Understanding Firm-Level Trends of the General Freight Trucking Sector in the United States

AUTHOR: ELENA VINDROLA
SUPERVISOR: GENEVIEVE GIULIANO
CONTRIBUTOR: MICHELANGELO FILIPPI

University of Southern California

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Abstract

This research paper analyzes economic microdata for the NAICS code 48412, general freight trucking long distance, in the United States (US). The research builds on a sample of 11 major US firms which all have establishments in California, and it ties to the project carried out at the METRANS Transportation Consortium, to evaluate the business competitiveness of the freight industry in California following the California Sustainable Freight Action Plan (CSFAP) for Go-Biz.

The goal of this research is to deliver sensible data analytics to aid and improve policy planning, with the aim of eventually enhancing sustainability in the field of transportation. The microdata analyzed were mainly gathered using the ORBIS database.

The statistics were then compared to the metrics created with the METRANS data coming from the Economic Census (EC), the Quarterly Census of Employment and Wages (QCEW), the Non-Employer Statistics (NES), the Bureau of Economic Analysis (BEA) and the US Department of Commerce. The microdata analysis adds to the metrics produced at the METRANS Transportation Consortium because it elucidates the patterns of the subsector 48412 of the freight industry in a detailed, precise, and accurate manner. In fact, currently the metrics show industry trends as aggregated data, and the individual companies within a disaggregated NAICS code are not analyzed. This research enables researchers to fully understand firms' trends of the truck transportation in an elaborate and exhaustive way, so that more general trends can be put into perspective and specific knowledge of microdata can be added to the METRANS research.

The results demonstrate that the trends of the 11 firms' sample are in line with the totality of general freight trucking long distance sector in the US and that all metrics measuring economic performance show improvements over the years under study. This conclusion is optimistic from an economic point of view and suggests that within this sector there may be the financial capability to potentially invest also in sustainability, alongside the other industry goals.

Introduction

This research project is carried out at the graduate level for PPD590, a research class offered by the USC Sol Price School of Public Policy and directed by Professor Giuliano. Excel and SQL were used to process raw data: thus, computer software and data science were the main tools of the research methodology. The research is intended to target the field of Green Technologies, a concentration of Electrical and Computer Engineering.

Moreover, the research builds on a project carried out with Professor Giuliano again plus Professor Wei, which consists in developing economic competitiveness and growth metrics to measure the health of the freight sector while implementing the CSFAP; the work is performed at the METRANS Transportation Consortium, which is a partnership between the University of Southern California and California State University Long Beach.

METRANS is gathering, processing, and analyzing data from public databases. The METRANS metrics obtained thus far that are related to the scope of this research are the following:

1. financial performance measures – revenues ($), and revenues including the self-employed ($)
2. overall economic performance – GDP (million $)
3. workforce statistics - number of employees, number of employees including the self-employed, and total payroll ($)

The data sources are QCEW, NES, EC, BEA, and the US Department of Commerce. The metrics are created by manipulating data with Microsoft Excel and SQL procedures and the master database is stored in MySQL and it contains all the metrics from the year 2015 up to the year 2018. The latest results suggest that the performance of the freight industry in terms of economy, finance, labor, and productivity has had a positive trend since the baseline year 2015.

The METRANS research enhances the field of transportation by providing detailed information about the freight industry in a comprehensive and precise manner; it takes in consideration all the different NAICS codes within the sector at the 6-digit disaggregated level and therefore it also provides a deep understanding of the composition of the freight industry and the individual performances of its subsectors over the years. The freight industry research also yields great benefits to society by supporting the Climate Change Scoping Plan, which was developed to solidify commitments to diminish and reverse the negative impacts of climate change to the environment, the communities, and the economy. A scientific approach to climate change has been built upon the principle that economic prosperity and environmental sustainability are one and the same, helping to reach the objective of reducing greenhouse gas emissions and to integrate climate thinking and sustainability programming while growing the economy. (Caltrans)

This research paper dives into the trends of individual US firms that have establishments in California, to elaborate the METRANS results at the level of the NAICS 48412. A sample of 11 of the top companies within the general freight trucking long distance sector is selected, and then the economic and performance trends of the sample are compared to the trends of the US total for that specific NAICS. The goal of this research is to understand how the top companies contribute to the overall economy, and whether their aggregated trends differentiate from the totality of the sector. This elucidates patterns at a firm-level and enables a deeper understanding of the sector's microdata trends. Thus, this research project uses data analysis to understand the link between consolidated firms in the trucking sector and economic performance of the industry to possibly aid decision making when evaluating green policy solutions. In addition to comparing METRANS metrics with the firms' metrics, downloaded from the ORBIS database owned by the Bureau Van-Dijk, this research also provides new metrics: gross profits, EBITDA, and net income. These statistics are

difficult to find at the macro-data level, but they are very valuable because they are the best indicator of a sector's performance.

It is important to point out that the sample of firms was chosen very carefully. In fact, a checkup was carried out to make sure that the individual companies are all within the top transportation firms in the US, according to the 2020 Top 100 For-Hire Carriers list published by Transport Topics. (Clevenger)

All the values used to compile firms' metrics can be replicated by using the following resources, all open to the public: the SEC website searching the open data using the Standard Industrial Classification (SIC), the Financial Statements Data Sets found on the U.S. Government's Open Data website, and data found on US stock exchange websites, such as Nasdaq and the New York Stock Exchange (NYSE). With these sources, the data would come from the "Consolidated Statements of Comprehensive Income", which means that the firms' raw data would be relative to the business group and not to its single businesses. In other words, the firms in the sample would still be 11, but they would operate many businesses, and their consolidated statements list only the final sum of all their businesses for each statistic. Even though this fact could lead to partial loss of businesses' heterogeneity, the groups chosen are all relatively homogeneous and therefore most of their businesses operate within the NAICS 48412: major data relative to other NAICS would thus not be included in the analysis. All this is possible because the groups are top firms, and they are listed in the stock market: for this reason, they are visible on the SEC website, and they are required to publish annually their consolidated financial statements.

Methods

The data for this research were gathered in collaboration with researcher Michelangelo Filippi from the University of Turin, by accessing the ORBIS database owned by the Bureau Van-Dijk; when data were incomplete, we searched the missing information using SEC's forms K-10, annual reports and the other open sources databases listed in the introduction. As mentioned in the paper Economic Performance Index: An Industry-Centric Approach, "it is very clear that economic performance relates more directly to industries and companies than to countries"; in fact, at the industry-level so much economic activity is heterogeneous, confirming the importance of an approach that analyzes firm-level data; since our data focuses on individual companies within a country rather than the economic performance of that country as a whole, the analysis carried out in this paper can also be seen as an industry-centric approach, which improves accuracy of results by providing a bottom-up methodology. Moreover, the sample of data is compiled for top companies in the NAICS 48412, providing an overview of the trends and the impacts of big firms on the totality of the sector.

The data for NAICS 48412, composed of 484121 - general freight trucking long distance truckload - and 484122 - general freight trucking long distance less than truckload - was gathered for the US for companies having at least 2 employees. Public authorities and the government were excluded from the search and all the firms that were selected have establishments in California. Each fiscal year under consideration ends on March 31st.The years available are 2015-2020, which include the years analyzed by the METRANS research. The main statistics chosen from the various ORBIS variables available were operating revenue, number of employees, cost of employees / operating revenue, EBITDA margin, gross profit, and net income. The values were then manipulated to produce the metrics, some of which were then compared to the METRANS database: the indexed trends of the sample and of the METRANS totals were plotted against each other for all the years for which any metric was available; the market shares of the sample relative to the METRANS totals were also calculated and plotted on a graph for each year during which both databases had available data, with METRANS values accounting for 100%.

Since METRANS data has aggregated data for the NAICS under consideration, while the sample has data for singular companies within the same NAICS, the sample's microdata completed the METRANS macro-data by adding individual firms' data to the traditional top-down methodologies of looking through an economic-wide lens to measure overall economic performance. (Global Economic Symposium 3-5)

Analysis

Only firms that are consolidated were reported as part of the sample. The top 11 firms that were selected for NAICS 48412 - general freight trucking long distance - showed complete data during the years 2015-2020 for the following variables:

1. operating revenue (turnover) th LCU
2. number of employees
3. costs of employees / operating revenue (%)
4. EBITDA margin (%)
5. gross profit th LCU
6. P/L for period [=net income] th LCU

Where "th LCU" is thousands local current units relative to the U.S. dollar, in other words 1000$, and the EBITDA margin, or gross operating margin, is a measure of a company's operating profit as a percentage of its revenue.

The values of the 11 firms were processed and the following cumulative sample metrics were produced for each year under study by carrying out the calculations as specified on each bullet point and adding together the firms' individual results:

- revenues ($) = [operating revenue (turnover) th LCU] * [1000]
- employees = [number of employees]
- payroll ($) = [cost of employees / operating revenue (%)] * [revenues ($)] / [100]
- EBITDA ($) = [EBITDA margin (%)] * [revenues ($)] / [100]
- GDP ($) = [EBITDA ($)] + [payroll ($)]
- gross profit ($) = [gross profit th LCU] * [1000]
- net income ($) = [P/L for period th LCU] * [1000]

If the EBITDA - or earnings before interest, taxes, depreciation, and amortization - is added to the cost of labor - or payroll - the added value of production is the results, which is a fair estimate for the GDP. However, it is important to report that the methodology used in this analysis may not reflect the exact process carried out to officially estimate the GDP at the national level. For the purposes of this research, the assumption is that this GDP estimate is proportional and comparable to the official GDP values calculated by BEA, even though it may not be identical.

The EBITDA, gross profit and net income metrics all represent productivity; however, there are subtle but significant differences between the three: the gross profit is obtained by subtracting the production costs only from the revenues and the net income by subtracting all the costs from the Revenues, on the other hand, the EBITDA shows earnings before interests, taxes, depreciation over time and amortization. (Investopedia)

Then the METRANS metrics for the NAICS codes 484121 and 484122 were gathered from the MySQL database, which stores the statistics that have been processed from the raw data present in the five open-source databases EC, QCEW, NES, BEA, and the US Department of Commerce. This data again is available for the years 2015-2018, and it is listed in Appendix A. The values for the two 6-digit level NAICS were summed to produce metrics at the 5-digit level for the NAICS code 48412, which is the total of which the research sample is part of. The total US values of

employment and payroll reported for the years 2019 and 2020 were gathered from raw data coming directly from the QCEW database.

The sample's revenues ($) were compared to the METRANS' revenues ($) and revenues including the self-employed; the sample's employees were compared to the METRANS' number of employees and number of employees including the self employed; the sample's payroll ($) was compared to the METRANS' total payroll ($); finally, the sample's GDP ($) was compared to the METRANS' GDP (million $) * 1000000. Moreover, trends for sample's EBITDA ($), gross profit ($) and net income ($) were plotted without a comparison metric for the entire industry. In fact, those variables are not available at an aggregated level for all the companies operating within the 48412 NAICS code in the US.

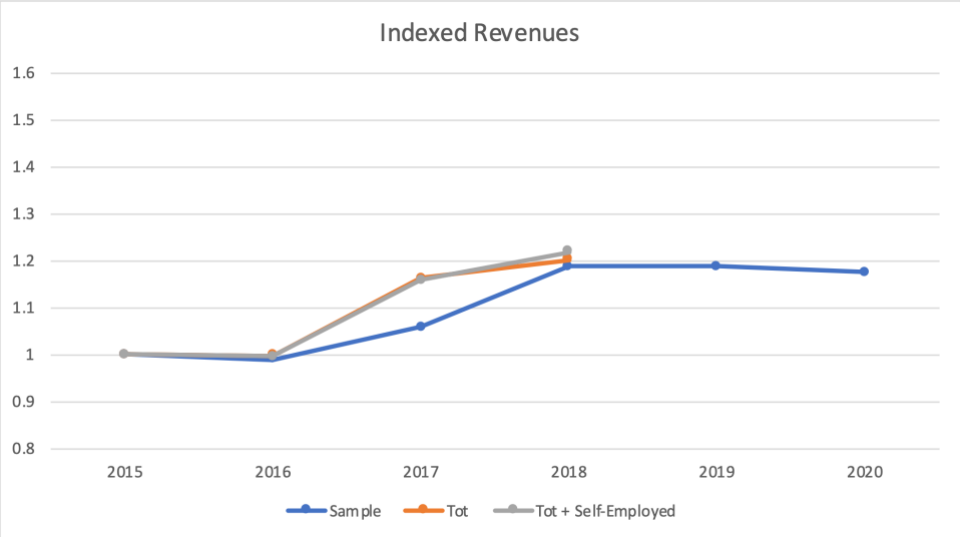
Two types of graphs were produced: indexed trends and market shares. The y-axis values for the indexed trends are on a percentage scale, with the baseline year 2015 set at y=1 for both the sample and the totals, and the other years set at their respective percentage growth or loss compared to the baseline. To calculate the y-values, first the growth rate between each pair of two consecutive years was calculated for each metric. Then the formula $V_2 = [V_1] + [V_1] * [R_{1\text{-}2}]$ was used to calculate each year's y-values for each metric, where V_1 = value for year 1, V_2 = value for year 2, and $R_{1\text{-}2}$ = growth rate between year 1 and year 2.

The market share was calculated dividing the sample values by the total values and multiplying the result by 100 to get a percentage scale on the y-axis. The METRANS metrics in this case account for 100% and all the years are plotted on the same graph for each statistic.

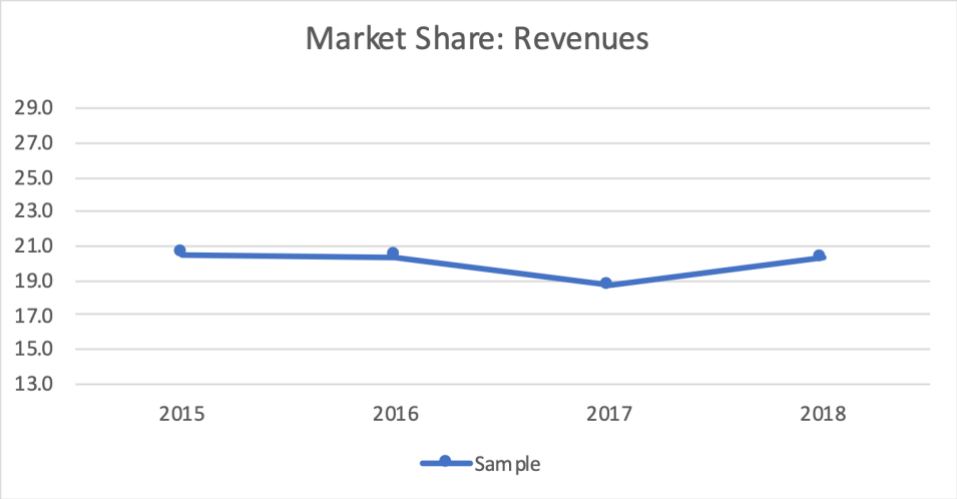
The graphs for each metric are presented below. The line for the sample values is always shown in blue, the line for US total excluding the self-employed statistics in orange, and the line for the US total including the self-employed data in grey. The graphs are not consistent regarding the years shown on the x-axis because the data is not always available for all the years 2015-2020: however, all the values that could be gathered during the timeframe of this research were reported.

Revenues

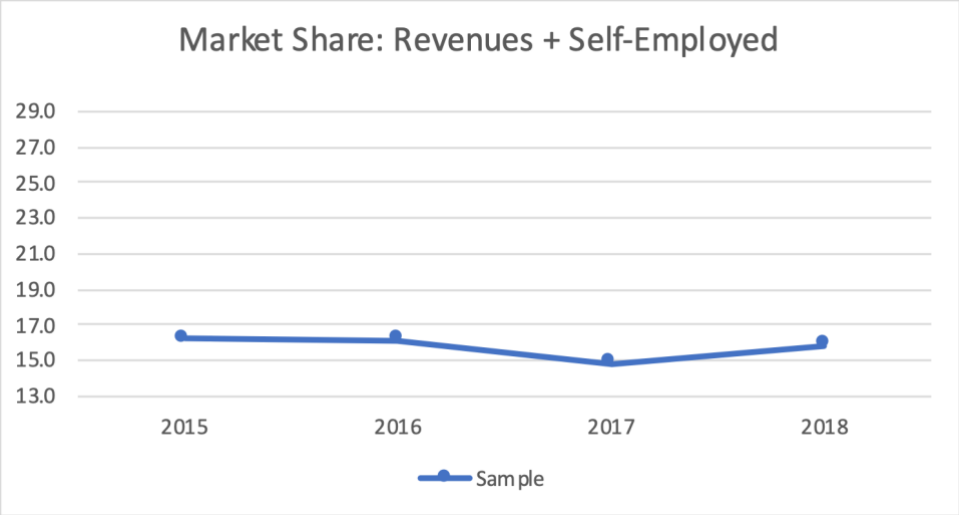
The three revenues' metrics are the sample's revenue (Sample), the total revenues for NAICS 48412 sector (Tot) and the total revenues including the revenues generated by the self-employed (Tot + Self-Employed) from the METRANS database.



Graph 1: Indexed trend of revenues



Graph 2: the sample's revenues as a share of the total, excluding the revenues of the self-employed

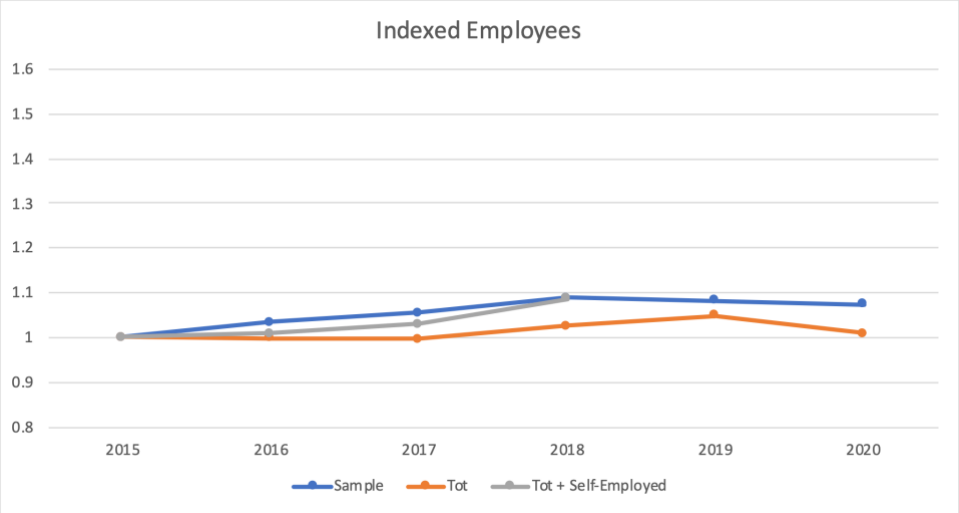


Graph 3: the sample's revenues as a share of the total, including the revenues of the self-employed

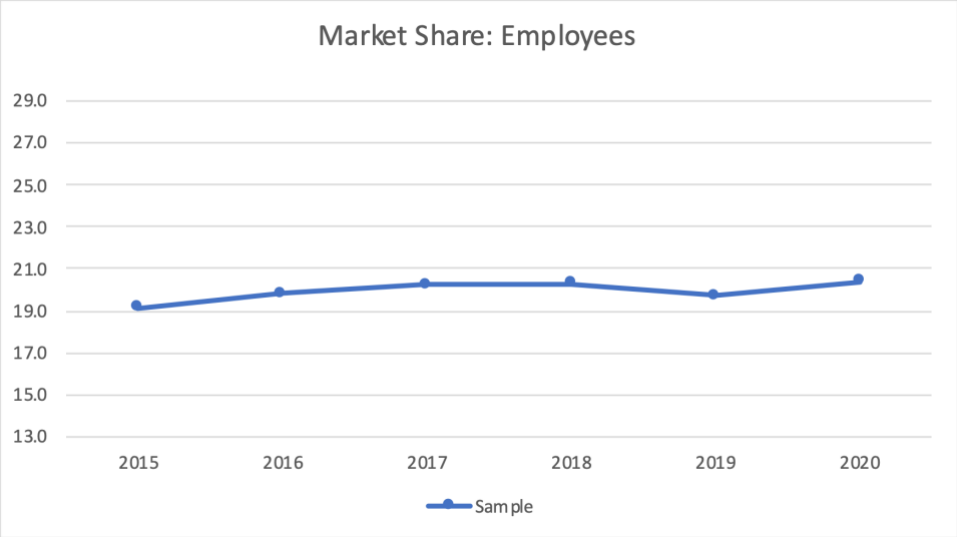
The indexed graph shows that the sum of the revenues of the 11 firms have been increasing over the years at approximately the same rate as the revenues of the entire sector, also when including the self-employed. For this reason, the market shares look relatively flat, with a small drop in 2017, during which the US total grew faster than the sample of top firms in terms of revenues, also when analyzing the self-employed statistics. It is important to point out that 11 top firms made on average ~20% of the total US revenues when excluding the self-employed, and ~16% of the total including the self-employed. Finally, if the sample data is used as precursor of the total trends, which makes sense given that between 2015-2018 they followed a similar pattern, it can be predicted that in 2019 and 2020 total revenues are likely to flatten out for the total sector as well.

Employees

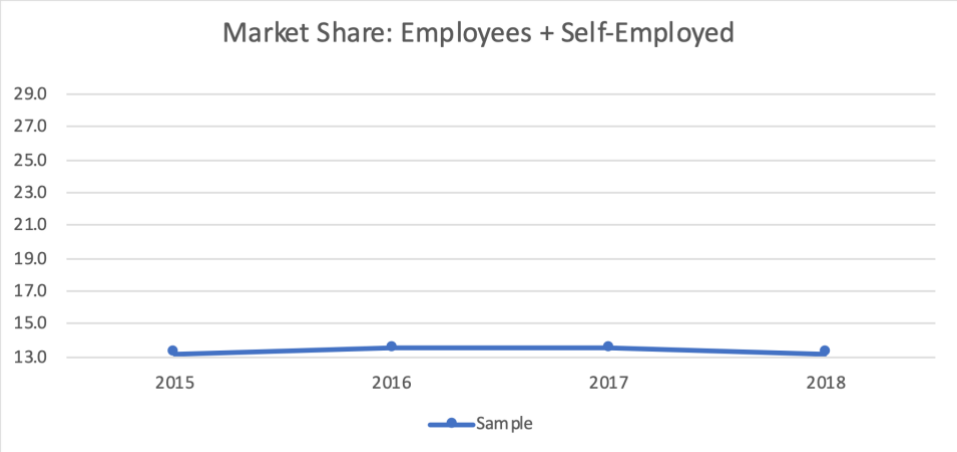
The three metrics for the number of employees are the sample's employees (Sample), the total workers employed by all the NAICS 48412 companies in the US (Tot) and the total number of employees operating within the sector, including the self-employed (Tot + Self-Employed) from the METRANS database.



Graph 4: Indexed trend of the number of employees



Graph 5: the sample's number of employees as a share of the total, excluding the self-employed



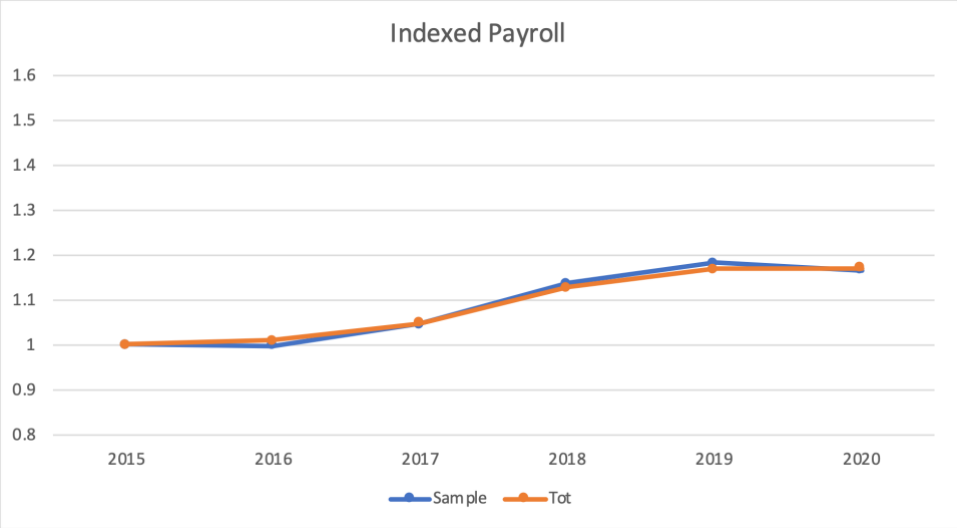
Graph 6: the sample's number of employees as a share of the total, including the self-employed

These graphs show that between 2015 and 2020 the curves for total number of employees and for number of employees of the 10 firms stayed relatively stable between 1 and 1.1, which represents just a 10% growth since the baseline. Moreover, if the self-employed is counted, the rate

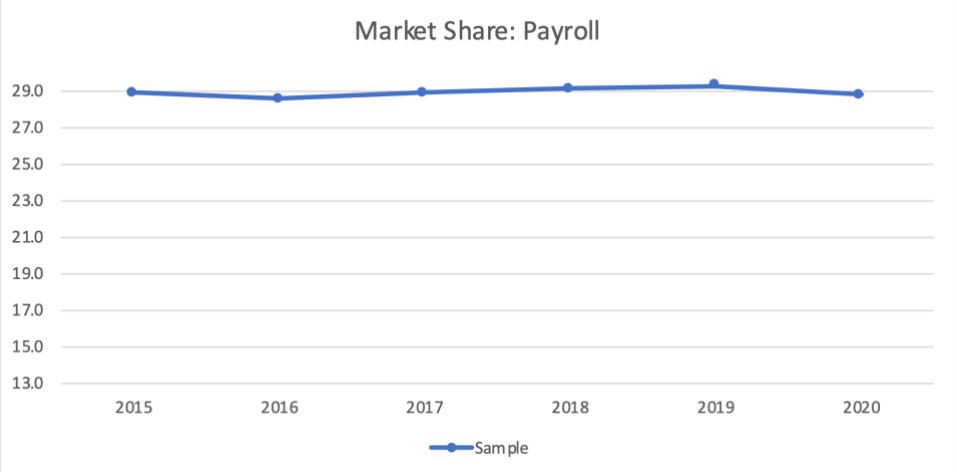
of growth aligns even more precisely with the sample, which is slightly higher than the total excluding the self-employed. For this reason, the market share counting the self-employed is even more stable than the market share excluding the self-employed, which fluctuates between ~19% and ~21% for the years 2015-2020. Then, it is interesting to notice that on average these 11 top companies employ ~20% of the total workers in the NAICS 48412 for the US, and ~13% when counting the self-employed. Finally, these data prove that the claim raised in the previous section about total revenues flattening out in 2019-2020 might be accurate, since the number of employees did not grow during those two years.

Payroll

For the payroll, the total (Tot) is only reported excluding the self-employed, who do not have any payroll correlated. The sample's payroll is shown as Sample.



Graph 7: Indexed trends of the sample and the total payrolls for NAICS 48412



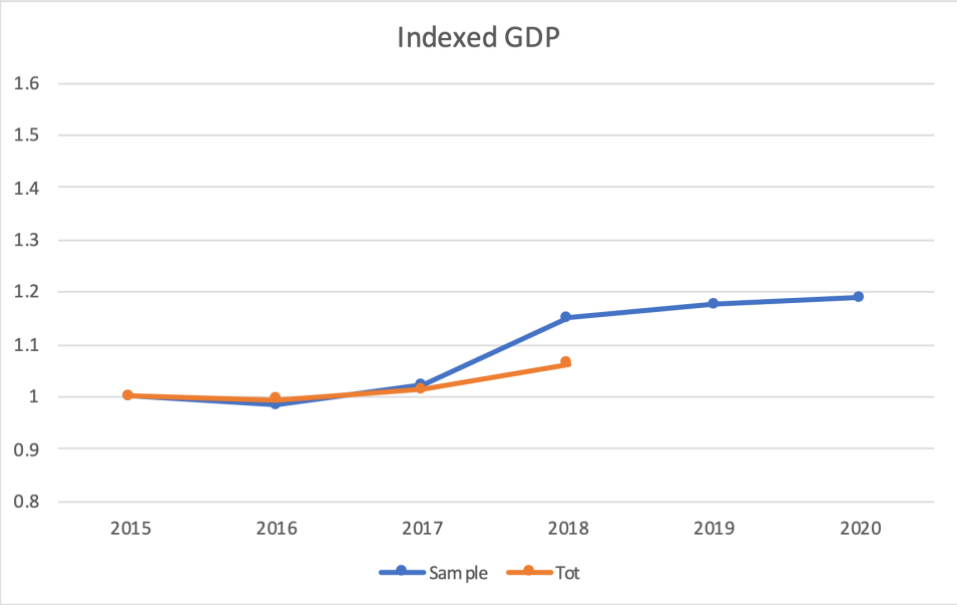
Graph 8: the sample's payroll as share of the total

The graphs above show that the total payroll follows extremely closely the indexed trend of the sample, and thus the market share is very stable at an average value of 29%. It is interesting to notice that the market share of the total employees, excluding the self-employed is ~20% on average over the years under study, while the payroll has a higher market share; even though there

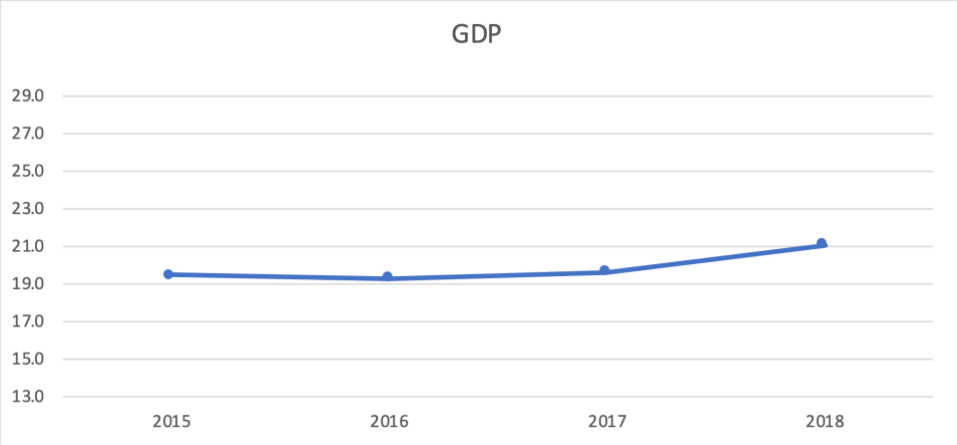
may be some inconsistencies between the total payroll metric from METRANS and the cost of employees statistic obtained from ORBIS and SEC, the differences are likely minimal, and a sensible explanation for these numbers may lie in the fact that bigger consolidated companies tend to pay their workers more than smaller ones.

GDP

The GDP estimate for the sample is likely comparable with the GDP from the METRANS data, even though minor differences between the BEA's methodology and the one carried out in this research might be present.



Graph 9: Indexed trends of GDP for the sample and the total NAICS 48412



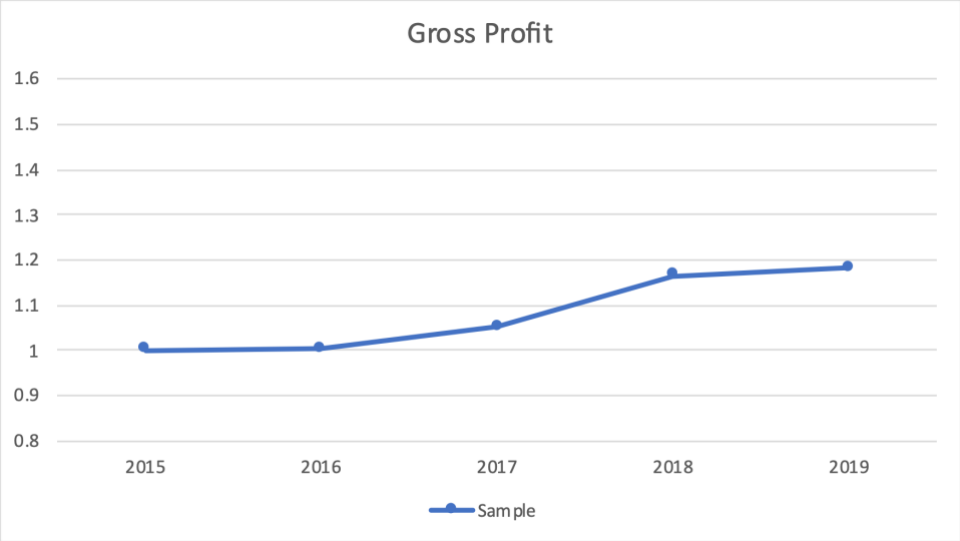
Graph 10: sample's GDP as a share of the total

The graphs show that over the years 2015-2017 the GDP of the 11 firms grew at approximately the same rate to that of the GDP for the total sector, while in 2018 the sample's GDP grew considerably faster. For this reason, in graph 10 a small deviation from the general trend is seen in 2018, when the 11 firms seemed to contribute relatively more than usual to the totality of the sector's GDP. Again, it is worth pointing out that the average market share value for the GDP is ~20%, which is in line with the market share of the number of employees, excluding the self-

employed. If the GDP market share is compared to the market share of the number of employees including the self-employed, it can be noticed that bigger companies contribute to a higher share of the GDP than they do to the share of employees, which makes sense as workers of bigger companies, who are often part of teams and follow well-established internal rules, are often more efficient and profitable than self-employed workers.

Gross Profit

This is the first new metric which is not present in the METRANS database, and it is equal to the revenues minus the cost of goods sold. This and the other two productivity metrics, which are described in the next two sections, show nominal, not real, values: this means that they have not been adjusted for inflation, which, by the way, has stayed relatively low during the years under study. In other words, the real values may be a bit lower than what is shown in the graphs 11-13, as variations in prices due to inflation, such as fuel prices, may have impacted the metrics' real values. The graph below shows the indexed trend of the gross profit for the sample of the 11 firms.

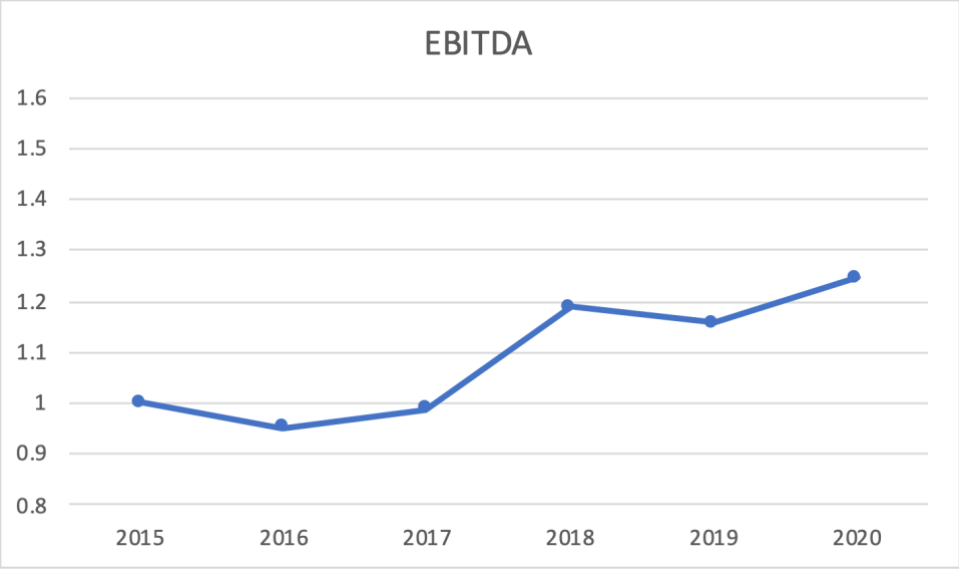


Graph 11: Indexed trend of sample's gross profits

The results clearly show that profits have been increasing between 2015 and 2019, and that the rate of growth is the highest between 2017 and 2018. This is a very positive result because it implies that productivity of the top firms in the US working in the general freight trucking long distance sector has been consistently increasing.

EBITDA

This is the second new metric which is not present in the METRANS database. The graph below shows the indexed trend of the sample for the EBITDA, which is essentially equal to the net income with interest, taxes, depreciation value and amortization added back; the net income, analyzed in the next section, is the same as the gross profit, but with all costs and expenses subtracted from the revenues, not only the costs of production.

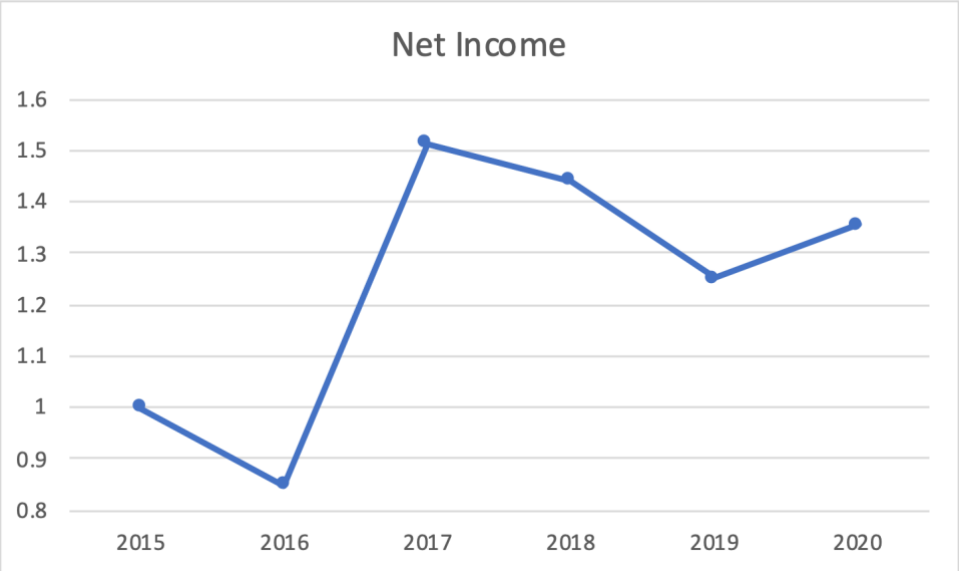


Graph 12: Indexed trend of sample's EBITDA

The EBITDA shows relatively constant growth between 2015 and 2020, with a sharp increase between 2017 and 208, and small drops in 2016 and 2019. Overall, the cumulative end value is ~25% higher than the baseline, suggesting increasing productivity for the sample during those 6 years.

Net Income

This is the third new metric which is not present in the METRANS database. The net income is the metric that is the most affected by variation in prices, and thus it is the one whose real value could most likely be slightly different from the nominal value shown below; this is because net income is obtained by subtracting all costs and expenses from the revenues, and the total costs fluctuate considerably with inflation. The graph below shows the indexed trend of the sample of the 11 firms for the net income.



Graph 12: Indexed trend of sample's net income

The indexed trend of the net income shows high fluctuations over the years, but eventually a value ~35% higher than the baseline in 2020, suggesting an improvement in productivity since 2015. This metric is the most variable and heterogeneous between each firm, and thus is it debatable whether extending this result to the entire NAICS 48412 would be accurate: it is likely appropriate, but also possibly prone to errors. Specifically, it must be specified that this is a closed sample, whose mix of firms remained constant during the years 2015-2020, while for the entire sector, each year there are failing firms that exit the market and new companies that enter: the ones that exit usually have negative net income values at the end of their lifetime and the ones that enter usually have very low net income values at the beginning of their lifetime. For the reason, analyzing only big firms that are well-established may not reflect exactly the trends of the net income of the whole industry. Deducing sector's productivity trends from the sample increases in accuracy when the net income is linked to the other two productivity metrics of gross profit and EBITDA.

Conclusions

The results visualized for the number of employees are very interesting when paired to the metrics about revenues: excluding the self-employed, the 11 companies of the sample employed on average ~20% of the total US workers for the 48412 NAICS code and produced ~20% of the total revenue; however, when including the self-employed, these same firms accounted for just ~13% of the total workforce but for ~16% of the total revenue. These results suggest that the self-employed seem to produce less revenue per capita than the workers employed by bigger companies, while the employees of the top 11 companies are not able to produce more revenue than the rest of the workers employed by firms operating within the industry, as the 11 firms hold an equal share of revenues and employees.

If the payroll metrics are added to the picture, new information is added to support the hypothesis that firms with employees compete very closely within the market. In fact, the payroll indexed growth of the sample aligns with the total. This might suggest that top companies might set the trend that the industry follows when raising the wages of the workers; another hypothesis could be that the governmental regulations and public policies or yearly increases in the cost of life and inflation are what influence the trends for both the sample and the total. That said, top firms seem to pay more than smaller companies: the sample holds an average market share of ~29% for the payroll, compared to a market share of ~20% for the number of employees.

The GDP trends show that the individual firms seem to contribute to a relatively stable share of the total GDP during the first three years taken in consideration, with a slight increase in share during 2018. The indexed trend of the sample's GDP is very similar to that of the revenues and payroll: they all start at 1, increase by roughly 20% up until 2018 and then stabilize at that value for the last two years. It is particularly interesting to notice that the market share of the GDP has an average value of ~20%, which is the same as the market share of the revenues and the number of employees, excluding the self-employed. However, when observing the GDP trends, it is important to keep in mind the limitations of the research, which estimates the GDP values of the sample from other statistics.

The three new productivity metrics - gross profit, EBITDA, and net income - all suggest an improvement of sample's performance over the years 2015-2019/2020. First, the gross profit shows an interesting result which sheds a very optimistic light on the productivity of NAICS 48412: the sample's profits have been constantly increasing, reaching a value ~18% higher in 2019 compared to the baseline. The net income indexed trend is more variable because this metric has higher elasticity compared to other statistics measuring economic performance; this is because companies often cannot quickly adjust prices when costs suddenly increase or when other economic variables change within the market: for example, if fuel costs spike but this higher cost of operation cannot be

absorbed by the clients, the firms must bear the consequences of the increased costs on their internal financial balance and, given that other production factors stay constant, the net income value drops. In other words, the fact that the net income indexed trend has swings in gradient makes sense because single companies can oscillate sharply between productive and unprofitable years, and thus the growth rate is rarely constant. Finally, the EBITDA shows an indexed trend which is somewhat a middle ground between the gross profit and the net income metrics, in terms of cumulative results and yearly oscillations: overall it follows gross profits, since the indexed value grows the most between 2016 and 2018; however, a clear drop is shown in 2016 and 2019, just as for net income, and between 2019 and 2020 both net income and EBITDA increase by ~10%.

Due to limitations in the availability of data coming from the ORBIS database, only 11 of the top firms can be analyzed with accuracy, and therefore the productivity metrics for the entire sector cannot be calculated. However, the fact that the other sample's metrics essentially follow the total when indexed could be expanded to claim that productivity might show a similar trend; if this is true, then it could be deduced that the general freight trucking long distance sector has had increasing gross profit, EBITDA, and net income during the years under study, and that productivity of the sector has been improving. Of course, this statement is written as a claim and not as a certainty.

Future research efforts might want to focus on finding more complete data for productivity metrics in the freight industry. Moreover, for the sample, gross profit in 2020 is currently missing, and none of the metrics is out yet for 2021: future updates to the companies' metrics will be essential to understand long term trends and to evaluate the impacts of covid-19 and other recent events on the economic performance of the general freight trucking long distance sector in the United States with the bottom-up approach explored in this paper. In addition, the missing years for the NAICS 48412 US total values, including and excluding the self-employed, should be reported too as soon as they become available on the open-source databases from which they have been gathered.

It is important to point out that the analysis carried out about economic performance of the general freight trucking long distance sector relates to the US country, but that the sample was chosen specifically to contain firms that have establishments in California state. For this reason, it is relatively safe to claim that the trends of top firms in California within this industry probably show similar patterns to the ones analyzed in this research.

All the metrics suggest an improvement in the economic performance for the sector, and this can be connected to future sustainability efforts, as this paper takes inspiration from the research carried out at the METRANS Transportation Consortium to support the CSFAP. Since the trends of the general freight trucking industry are all positive between the baseline and the last year of study, the sector is doing well: therefore, at least some companies operating within the NAICS 48412 could potentially afford to invest in green technologies - such as improving the efficiency of their truck's engines, using biofuels, or transitioning to hybrid vehicles that may use for some on the total mileage traveled electricity coming from renewable sources. These efforts would reduce the amount of particulate matter and greenhouse gases, in particular CO_2, released from fossil fuels that would otherwise exacerbate current environmental problems such as global warming, acid rains and air pollution. In addition to engineering advancements, a variety of public policies, such as the CSFAP, could be established by the federal government or the local entities ruling their relative US states, in order to enhance sustainable practices within the industry with the goal of maximizing the firms' economic welfare and the environmental health of the country: given the current data available, the sector appears to be able to successfully withstand and integrate new sustainable policies, since in economic terms it has not been losing profitability or earnings over the past few years and thus it seems to have, at least in theory, the financial capability to focus and invest in a greener future, alongside its other industry goals.

References

BEA, apps.bea.gov/itable/.

Bureau, US Census. "Economic Census Tables." *The United States Census Bureau*, 5 May 2020, www.census.gov/programs-surveys/economic-census/data/tables.html.

Bureau, US Census. "NES Tables." *The United States Census Bureau*, 29 Sept. 2020, www.census.gov/programs-surveys/nonemployer-statistics/data/tables.All.html.

Caltrans. Task Order Number TO 008. 20 May 2019.

Clevenger, Seth. "2020 TOP 100 FOR-HIRE CARRIERS" *Transport Topics*. EFS and Trimble, 2020. Web. 21 June 2021.

"Daily Stock Market Overview, Data Updates, Reports & News." *Nasdaq*, www.nasdaq.com/.

"Financial Statement Data Sets." *Financial Statement Data Sets - CKAN*, Publisher Economic and Risk Analysis, 12 Apr. 2021, catalog.data.gov/dataset/financial-statement-data-sets.

Global Economic Symposium. "Economic Performance Index: An Industry-Centric Approach." Kiel Institute for the World Economy, 2013, pp 1-20.

"HOME." *SEC Emblem*, 5 Feb. 2017, www.sec.gov/.

Investopedia, Investopedia, www.investopedia.com/.

"NAICS & SIC Identification Tools." *NAICS Association*, www.naics.com/search/.

Orbis - Bureau Van Dijk. orbis.bvdinfo.com/.

"QCEW Data Files." *U.S. Bureau of Labor Statistics*, U.S. Bureau of Labor Statistics, www.bls.gov/cew/downloadable-data-files.htm.

"The Intercontinental Exchange." *NYSE*, www.nyse.com/index.

Appendix A

Below is the METRANS database with the values that were used to calculate the metrics for the entire US 48412 NAICS. The US metrics for the years 2019 and 2020 were obtained directly from raw QCEW data.

industry: General Freight trucking, long distance	NAICS	revenues$ 2018	revenues$ 2017	revenues$ 2016	revenues$ 2015
General Freight trucking, long distance, truckload	484121	1.17E+11	1.14E+11	9.4566E+10	9.4571E+10

General Freight trucking, long distance, less than truckload	484122	4.8583E+10	46315553000	4.2928E+10	4.324E+10

Table 1: Revenues metric from the METRANS MySQL database, including the NAICS codes

industry: General Freight trucking, long distance	revenues$ including the self-employed 2018	revenues$ including the self-employed 2017	revenues$ including the self-employed 2016	revenues$ including the self-employed 2015
General Freight trucking, long distance, truckload	1.48E+11	1.42E+11	1.19E+11	1.19E+11
General Freight trucking, long distance, less than truckload	6.4617E+10	5.9979E+10	5.4727E+10	5.5309E+10

Table 2: Revenues including the self-employed metric from the METRANS MySQL database

industry: General Freight trucking, long distance	emp 2018	emp 2017	emp 2016	emp 2015
General Freight trucking, long distance, truckload	510342	499658	503109	503137
General Freight trucking, long distance, less than truckload	260161	248017	245871	247660

Table 3: Number of employees metric from the METRANS MySQL database

industry: General Freight trucking, long distance	Employees including the self-employed 2018	Employees including the self-employed 2017	Employees including the self-employed 2016	Employees including the self-employed 2015
General Freight trucking, long distance, truckload	785793	751732	739436	731478
General Freight trucking, long distance, less than truckload	400580	373140	361365	360056

Table 4: Number of employees including the self-employed from the METRANS database

industry: General Freight trucking, long distance	GDP $million 2018	GDP $million 2017	GDP $million 2016	GDP $million 2015
General Freight trucking, long distance, truckload	53842.4545	51752.9166	51048.5221	51243.0962
General Freight trucking, long distance, less than truckload	27447.6852	25688.7776	24947.5785	25223.4782

Table 5: GDP metric from the METRANS MySQL database

industry: General Freight trucking, long distance	payroll$ 2018	payroll$ 2017	payroll$ 2016	payroll$ 2015
General Freight trucking, long distance, truckload	2.6398E+10	2.4569E+10	2.3748E+10	2.3511E+10
General Freight trucking, long distance, less than truckload	1.5452E+10	1.4283E+10	1.369E+10	1.3581E+10

Table 6: Total payroll metric from the METRANS MySQL database