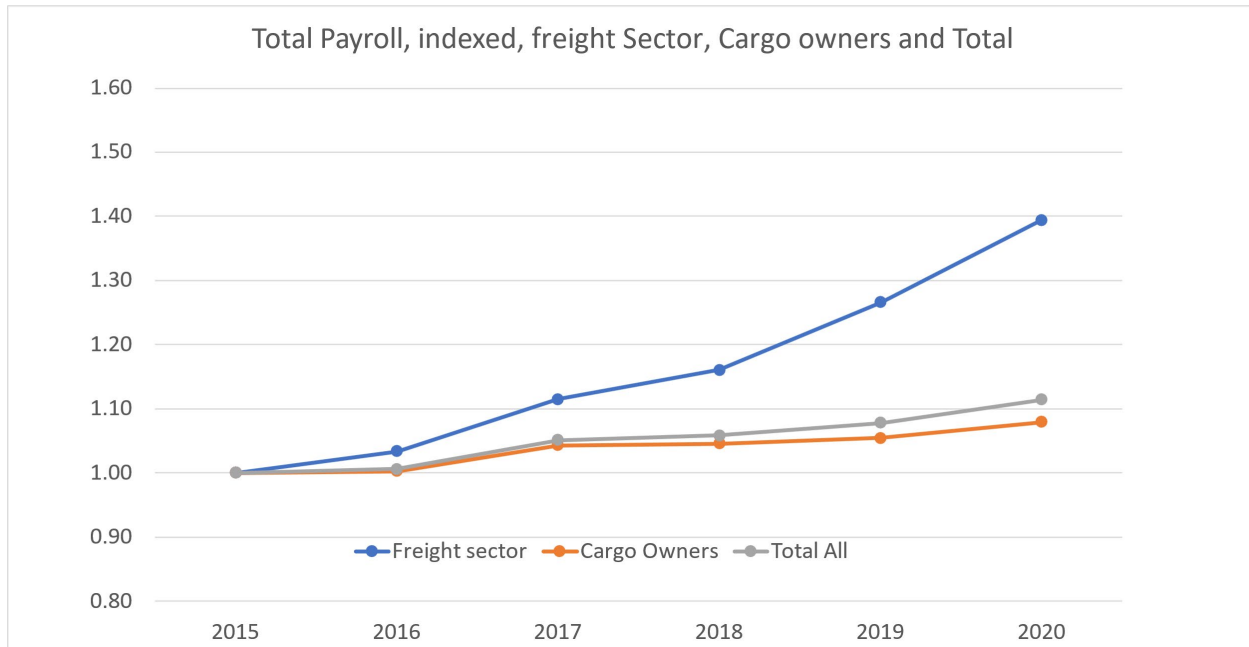
**Figure 7: Number of workers by subsector, indexed, all firms including self-employed**

Payroll

Table 7 gives total payroll in constant 2015 dollars for firms with employees only. Figure 8 gives the same data in index form. We have no way to estimate an equivalent “wage” for the self-employed. Total payroll has increased by about \$11 and \$18 billion respectively for the freight and cargo owner sectors. Because of the difference in size of the sectors, the percent changes are very different: about 40% and less than 5% respectively. There were particularly large increases in the freight sector for 2018-19 and 2019-20.

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

CA	Firms with employees only					
	2015	2016	2017	2018	2019	2020
<b>Freight sector</b>	\$27,449	\$28,374	\$30,610	\$31,854	\$34,748	\$38,270
<b>Cargo owners</b>	\$220,654	\$221,320	\$230,131	\$230,744	\$232,725	\$238,212
<b>Total all</b>	\$248,103	\$249,693	\$260,741	\$262,598	\$267,473	\$276,483

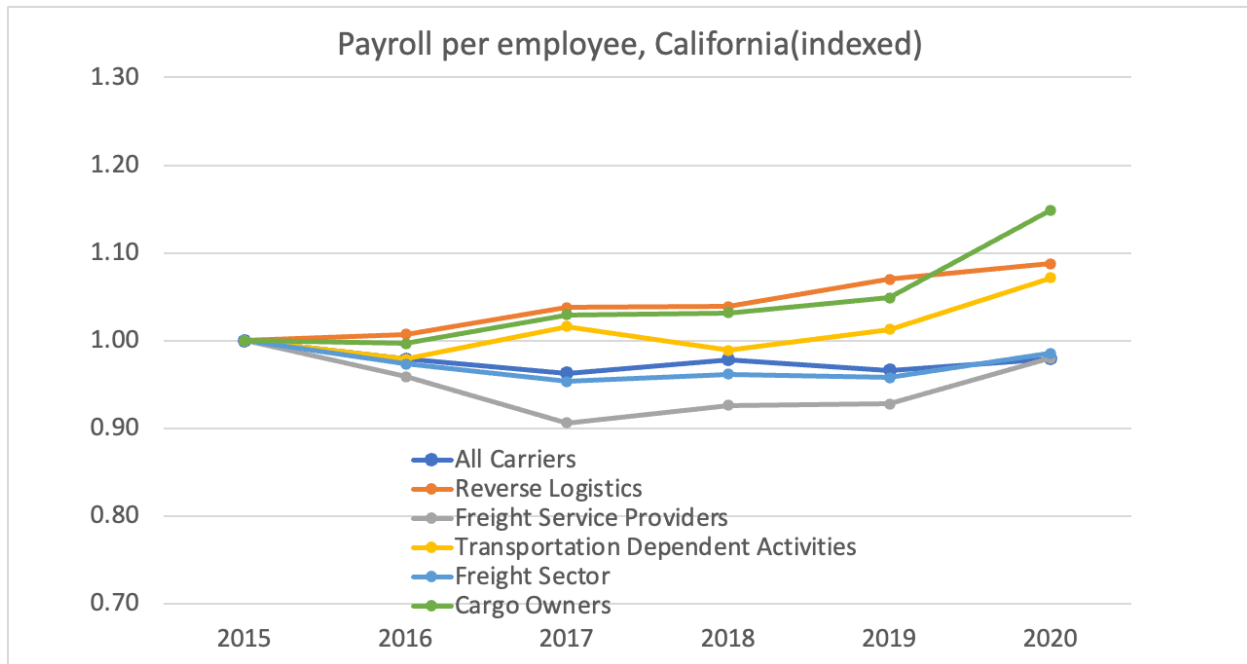


**Figure 8: Total payroll, indexed, freight sector, cargo owners and total**

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. Figure 9 gives the same data in index form. The average annual freight sector payroll per employee is lower than that of cargo owners and the gap is increasing, There is a substantial range within the freight subsectors, for example in 2020 , ranging from about \$50,000 to \$73,000 From 2019 to 2020 payroll per employee increased for all subsectors, but more so for the two smallest subsectors. All carriers and freight service providers have yet to reach parity with 2015 real wages. It appears that the labor market was not yet tight enough to generate significant increases in wages, despite the increase in workers and revenues.

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

CA	Firms with employees only					
	2015	2016	2017	2018	2019	2020
<b>All carriers</b>	\$52,803	\$51,688	\$50,853	\$51,678	\$51,023	\$51,727
<b>Reverse logistics</b>	\$61,046	\$61,495	\$63,356	\$63,416	\$65,312	\$66,391
<b>Freight service providers</b>	\$51,507	\$49,390	\$46,677	\$47,707	\$47,791	\$50,481
<b>Transp dependent activities</b>	\$68,373	\$66,919	\$69,496	\$67,637	\$69,244	\$73,274
<b>Freight sector</b>	\$55,606	\$54,130	\$53,022	\$53,469	\$53,277	\$54,802
<b>Cargo owners</b>	\$59,869	\$59,679	\$61,617	\$61,768	\$62,788	\$68,762
<b>Total all</b>	\$59,365	\$58,991	\$60,467	\$60,627	\$61,365	\$66,420



**Figure 9: Payroll per employee, 2015 constant dollars, indexed**

### 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 6 year constant dollar series of GDP by subsector, and Figure 10 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	2020
All carriers	\$22,719	\$24,234	\$25,054	\$26,185	\$29,627	\$29,212
Reverse logistics	\$5,792	\$5,975	\$6,464	\$7,165	\$7,471	\$7,347
Freight service providers	\$23,742	\$26,276	\$31,249	\$32,712	\$39,506	\$36,639
Transp dependent activities	\$11,424	\$11,490	\$12,252	\$12,578	\$13,077	\$13,452

Freight sector total	\$63,677	\$67,976	\$75,018	\$78,641	\$89,682	\$86,652
Cargo owners	\$571,526	\$560,892	\$580,724	\$590,342	\$601,210	\$614,011
Total all	\$635,203	\$628,868	\$655,742	\$668,983	\$690,892	\$700,662

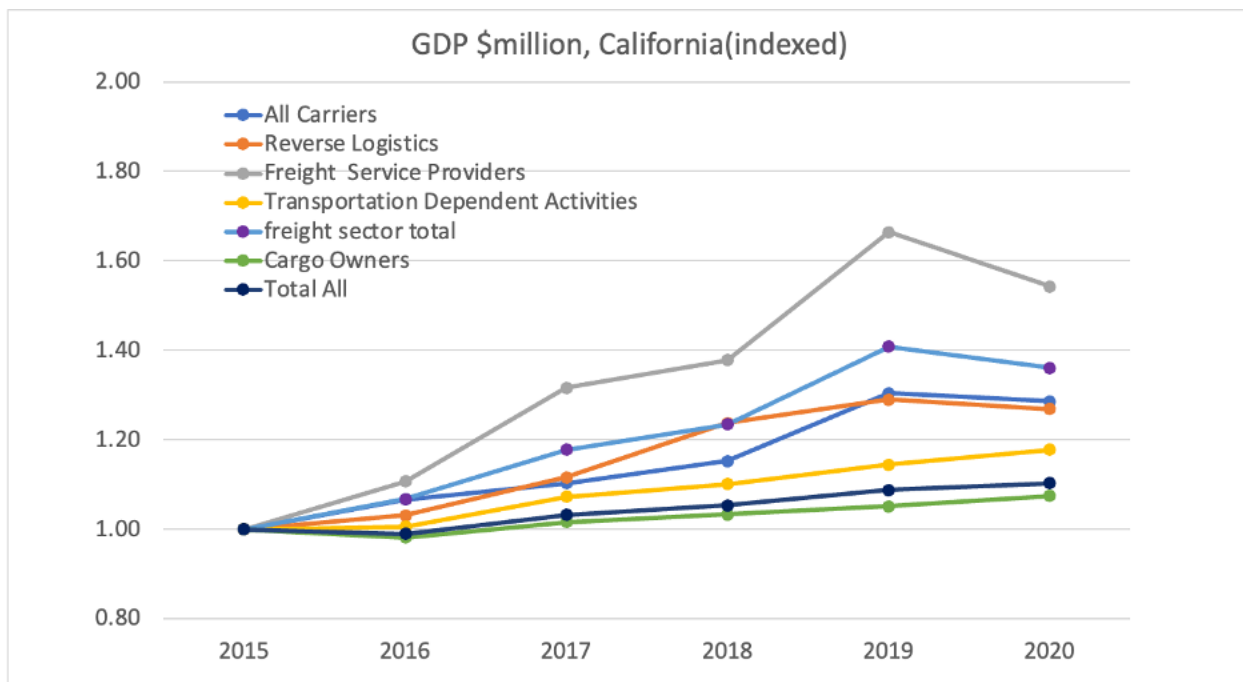


Figure 10: GDP by subsector, indexed

### Summary

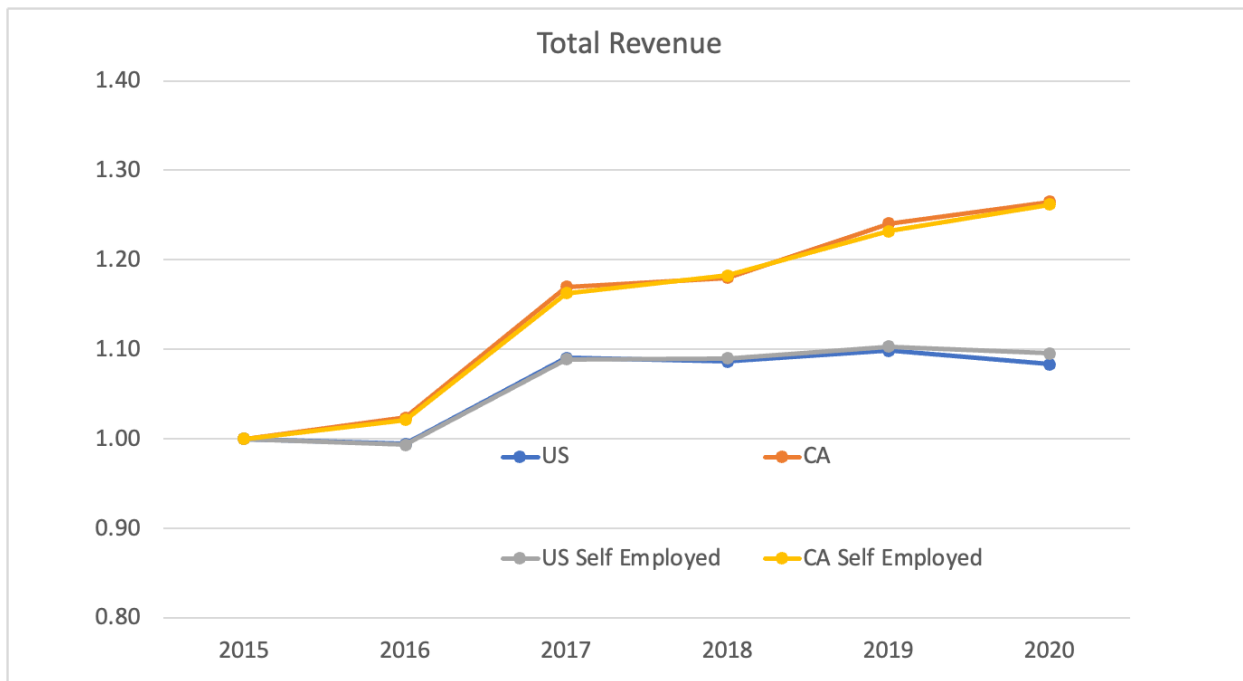
Our metrics show that revenues for the freight sector have increased, while revenues for cargo owners have remained relatively flat. Number of workers, whether measured as employees only or including the self-employed, increased substantially in the freight sector but remained flat for cargo owners. For employees, payroll increases in the freight sector, but not enough to affect wages. If the freight sector wages across the board are flat over the 6 year period. Wages for cargo owners continue to track above the freight sector. 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.

### Comparisons of California Freight Sector with Rest of US

Our metrics continue to 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**.

### Financial Performance

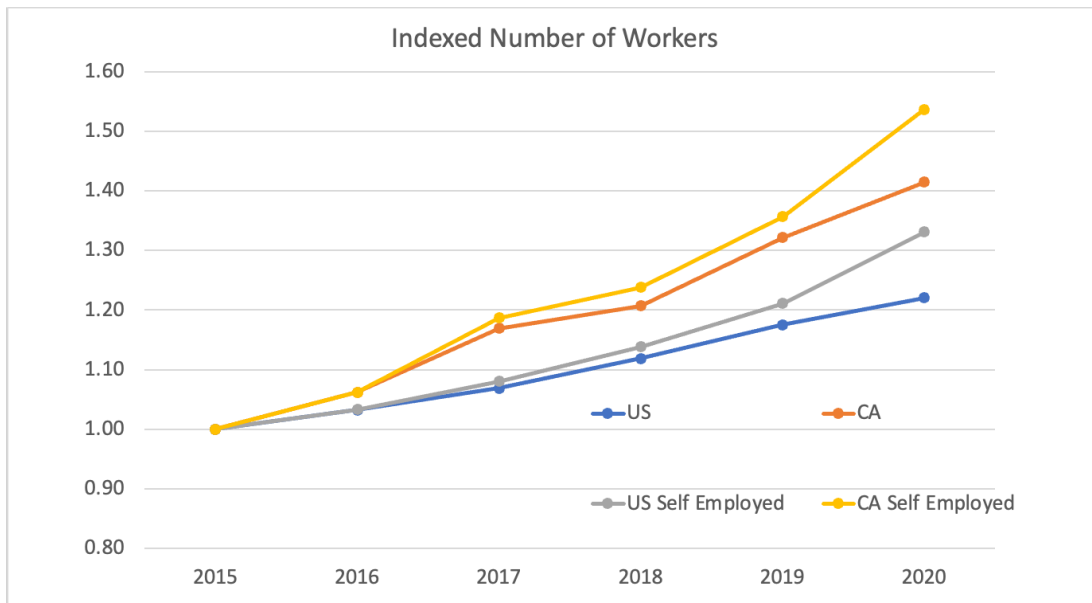
Figure 11 shows the indexed data for freight sector revenues (cargo owners not included), The figure has four lines: orange and yellow are California without and with self-employed respectively; grey and blue are US without and with self-employed respectively. The lines for with and without self-employed overlap and therefore are difficult to see. California’s freight sector revenue continues to outpace the nationm whether including or excluding the self-employed. US freight sector revenues have been flat since 2017, while the California revenue grew about 10 percentage points.



**Figure 11: Total freight sector revenue, excluding cargo owners, indexed, with and without self-employed, CA and US (4 lines)**

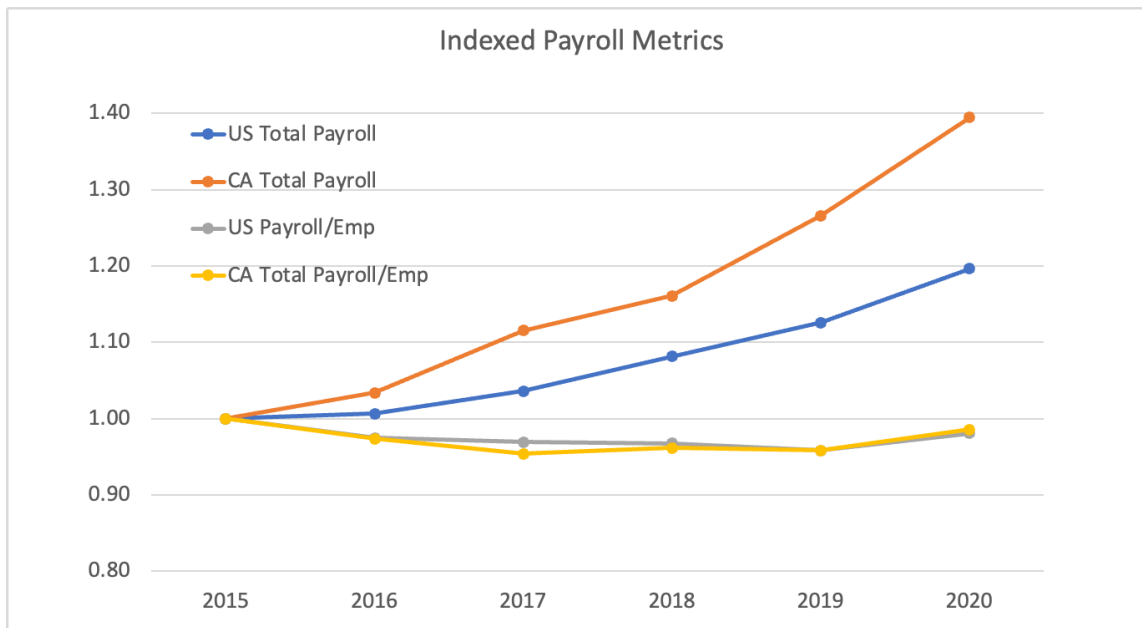
### Workforce Metrics

Figure 12 gives the indexed data for number of workers. The line colors have the same meaning as in Figure 11. The number of workers in the California freight sector has increased more than in the US freight sector. The approximate 10 percentage point difference between California and the US in 2017 increases to an approximate 20 point gap in 2020. Figure 10 also shows that self-employment is increasing faster than employed workers in both California and the US Any structural changes in these industries seem to be national.



**Figure 12: Total freight sector employees, indexed, California and US**

The payroll comparisons are quite interesting. Figure 13 includes both total payroll and payroll per employee. Total payroll has grown approximately in line with employees, with a growing increase in difference between California and US in the later years, consistent with growth in revenues and employees. Despite growth of the sector, however, wages continue to be stagnant for both Californian and the US. Wage stagnation is not unique to California.

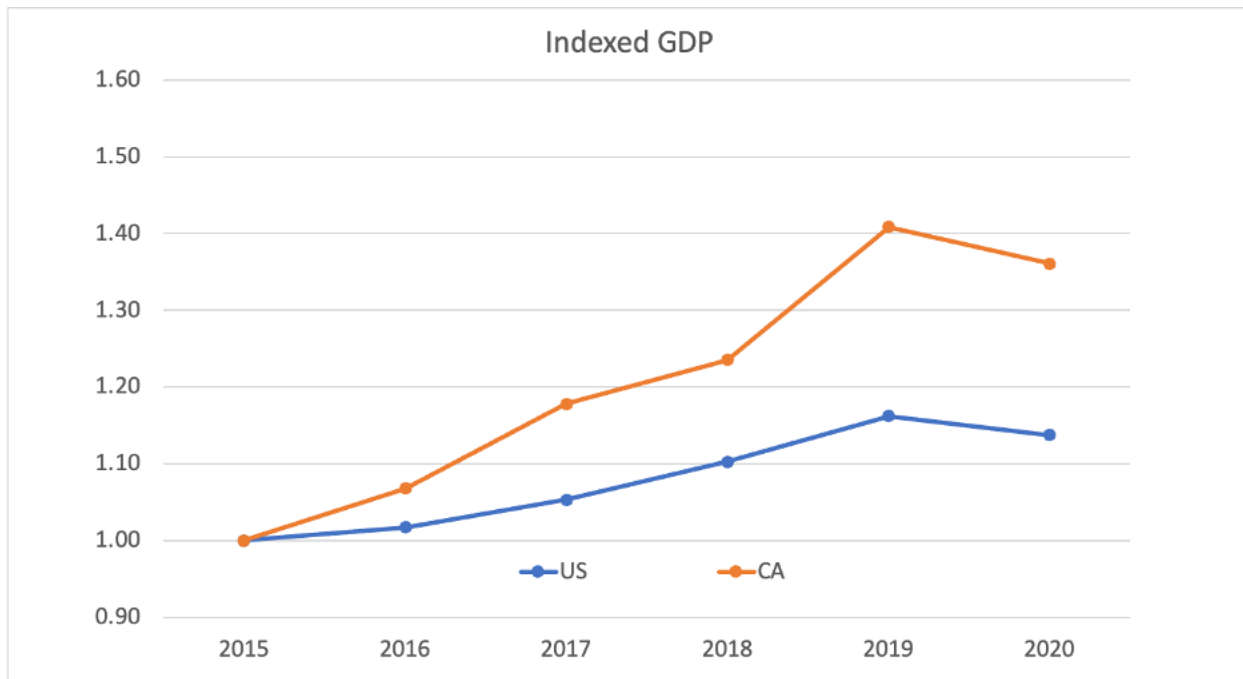


**Figure 13: Total payroll and payroll per employee, freight sectors, indexed, California and US**

### Overall Economic Performance

The last metric is GDP. When measured at the sector level, GDP represents the value added contribution of the sector to the national or state economy. Figure 14 gives the indexed results. After

solid growth through 2019, GDP contribution decreased for both California and the US. This shift likely reflects the short COVID related recession in 2020. A recheck of the data revealed that in 2020 GDP in nominal terms dropped, and GDP for the entire US economy then continues its increase in 2021. Co



**Figure 14: Freight sector GDP, indexed, California and US**

### 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 through 2019 is faster than that of the US. The drop in 2020 is more pronounced for California. Even with the 2019-2020 decline, California remains far ahead of the US. Possible explanations include greater overall economic growth in California (real GDP increased 13% in California compared to about 6.5% for the US economy over the period ), 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.

### 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 subsequent policies and regulations. There are a number of regulations aimed at achieving a zero emission truck fleet by 204 2, 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 rule-making to move all cargo handling equipment to zero emissions. The metrics will be important to track as these regulations take hold.

## 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, and 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.<sup>2</sup> Thus California's 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.

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<sup>2</sup> 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

### 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 15 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. through 2019. Revenues decrease in real terms for total revenues for firms with employees only in California and flatten for the other states from 2019 -2020. Including the self-employed shows a continuous increase in revenues through 2020, with Nevada continuing the experience the most growth, followed by California.

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

State	Year					
	2015	2016	2017	2018	2019	2020
California	\$29,141	\$ 29,691	\$ 33,792	\$ 33,068	\$ 36,702	\$38,876
Arizona	\$4,477	\$ 4,528	\$ 4,853	\$ 4,760	\$ 5,215	\$5,471
Nevada	\$1,611	\$ 1,649	\$ 1,883	\$ 1,836	\$ 2,011	\$2,057
Utah	\$3,255	\$ 3,199	\$ 3,636	\$ 3,520	\$ 3,749	\$3,749

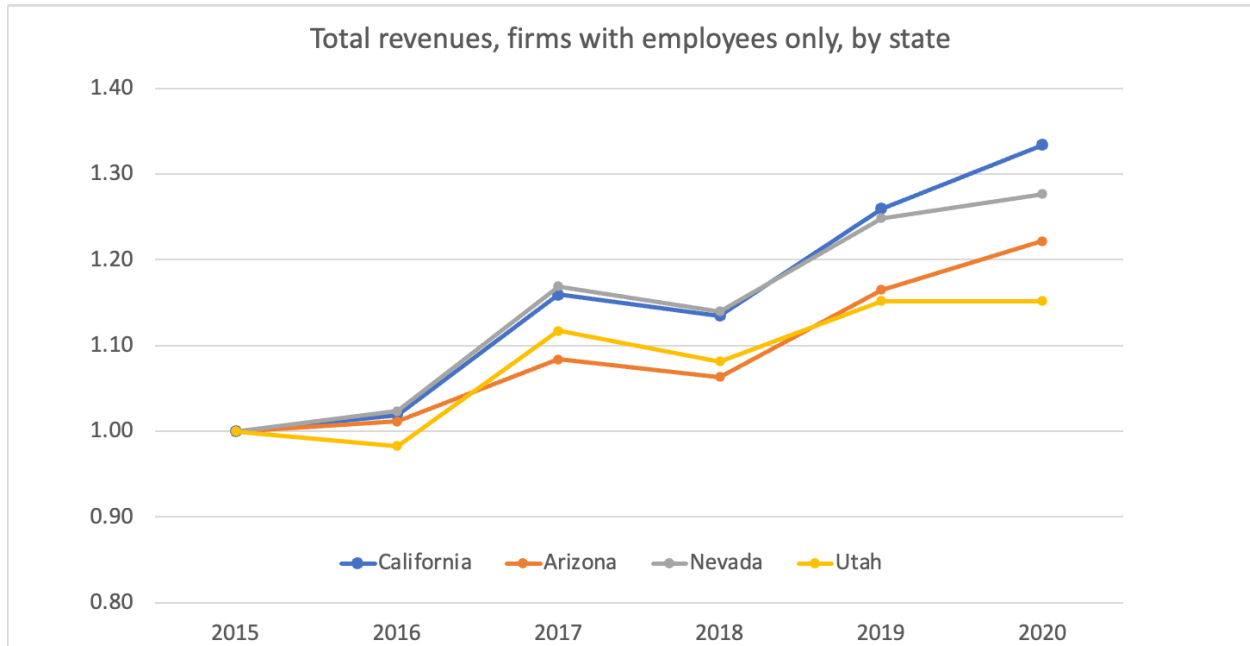
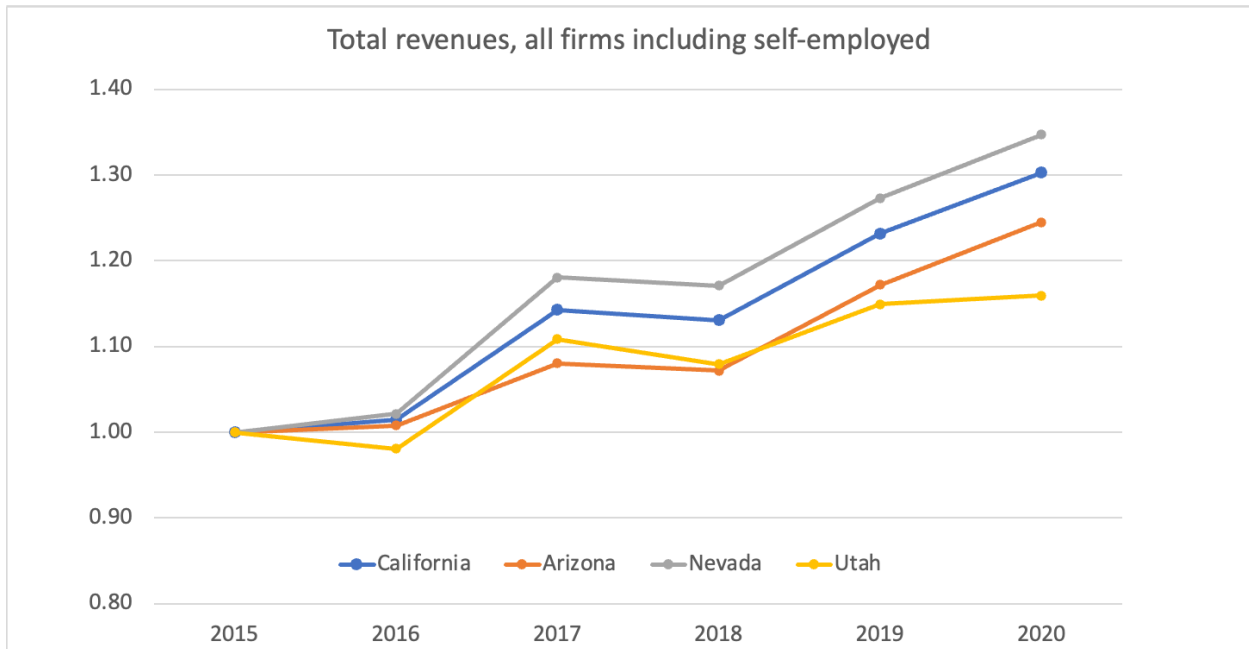


Figure 15: Total revenues, firms with employees only, by state, real 2015 million dollars

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

State	Year					
	2015	2016	2017	2018	2019	2020
California	\$39,089	\$ 39,646	\$ 44,677	\$ 44,205	\$48,157	\$50,928
Arizona	\$5,478	\$ 5,520	\$ 5,918	\$ 5,872	\$6,421	\$6,819
Nevada	\$2,007	\$ 2,050	\$ 2,369	\$ 2,350	\$2,555	\$2,704
Utah	\$3,660	\$ 3,589	\$ 4,057	\$ 3,951	\$4,207	\$4,243



**Figure 16: Indexed revenues by state, including revenues from self-employed**

### Workforce Statistics

Table 13 gives number of employees, firms with employees only, by state and Figure 17 gives the same data in index form. Table 14 and Figure 18 give employee data including the self-employed. As with revenues, there is consistent growth across the 5 year period. The slow down in revenue growth from 2019-2020 is not evident in the employee numbers. Comparing results across states, Nevada has the highest growth rate, Utah has the lowest, and California and Arizona are in the middle. Figure 18 is particularly notable, as it suggests an annual growth rate of about 10% – much faster than the growth of the overall workforce.

The relative ranking of the states is the same with and without the self-employed, but when we include the self-employed, 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. California has the largest proportion of self employed; about 44% of the trucking workforce is self-employed in 2020. The share was about 33% in 2015.

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

State	Year					
	2015	2016	2017	2018	2019	2020
<b>California</b>	250,144	259,693	267,621	277,399	292,077	308,933
<b>Arizona</b>	41,593	42,803	43,707	45,837	48,131	50,959
<b>Nevada</b>	16,335	16,922	17,822	18,643	19,587	20,299
<b>Utah</b>	29,830	30,092	31,154	32,548	33,506	34,234

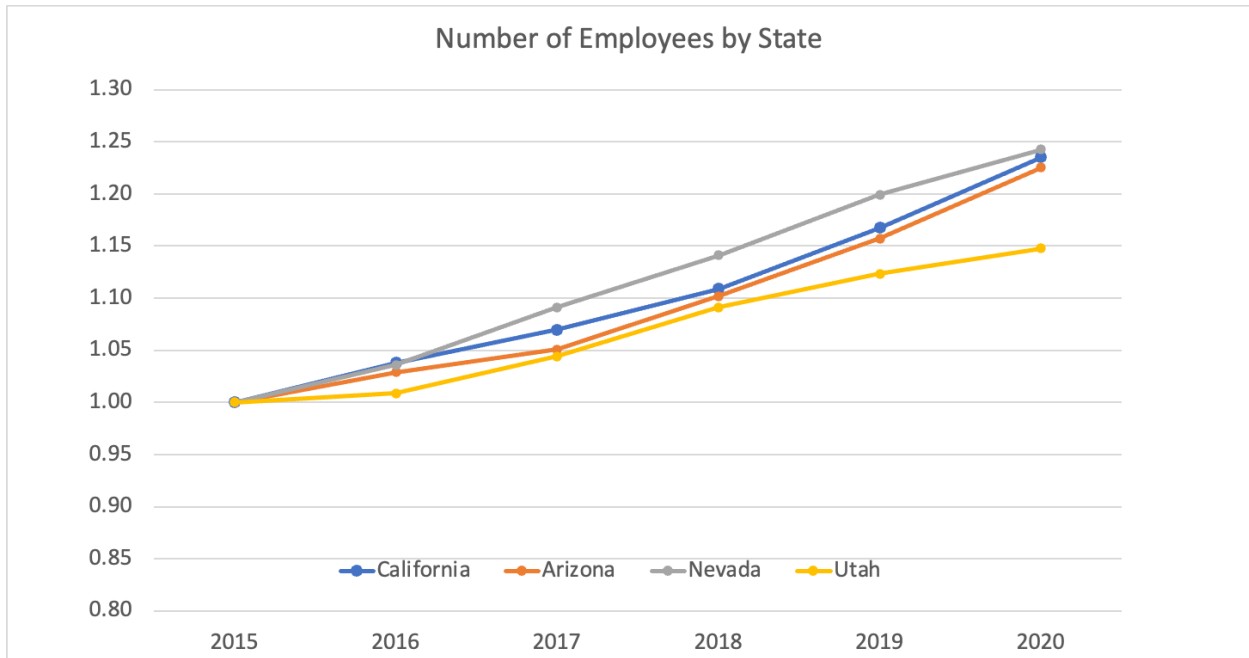
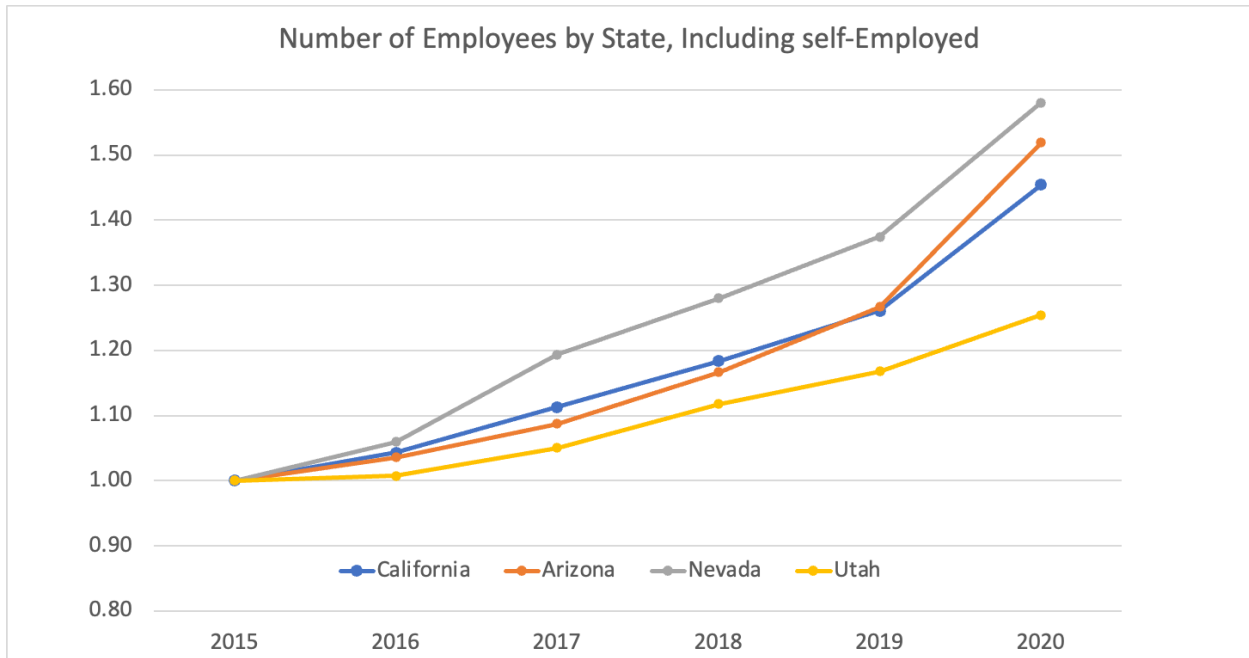


Figure 17: Indexed number of employees by state, firms with employees only

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

State	Year					
	2015	2016	2017	2018	2019	2020
California	376,919	393,171	419,558	446,153	475,144	548,128
Arizona	56,974	59,026	61,944	66,452	72,180	86,530
Nevada	22,065	23,372	26,340	28,248	30,328	34,871
Utah	35,387	35,654	37,166	39,549	41,319	44,378



**Figure 18: Indexed number of employees by state, all firms including self-employed**

Table 15 shows total payroll by state, and Figure 19 presents the same data in index form. Total payroll has increased from 2018, and the increases are in the same rank order as employee growth. The increase is consistent with the growth of the sector. Table 16 gives payroll per employee and Figure 20 presents the indexed data. Table 16 shows that payroll per employee has a tight range across the states with a 2020 high of about \$52,000 for Nevada and a low of about \$47,000 for Utah. Given the higher cost of living in California, wages appear to be relatively low. We note that payroll data does not include the self-employed, and wages only reflect the earnings of employed workers. It is quite possible that the effective wage for the self-employed is lower than these averages.

Figure 20 shows that wages in real terms are recovering from the losses of previous years. Wages in Utah and Nevada have increased slightly past 2015 levels; wages in California and Arizona have increased but have not yet reached 2015 levels. Driver shortages began being reported in 2019; the growth in wages is consistent with growing tightness in the labor market.

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

State	Year					
	2015	2016	2017	2018	2019	2020
<b>California</b>	\$12,936	\$13,104	\$13,388	\$13,241	\$14,593	\$15,676
<b>Arizona</b>	\$2,037	\$2,053	\$2,126	\$2,116	\$2,263	\$2,447
<b>Nevada</b>	\$844	\$838	\$884	\$889	\$985	\$1,059
<b>Utah</b>	\$1,380	\$1,362	\$1,426	\$1,421	\$1,537	\$1,619

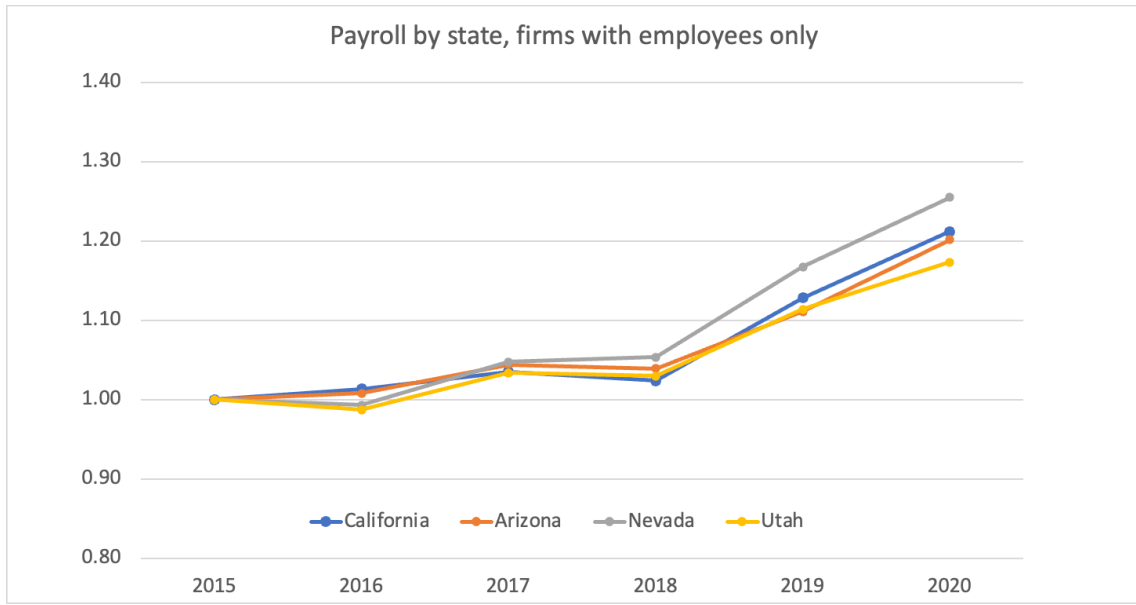


Figure 19: Total payroll by state

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

State	Year					
	2015	2016	2017	2018	2019	2020
California	\$51,715	\$50,460	\$50,026	\$47,731	\$49,962	\$50,742
Arizona	\$48,978	\$47,974	\$48,644	\$46,171	\$47,027	\$48,010
Nevada	\$51,649	\$49,512	\$49,610	\$47,695	\$50,305	\$52,152
Utah	\$46,268	\$45,272	\$45,772	\$43,666	\$45,864	\$47,298

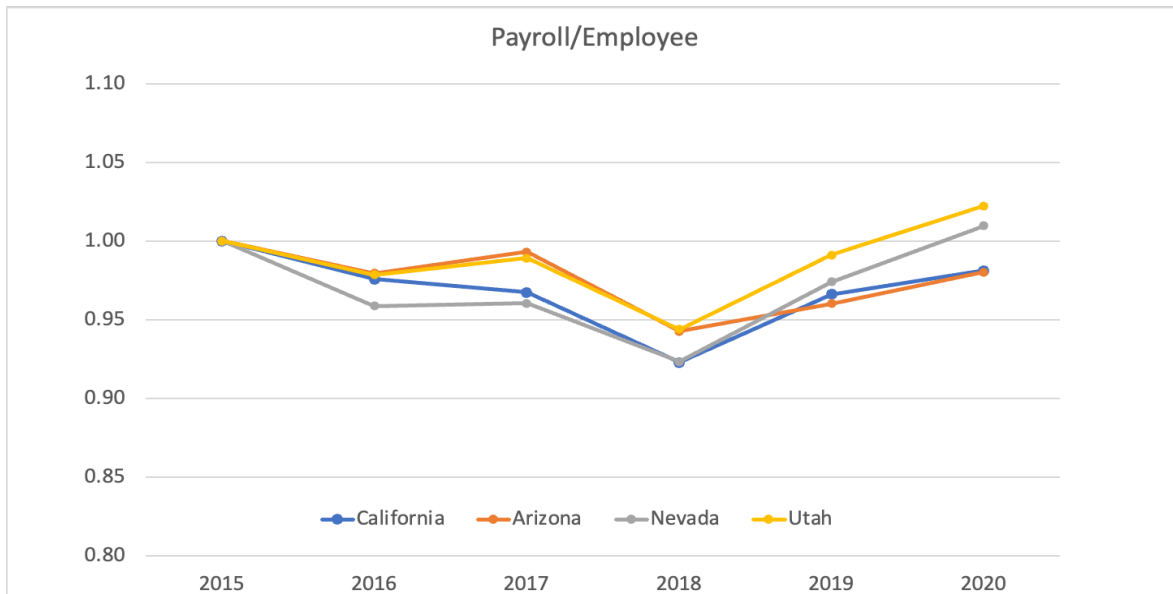


Figure 20: Indexed payroll per employee by state

Another way to consider wages is relative to the average across all industries. We used the QCEW data to generate estimates of average payroll per employee for all industry sectors in 2015 dollars. We then calculate the ratio of trucking sector wages to all wages for each year to compare wages in the trucking sector to all wages, and to track the relative position of truck wages over time. Results are shown in Table 18 and Figure 21. First, in all but California, truck wages are at or above all industry wages. California starts out the series at about 84%. Nevada starts out the highest at about 113%. Second, in every state truck wages relative to all wages are declining over time, meaning that wages in other industry sectors are increasing faster. Nevada trucking wages remain just above parity in 2020; all other states are below by 2020 or earlier. California stands out both for the difference in average wages and the decline over time. The ratio decreased 17% for California over the period, compared to 12% for Arizona and 10% for Nevada and Utah. 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.

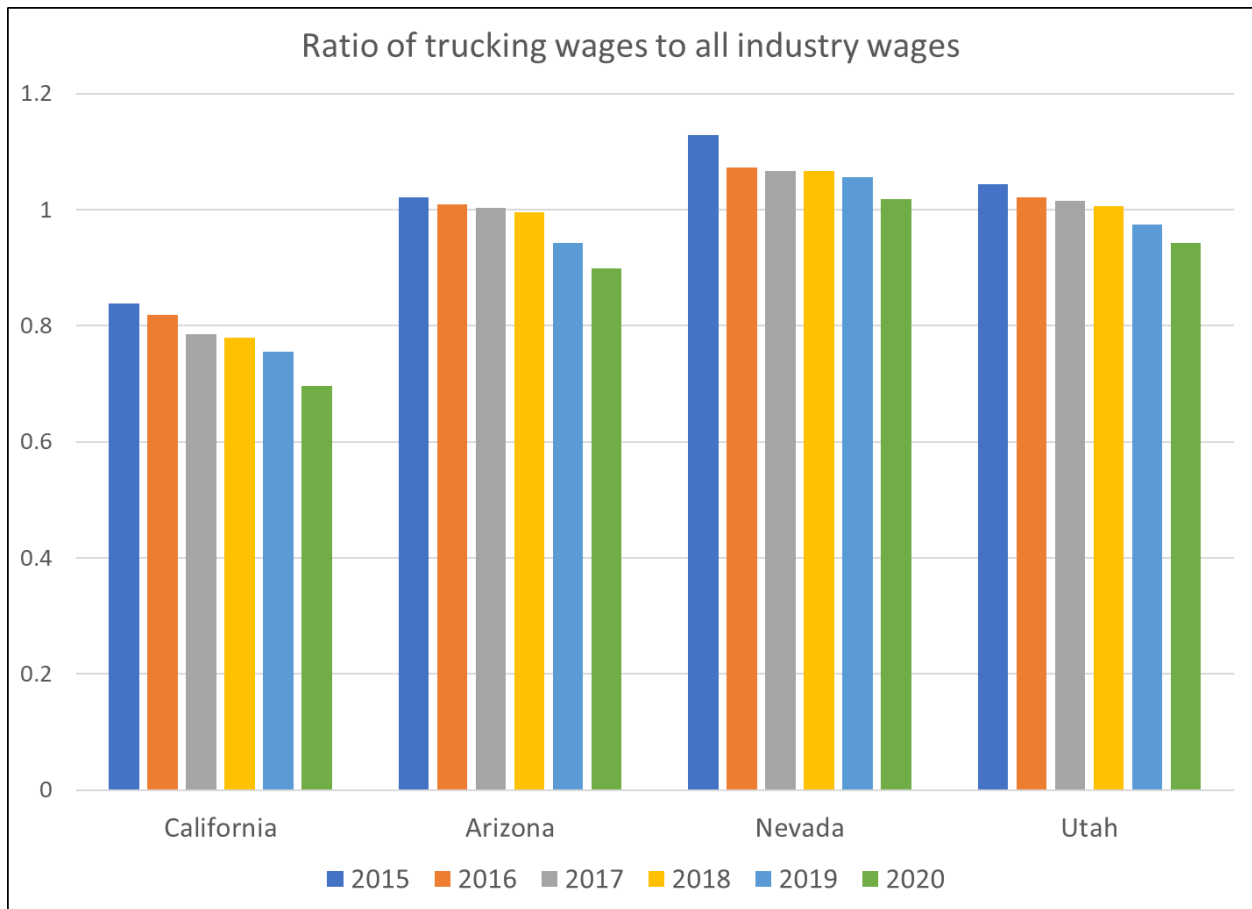


Figure 21: Ratio of average payroll/worker by year, state



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

	Trucking sector	All employees	Ratio
<b>2015</b>			
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
<b>2016</b>			
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
<b>2017</b>			
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
<b>2018</b>			
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
<b>2019</b>			
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
<b>2020</b>			
California	\$55,505	\$79,729	0.696
Arizona	\$52,516	\$58,426	0.899
Nevada	\$57,047	\$55,996	1.019
Utah	\$51,738	\$54,890	0.943

### Overall Economic Performance

Table 17 and Figure 22 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	2020
California	\$25,522	\$ 26,717	\$ 27,576	\$27,085	\$31,960	\$ 31,298
Arizona	\$4,374	\$ 4,415	\$ 4,538	\$ 4,160	\$ 4,563	\$ 4,192
Nevada	\$1,710	\$ 1,729	\$ 1,802	\$ 1,709	\$ 1,873	\$ 1,535
Utah	\$2,850	\$ 2,862	\$ 3,008	\$ 2,920	\$ 3,206	\$ 3,158

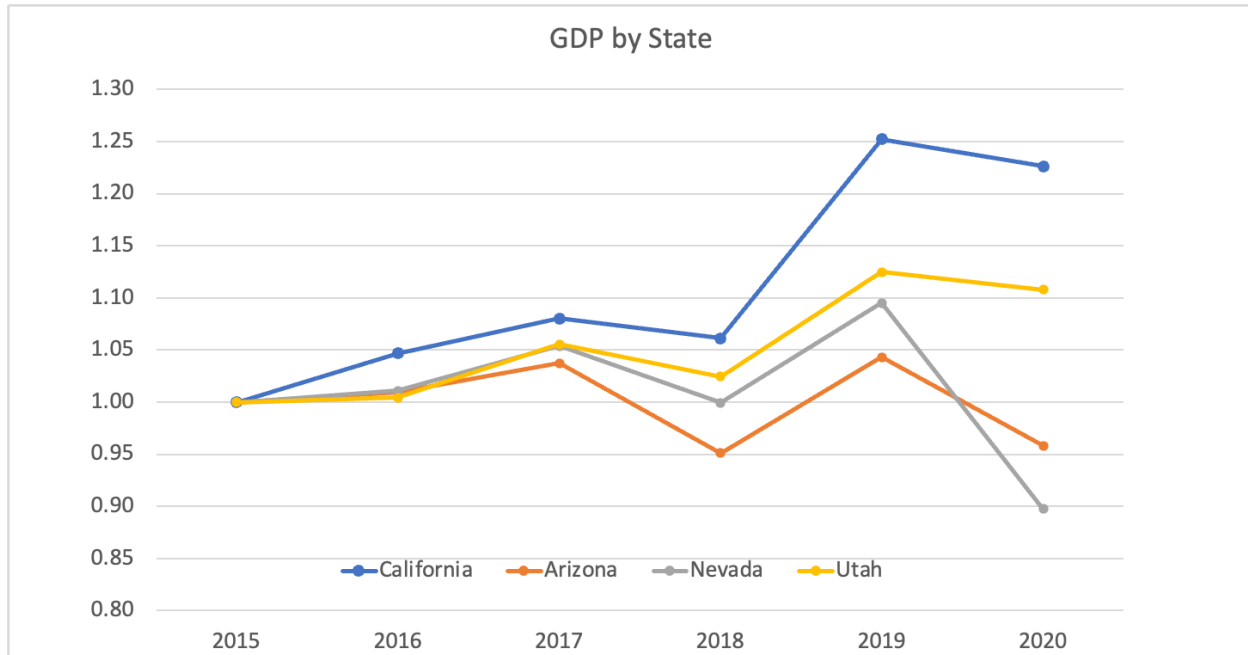


Figure 22: Indexed GDP by state

### Conclusions on Trucking Comparisons revise after GDP numbers are checked

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 benefited 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.

## 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.<sup>3</sup> The data include all ports of entry within each state, which includes ports of any size.

## 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 18 gives total vessel value by state in constant 2015 dollars, and Table 19 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. Vessel value for all states declined in 2020, likely due to the beginnings of COVID effects. Figure 23 gives the same data in index form. Over the six year period vessel value decreased for all states. The greatest loss is for New York/New Jersey (about 21 percentage points) followed by California (about 12 percentage points).

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

State	Year					
	2015	2016	2017	2018	2019	2020
<b>California</b>	\$ 268,829	\$ 265,695	\$ 277,201	\$ 282,136	\$ 259,673	\$234,225
<b>Georgia</b>	\$ 82,917	\$ 73,870	\$ 75,670	\$ 78,430	\$ 80,678	\$76,554
<b>Virginia</b>	\$ 27,351	\$ 27,202	\$ 28,489	\$ 27,518	\$ 29,166	\$26,486
<b>NY+NJ</b>	\$ 149,496	\$ 131,491	\$ 132,213	\$ 138,051	\$ 129,876	\$116,871
<b>Washington</b>	\$ 46,892	\$ 44,361	\$ 45,905	\$ 50,330	\$ 46,994	\$43,698

<sup>3</sup> Available at

<https://usatrade.census.gov/data/Perspective60/View/dispsview.aspx?ReportId=139520>.

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

State	Year					
	2015	2016	2017	2018	2019	2020
California	17%	18%	18%	17%	16%	17%
Georgia	5%	5%	5%	5%	5%	6%
Virginia	2%	2%	2%	2%	2%	2%
NY+NJ	10%	9%	9%	8%	8%	8%
Washington	3%	3%	3%	3%	3%	3%

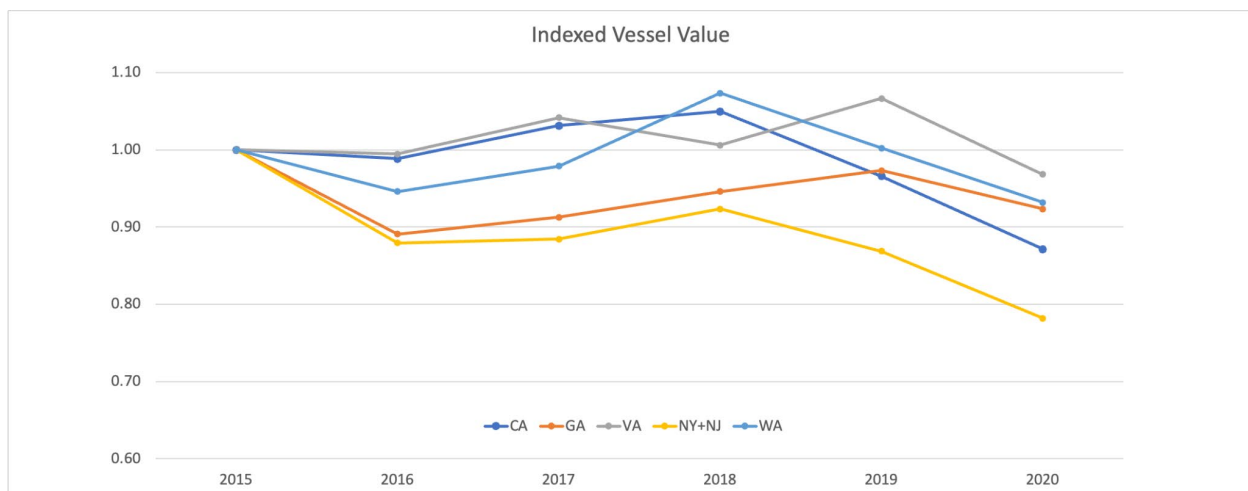


Figure 23: Indexed vessel value by state and year, 2015 dollars

We provide the same comparisons for containerized freight only. Table 20 gives containerized vessel value in constant 2015 dollars by state and Figure 24 presents the same data in index form. As with total vessel value, all states experience a decrease from 2019 to 2020. California has the smallest decline; Virginia and Washington have the steepest declines. These differences result in only small changes in market share as shown in Table 21.

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

State	Year					
	2015	2016	2017	2018	2019	2020
California	\$ 187,395	\$ 191,364	\$ 197,382	\$ 207,183	\$ 194,186	\$191,888
Georgia	\$ 57,231	\$ 52,582	\$ 54,716	\$ 60,282	\$ 63,086	\$61,327
Virginia	\$ 20,867	\$ 21,043	\$ 22,369	\$ 23,535	\$ 23,804	\$22,037
NY+NJ	\$ 103,937	\$ 98,170	\$ 97,947	\$ 104,365	\$ 100,063	\$96,116
Washington	\$ 26,112	\$ 24,647	\$ 26,158	\$ 29,414	\$ 27,333	\$25,562

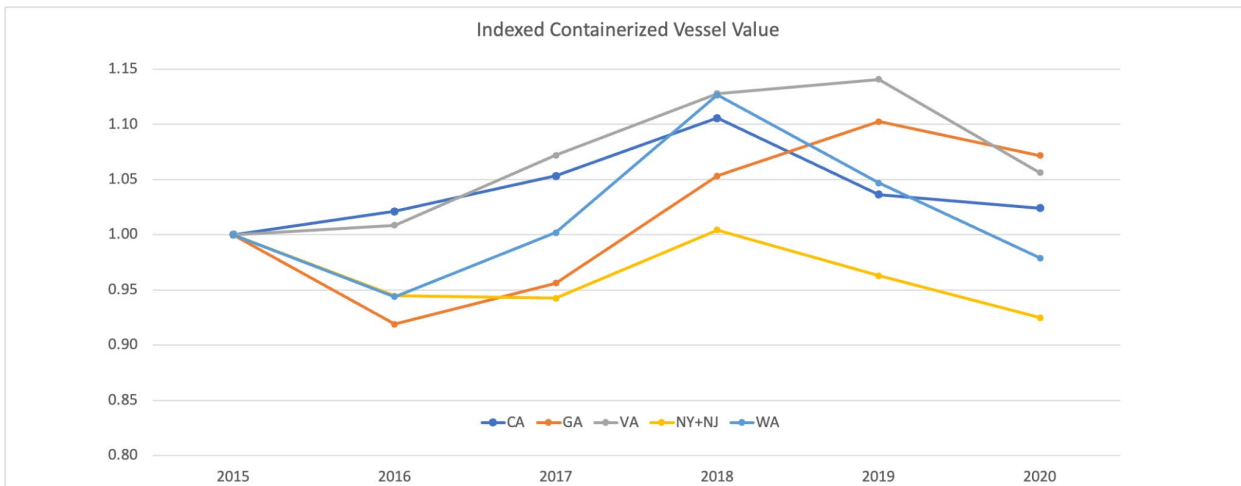


Figure 24: Indexes vessel value, containerized imports and exports only, by state and year

Table 22: Market share by vessel value, containerized imports and exports only

State	Year					
	2015	2016	2017	2018	2019	2020
California	19%	20%	20%	20%	19%	20%
Georgia	6%	6%	6%	6%	6%	7%
Virginia	2%	2%	2%	2%	2%	2%
NY+NJ	11%	10%	10%	10%	10%	10%
Washington	3%	3%	3%	3%	3%	3%

### Conclusions on port metrics

The USA Trade data on vessel imports and exports suggests that all ports suffered a decline in 2020, likely due to the beginnings of the COVID disruptions in international trade. Georgia’s growth was stalled, but it suffered less than New York/New Jersey, Virginia and Washington. Consequently, its market share slightly increased. California market share also increased slightly for the same reason. Whereas all ports fell below 2015 levels for total vessel value, Georgia, Virginia and California stay above parity for container value. Container traffic has remained stronger than other types of traffic, advantaging those ports with a greater share of container traffic. Market share remains quite stable, with California retaining its market share throughout the period.

## Conclusions

This is the second 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 comparison groups, 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 track progress in meeting the economic competitiveness goal.

The first annual report included two changes in the metrics from our prior work. First, we began using constant dollars for all metrics to better compare trends across a longer time series. . Second, we 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. No further changes have been made in this second annual report.

### Summary of findings

For California our metrics continue to show that revenues for the freight sector have increased, while revenues for cargo owners have declined in real terms since 2017. 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.

The fastest growth took place in freight service providers, consistent with increased local deliveries from e-commerce. The number of workers has grown 80% since 2015 in this sector. The second highest growth is observed in all carriers at about 26% for employees only. When including the self-employed, growth is close to 70%. The dramatic increase in self employed is shown in shares: by 2020 the self-employed share is 45% for all carriers.

Total payroll continues to grow with employment, but payroll/employee stays flat, except for the small transportation dependent subsector and cargo owners. All subsectors gain some ground 2019-2020, but wage increases are not enough to reach 2015 parity for all carriers and freight service providers. The 2020 numbers suggest that labor scarcity is not yet strong enough to significantly push up wages. We note also that as the self-employed share increases, our wage estimates become less representative of the freight labor force. An increasing share of self-employed may reflect more "gig" workers being paid per job or per delivery, which would push down the average wage.

GDP continued to increase for all subsectors until 2019. There is a decline in GDP for the freight sector, perhaps reflecting the COVID related disruptions in the freight sector. The GDP contribution of freight subsectors varied from small increase to moderate decreases. The greatest decrease is observed for freight service provides, which seems inconsistent with revenue and employment numbers for the subsector. Cargo owner GDP continued its gradual rise. The picture overall is of a growing freight sector with respect to revenues, workers, and GDP, but with little effect on wages.

Growth in California freight sector employment, revenues, and GDP through 2019 is faster than that of the US. The drop in 2020 is more pronounced for California. Even with the 2019-2020 decline, California remains far ahead of the US. As noted in the previous metrics report, possible explanations for California's more rapid growth include greater overall economic growth in California (real GDP increased 13% in California compared to about 6.5% for the US economy over the period, 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.

The trucking sector metrics show that total revenues and employment continue to increase in all comparison states. California is generally in the middle of the group. Self-employment is growing faster than wage employment in all states. Payroll per employee is recovering from its 2018 low, but only in Utah and Nevada have wages surpassed 2015 levels. Average trucking wage continues to grow slower than the average wage for all workers, and California continues to show the greatest decline. In 2020, the average trucking wage is 70% of the state average, compared to 84% in 2015. The decline is of particular concern given the much higher cost of living in California compared to the other states. It is unclear when or how the labor scarcity in trucking will result in better compensation.

After consistent growth in previous years, all ports suffered a decline in 2020, likely due to the beginnings of the COVID disruptions in international trade. Georgia's growth was stalled, but it suffered less than New York/New Jersey, Virginia and Washington. Consequently, its market share slightly increased. California market share also increased slightly for the same reason. Container traffic has remained stronger than other types of traffic, advantaging those ports with a greater share of container traffic. Market share over the six year period remains stable.

## Observations and recommendations

The economic competitiveness metrics provide a strong base for monitoring California's freight sector as the energy transition continues. At this time, the data gives little indication that freight sector competitiveness is declining. We cannot say however that the changes taking place in the sector have had no impact. First, we have no counterfactual; we cannot observe what the freight sector's performance might have been without California's GHG reduction policies. Second, policies take years to be fully implemented and industries take years to adjust. Continuing the competitiveness monitoring will help to reveal longer term impacts.

One concern stands out in this report: the flatness of wages. Despite significant employment and revenue growth, compensation to workers as measured by payroll per employee remains flat. California is not unique; flat wages are observed for the US as well. The likely interpretation is a low margin industry, as revenues are not increasing faster than workers. In the trucking sector, however, California is unique; average wage is lower relative to all wages, and ratio of average trucking wage to average of all wages is declining. California also has the highest share of self-employed workers, and the payroll data does not capture the self-employed. The trucking industry is often described as a price taking industry; because of intense competition it is difficult to pass increased costs forward. In such cases wages are depressed as the costs get absorbed by the trucking firm. The metrics results merit more research to understand the dynamics of the sector.

Finally, to address both the lagged data problem and the limits to any set of metrics based on aggregates, we suggest the addition of case studies. One type of case study would address the long term impacts of specific investments. One example is the economic impact study of zero emissions cargo handling equipment that generated estimates of economic costs and benefits over the lifetime of the program (Wei and Giuliano, 2021). Another type of case study would 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

Giuliano, G. (2017) Framework for Developing Economic Competitiveness Measures for the California Sustainable Freight Action Plan. Research Report, National Center for Sustainable Transportation. Available at [https://www.metrans.org/assets/research/NCST-TO-036\\_Final-Report\\_Giuliano.pdf](https://www.metrans.org/assets/research/NCST-TO-036_Final-Report_Giuliano.pdf).

Giuliano, G and M. Hassan, 2018 Economic Competitiveness, Definitions and Metrics Task Order 020, Final Report, METTRANS Transportation Center. Available at <https://www.metrans.org/assets/research/17-15%20Final%20Report.pdf>.

Giuliano, G and M. Hassan, 2019 Implementation of Action 6 of CSFAP Phase 2a Tracking Economic Competitiveness, Report PSR-18-SP52, Pacific Southwest Region University Transportation Center. Available at [https://www.metrans.org/assets/research/psr-18-sp52\\_giuliano\\_final-report.pdf](https://www.metrans.org/assets/research/psr-18-sp52_giuliano_final-report.pdf).

Giuliano, Wei and Vindrola, 2022 Implementation of Action 6 of CSFAP Phase 3 Tracking Economic Competitiveness Part 1: 2021 Economic Competitiveness Metrics Annual Report. Report PSR – 18-SP90. Pacific Southwest Region University Transportation Center. Available at [https://www.metrans.org/assets/research/psr-18-sp90\\_part-1\\_giuliano\\_final-report.pdf](https://www.metrans.org/assets/research/psr-18-sp90_part-1_giuliano_final-report.pdf).

Giuliano, G., S. Yong, E. Vindrola (2021) Implementation of Action 6 of the California Sustainable Freight Action Plan (CSFAP) Phase 3: Tracking Economic Competitiveness Final Report **NUMBER** Part 2: Economic competitiveness metrics data description and computations. Final Report. Pacific Southwest Region University Transportation Center. Available at **XXXXX**

Wei, D. and G. Giuliano (2021) Implementation of Action 6 of the California Sustainable Freight Action Plan (CSFAP) Phase 3: Tracking Economic Competitiveness Final Report Part 3: Economic impacts of electrification of cargo handling equipment at POLA/POLB. Report **NUMBER**, Pacific Southwest Region University Transportation Center, Available at **XXXXX**

## 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 2020.

### 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](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 23: 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 24: 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 25: 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
<b>Freight sector</b>	1.14835E+12	1.22762E+12	5562895	6840358	3.034E+11	54539.43729	770229.8285
<b>total</b>	1.96421E+13	1.98645E+13	40053088	44195656	2.03336E+12	50766.42679	5079660.507

Table 26: 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
<b>total</b>	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
<b>Freight sector</b>	1.08544E+12	1.16706E+12	5821230	7209752	2.99752E+11	51492.87062	762994.1304

Table 27: 2019 US metrics divided by subsector

United States of America 2019							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Emp	Emp, Including The self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
<b>total</b>	1.89424E+13	1.9171E+13	40725689	45153203	2.1E+12	51494.13	5293986.53
ac	3.6866E+11	4.3876E+11	2603867	3769681	1.34E+11	51635.22	246548.63
r	96670025246	9.826E+10	473235	492534	2.71E+10	57208.05	56379.17

s	1.7298E+11	1.7921E+11	1886197	2005179	8.53E+10	45202.20	284094.87
t	5.1514E+11	5.2373E+11	1153911	1402033	8.2E+10	71054.72	253858.84
co	1.7789E+13	1.79314E+13	34608479	37483776	1.77E+12	51096.12	4453105.01
<b>Freight sector</b>	1.15341E+12	1.2399E+12	6117210	7669427	3.29E+11	53745.94	840881.52

Table 28: 2020 US metrics divided by subsector

United States of America 2020							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Emp	Emp, Including The self-employed	Payroll real\$ Not done**	Payroll real\$ / emp	GDP real\$ million
<b>total</b>	1.7810E+13	1.8048E+13	39146478	44264318	2.1E+12	53678.15	5220125.69
<b>ac</b>	3.73E+11	4.51E+11	2712235	4414467	1.41E+11	52105.87	257056.76
<b>r</b>	9.425E+10	9.591E+10	467906	487980	2.71E+10	58159.22	57161.47
<b>s</b>	1.6951E+11	1.7564E+11	2057962	2179108	9.39E+10	45630.11	279675.94
<b>t</b>	5.00E+11	5.0823E+11	1112935	1348214	8.2E+10	73833.42	242273.18
<b>co</b>	1.6672E+13	1.6817E+13	32795440	35834549	1.77E+12	53565.29	4383958.34
<b>Freight sector</b>	1.15341E+12	1.231E+12	6351038	8429769	3.44E+11	54260.94	836167.35

## 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 29: 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
<b>total</b>	<b>29141255294</b>	<b>39088513130</b>	<b>250144</b>	<b>376919</b>	<b>12936277679</b>	<b>51715.32269</b>	<b>25521.94522</b>

Table 30: 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
<b>total</b>	<b>29691429839</b>	<b>39646125513</b>	<b>259693</b>	<b>393171</b>	<b>13104046060</b>	<b>50459.75848</b>	<b>26717.1261</b>

Table 31: 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
<b>total</b>	<b>33792228841</b>	<b>44676701538</b>	<b>267621</b>	<b>419558</b>	<b>13388044600</b>	<b>50026.13621</b>	<b>27576.00396</b>

Table 32: 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
<b>total</b>	33067566194	44205247020	277399	446153	13240581842	47731.18087	27085.23139
<b>ac</b>	26550285349	36744057404	228924	370707	11031546424	48188.68456	22650.14674
<b>t</b>	6517280845	7461189617	48475	75446	2209035419	45570.61204	4435.084649

Table 33: Trucking metrics divided by subsector for California in 2019

California 2019							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
<b>total</b>	36716206811	48175513925	292077	475144	14598632655	49962.47	31959.90
<b>ac</b>	29734666962	40223895844	241576	398679	12138911331	50229.06	26952.42
<b>t</b>	6981539848	7951618081	50501	76465	2459721323	48687.23	5007.48

Table 34: Trucking metrics divided by subsector for California in 2020

California 2019							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
<b>total</b>	38943956559	51017751972	308933	548128	1570327579	50741.70	31297.90
<b>ac</b>	32595634425	43798166658	263324	479219	13360193993	50647.89	26260.01
<b>t</b>	6348322134	7219585314	45609	68909	2343081186	51283.28	5037.89

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
<b>ac</b>	3493144119	4318349064	33653	44036	1685393892	50081.5348	3703.249638
<b>t</b>	983980458.1	1160136355	7940	12938	351764680	44302.8564	670.3125813
<b>total</b>	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
<b>total</b>	<b>4528130147</b>	<b>5520013774</b>	<b>42803</b>	<b>59026</b>	<b>2053436513</b>	<b>47974.12596</b>	<b>4414.863977</b>

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
<b>total</b>	<b>4853283745</b>	<b>5917940376</b>	<b>43707</b>	<b>61944</b>	<b>2126089601</b>	<b>48644.14396</b>	<b>4537.750222</b>

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
<b>total</b>	<b>4759902630</b>	<b>5871849621</b>	<b>45837</b>	<b>66452</b>	<b>2116349678</b>	<b>46171.20836</b>	<b>4160.341211</b>
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\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
<b>total</b>	<b>5627025978</b>	<b>6423128634</b>	<b>48131</b>	<b>72180</b>	<b>2264349936</b>	<b>47045.56</b>	<b>4565.08</b>
ac	4113736067	5158711250	38608	58112	1833543339	47491.28	4,008.88
t	1103022387	1264417384	9523	14068	430806597	45238.53	848.49



Table 40: Trucking metrics divided by subsector for Arizona in 2020

Arizona 2020							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
<b>total</b>	5480190243	6831575006	50959	86530	2450828676	48094.13	4199.13
<b>ac</b>	4418551123	5623587968	41626	73022	2012714335	48352.33	3334.95
<b>t</b>	1061639120	1207987039	9333	13508	438114341	46942.50	864.19

Table 41: 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
<b>ac</b>	1243652048	1587351486	12824	17095	672438268	52435.9223	1408.879945
<b>t</b>	367505076.6	419379073.8	3511	4970	171250199	48775.3344	300.7890842
<b>total</b>	1611157125	2006730560	16335	22065	843688467	51649.1256	1709.66903

Table 42: 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
<b>ac</b>	1291954370	1641740150	13450	18428	678979716.5	50481.76327	1443.735092
<b>t</b>	356780966.5	408592110.9	3472	4944	158869912.6	45757.46334	285.641637
<b>total</b>	1648735337	2050332262	16922	23372	837849629.2	49512.44702	1729.37673

Table 43: 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
<b>ac</b>	1491078859	1903688713	13842	20337	703453431.3	50820.21607	1476.323683
<b>t</b>	392100108.5	465022586	3980	6003	180698626	45401.66486	325.7587642
<b>total</b>	1883178968	2368711299	17822	26340	884152057.3	49610.14798	1802.082448

Table 44: 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
<b>total</b>	1835583317	2349914733	18643	28248	889186707.6	47695.47324	1709.009503
<b>ac</b>	1461329342	1911995879	14456	22322	709061850	49049.65758	1382.8757
<b>t</b>	374253975.2	437918853.8	4187	5926	180124857.5	43020.02807	326.1338029

Table 45: Trucking metrics divided by subsector for Nevada in 2019

Nevada 2019							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
<b>total</b>	2011415246	2555598568	19587	30328	985712018	50,324.81	1873.71
<b>ac</b>	1602617677	2086511534	15089	24123	781760786	51,809.98	1495.15
<b>t</b>	408797569	469087034	4498	6205	203951232	45,342.65	378.57

Table 46: Trucking metrics divided by subsector for Nevada in 2020

Nevada 2020							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
<b>total</b>	2060805052	2709028763	20299	34871	985712018	50,324.81	1873.71
<b>ac</b>	1674150483	2265083793	16087	29018	781760786	51,809.98	1495.15
<b>t</b>	386654568	443944969	4212	5853	203951232	45,342.65	378.57

Table 47: 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
<b>ac</b>	2649612568	2999433919	24097	27907	1098468200	45585.2679	2150.680102
<b>t</b>	605030075	660689246.5	5733	7480	281706756	49137.7561	699.1262428
<b>total</b>	3254642643	3660123165	29830	35387	1380174956	46268.0173	2849.806344

Table 48: 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 49: 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 50: 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 51: Trucking metrics divided by subsector for Utah in 2019

Utah 2019							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
total	3750198866	4208220523	33506	41319	1537312575	45882	3207.40
ac	3097113193	3496248884	27276	33388	1238095550	45392	2429.30
t	653085674	711971639	6230	7931	299217026	48028	778.10

Table 52: Trucking metrics divided by subsector for Utah in 2020

Utah 2020							
Subsector	Revenues real\$	Revenues real\$, including the self-employed	Employees	Employees, including the self-employed	Payroll real\$	Payroll real\$ / emp	GDP real\$ million
<b>total</b>	2060805052	2709028763	20299	34871	1060482675	52243	1537.93
<b>ac</b>	1674150483	2265083793	16087	29018	859506414	53428	1150.69
<b>t</b>	386654568	443944969	4212	5853	200976260	47715	38723