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Revisiting The S-Corporation Premium: Further Evidence

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ABSTRACT: Financial and accounting professionals, the IRS, and the legal community continually deliberate the value of a business based on its legal structure—most often comparing the value of a C-Corporation to pass-through entities such as S-Corporations
?1?2 and limited liability companies. Despite the continued deliberations and various court rulings, the cleavages of thought have not converged on a single hypothesis of value. We provide an empirical analysis on M&A transaction data that spans nearly two decades. Specifically, we conduct multiple ANOVA tests, and a programmatic matching analysis of nearly identical pass-through entities and C-Corporation transactions that occurred in the same industry. The results validate the premise that there exists no pass-through entity valuation premium.

JEL Classifications: C60; G12; G32; G34; H29; K22.

Keywords: S-Corporation premium; C-Corporation; limited liability corporation; valuation; pass-through entity; corporate finance; forensic accounting; forensic finance; forensic economics.

I. INTRODUCTION

Financial and accounting professionals, the Internal Revenue Service (IRS), and the legal community, more broadly defined, continually deliberate the market value of a business based on its legal structure—most often comparing the value of a Subchapter C-Corporation (CCorp), to that of an Subchapter S-Corporation (SCorp), and to that of a limited liability company (LLC) (together referred to as pass-through entities [PTE]). Despite the continued

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deliberations and various court rulings, the cleavages of thought have not converged on a single hypothesis of value, but rather appear to have remained consistent with one camp of experts suggesting that PTEs provide more value to shareholders when compared to CCorps, while others suggest that there is no difference in value between PTEs and CCorps.

Most prudent business owners understand that CCorps pay *corporate income tax* on the profits of the business prior to any profit dividends being distributed to them. These same business owners most often understand that they are required to pay *personal income taxes* on their percentage of the annual profits. This is what is normally referred to as the "double-tax" problem of the CCorp. On the other hand, PTEs do not pay corporate income tax, but rather the shareholder or member of the PTE is required to pay personal income tax only on their percentage of the profits.

Due to the differences in the tax obligations, one camp of financial experts has argued that PTEs have market values greater than CCorps because the dividends distributed to the member will be greater than those distributed to the shareholder, *ceteris paribus*. The typical argument mounted against this notion, assuming it is true, is that if in fact PTEs are worth more, then shareholders will change the legal and tax structure of the business to maximize shareholder value.

However, despite the logical and rational cleavages among financial professionals, judges from various court venues, as well as the IRS commissioner, have continued to be indecisive in their logic when deliberating on the value of the PTE. As summarized in the cases below, the case law is dislocated, with certain courts and judges mounting arguments in favor of the PTE valuation premium and with others suggesting the opposite.

II. THE COURT'S VARIED POSITIONS

1. In the 2006 *chancery case* of *Delaware Open MRI Radiology Associates, P.A. v. Howard B. Kessler*[1] the majority shareholder group (respondents) of Delaware Open MRI Radiology Associates, P.A., an SCorp, forced a merger resulting in the minority members (petitioners) filing suit for not receiving fair value of their shares. The respondents' financial expert imposed a 40.0 percent corporate income rate while the petitioners' expert applied no corporate income liability. In this particular case, the Delaware Chancery Court ruled in favor of the petitioner, valuing company with an SCorp tax structure and awarded the petitioner their *pro rata* share of the value without considering the full income tax impact of the CCorp. In this case, the Court argued that an income tax adjustment of 29.4 percent was appropriate and should be applied to the profits of the company. The income tax adjustment was less than the corporate income tax rate assumed by the respondent's expert, and effectively the Court ruled in favor of an SCorp having some level of value premium over the CCorp (Barr 2014).
2. In the Chapter 7 *bankruptcy case* of *Bank of America, N.A. v. Veluchamy*,[2] the defendant allegedly did not make payments on its loans to Bank of America and instead transferred
?3 millions of dollars in assets to children of the shareholders. One of the main disputes in the case was assessing the value of the defendant's business, which was an SCorp. Bank of America's expert decided not to tax affect the company's income. He explained that whether and how to account for the taxation applicable to SCorp was a matter of debate in

[1] Delaware Open MRI Radiology Associates, P.A. v. Kessler, et al., 2006 Del. Ch. LEXIS 84.
[2] Bank of America, N.A. v. Veluchamy (In re Veluchamy), 2014 Bankr. LEXIS 5106 ().

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the valuation community. Moreover, he suggested that multiple decisions from the U.S. Tax Court have held that it is inappropriate to reduce the value of an SCorp by applying CCorp income tax rates. The Court ruled in favor of Bank of America, and the earnings of the SCorp were not tax taxed.

3. In the *divorce* proceedings of V*icario v. Vicario,*[3] the Rhode Island Supreme Court considered whether a lower court properly rejected a tax adjustment in computing the value of a professional practice. The husband held a 50.0 percent interest in an actuarial consulting business, which was designated as an SCorp. The husband's expert utilized the same general methodology as the wife's expert, but he applied a CCorp income tax rate to the business profits. The wife's expert determined that a hypothetical CCorp income tax was inappropriate because the corporation did not actually pay this tax. The magistrate adopted the valuation proposed by the wife's expert. On appeal, the husband argued that the magistrate made a mistake when it rejected the valuation proposed by his expert. The Supreme Court disagreed, suggesting that the application of a CCorp tax to profits of the business is incorrect based on case law.
4. In the *tax case* of *Gross v. Commissioner*,[4] the minority interests of G&J Pepsi-Cola Bottlers, Inc. were valued. The taxpayer's expert argued that the SCorp earnings of G&J should be reduced by the CCorp tax rate. The IRS's expert took the opposing position, suggesting that there was no basis for reducing the amount of the profits by a hypothetical CCorp income tax rate. The court ultimately ruled in favor of the IRS.
5. In the New York *dissolution* case of *Ferolito v. Arizona Beverages USA LLC*,[5] John M. Ferolito and Dominick J. Vultaggio each owned 50.0 percent of the stock of Arizona Beverages USA LLC. In this case the defendant attempted to purchase the shares of the plaintiff. Each shareholder had their own valuation expert. The defendant's expert suggested that a CCorp tax rate should not be applied, while the plaintiff's expert suggested the opposite. The court argued that due to Arizona Beverages' status as an SCorp, it should be valued without any hypothetical CCorp income taxes applied.
6. In the *tax* case of the *Estate of Gallagher v. Commissioner*,[6] the decedent Gallagher owned a 15.0 percent share in a mixed media company. In 1996, the company converted to an SCorp. The company's president and CEO appraised the decedent's 15.0 percent share at $34.9 million. The IRS disagreed with this value and asserted that the fair market value of decedent's shares was $49.5 million. The financial experts on each side of the case disputed several key categories including tax affecting the earnings of the company. The IRS expert did not apply a CCorp tax rate. The taxpayer's expert applied a 40.0 percent corporate income tax rate to the profits of the company. In this case, the court agreed that to tax affect the profits of an SCorp was inappropriate—"we will not impose an unjustified fictitious corporate tax rate burden on PMG's future earnings."
7. In the *divorce* case of *Bernier v. Bernier*,[7] a husband and wife owned two supermarkets, each owning 50.0 percent. The supermarkets were both designated as an SCorp. The husband's expert applied a CCorp tax rate to the value of the supermarkets, and the wife's

[3] Kathleen Vicario v. Paul Michael Vicario, No. 2005-244-Appeal (R.I. June 29, 2006).
[4] Gross v. IRS Commissioner, T.C. Memo 1999-254, aff'd, 272 F.3d (6th Cir. 2001).
[5] Ferolito v. Arizona Beverages USA LLC, 2014 NY Slip Op 32830(U) Supreme Court, Nassau County.
[6] Estate of Gallagher v. Commissioner, T.C. Memo. 2011-148, 2011 WL 2559847, Federal Court, U.S. Tax Court.
[7] Bernier v. Bernier, 449 Mass. 774, 799 (2007).

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TABLE 1

Court Positions on Tax Rate Applied to SCorps Relative to Plaintiff and Defendant Expert

Case	Plaintiff	Defendant	Court Ruling
1	0.00%	40.00%	29.40%
2	0.00%	38.00%	0.00%
3	0.00%	> 1%	0.00%
4	40.00%	0.00%	0.00%
5	0.00%	43.50%	0.00%
6	39.00%	0.00%	0.00%
7	0.00%	35.00%	35.00%
8	25.00%	38.70%	38.70%

expert did not. The court ruled in favor of the husband's expert, arguing that the profits of the supermarkets should have a CCorp tax rate applied.

8. In the New York Superior Court case of *Digeser v. Flach*,[8] the plaintiff's expert applied a 25 percent SCorp income tax rate, assuming a potential buyer would change the company's CCorp status to SCorp status to avoid double taxation, whereas the defendant's expert applied a CCorp tax rate of 38.7 percent. In this decision, the court adopted the CCorp tax affected rate of 38.7 percent.

The cases above were chosen to provide a view into the different types of cases, court venues, company size, and corporate structures and the various value arguments made from the bench. A summary of these aforementioned decisions is presented in Table 1. In some cases, the courts suggest that is appropriate to provide a CCorp tax rate to an SCorp valuation, and in other cases they argue the contrary. In almost all cases, there is no reference to empirical studies or observations, despite various tax, accounting, finance, and economic professionals analyzing this subject in fair detail.

III. THE EMPIRICAL RESEARCH

For instance, DiGabriele (2008, 2010), while using the market approach to valuation, compares the values of SCorps to CCorps, suggesting that an SCorp transaction premium does indeed exist, although the premium goes up or down based on various moderating factors. The author analyzes 4,392 private merger and acquisition transactions that occurred between January 2000 and November 2006. The data were obtained from the Pratt's Stats private transaction database. Using a multi-regression model, DiGabriele advocates that an SCorp premium is moderated by the type of buyer, the level of sales for the company under analysis, and the type of ?4 sale. He suggests that private buyers are more willing to pay a premium for a company, when compared to public company buyers. Second, the author suggests that companies that are purchased under an asset sale will trade at a premium to those purchased under a stock sale, and finally that SCorp premiums increase when the company under analysis has greater levels of net sales. Similar observations have been identified by Denis and Sarin (2002), Erickson and Wang

[8] Digeser v Flach, No. 2382-13 Supreme Court, Albany County, November 5, 2015.

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?5 (2007), Erickson (2000), and Scholes et al. (2005). Although each of the authors employ different empirical methods, from multivariable regression, to propensity score matching, to the univariate comparison on deal multiples, the results share the same outcome; SCorps enjoy purchase price premiums over CCorps. DiGabriele (2012) compares SCorps and tax partnerships to conclude that there are differences in value depending on the level of sales and type of transaction, whether an asset or stock deal. This paper does not analyze CCorps, but rather extends the work in DiGabriele (2008, 2010) to compare different PTEs.

DiGabriele (2014) took the research further by comparing CCorps and SCorps by performing a simple regression on a sample of 20 transactions—ten SCorps and ten CCorps—that were matched in the same industry (two-digit SIC Code) and with similar gross sales. The conclusion of the analysis was that SCorps are not worth more than otherwise identical CCorps. DiGabriele (2014) supports Mattson, Shannon, and Upton (2002a), where they analyzed 2,000 transactions across 11 industry groups, concluding that SCorp values are the same as CCorp values.

IV. EXTENDING THE LITERATURE

We anticipate that there is room to push the SCorp premium debate forward, and add to the literature in a meaningful way. We identify that there is a gap in the literature. Almost all empirical work performed to date analyzes the value differential between the SCorp and CCorp, but almost exclusively overlooks the value of the LLC. Our approach discussed herein compares the M&A transaction multiples of CCorps to SCorps, and CCorps to LLCs, relying on private transaction data supplied by Pratt's Stats. We do not include any transactions where a public company was the acquiror of a private business nor where a public company was purchased. The research also examines substantially more transactions over a much longer horizon period, incorporating the periods of time analyzed by DiGabriele (2008, 2012, 2014) as well as Erickson and Wang (2007), plus extending the analyses to April 2019.

We propose that when private M&A transactions are in the same industry and of similar company size, the company type (CCorp, SCorp, or LLC) will have little statistical significance on the transaction multiple, building on the analysis in DiGabriele (2014). Principally, we are suggesting that there is no difference in transaction value between the CCorp and SCorp, and no difference between a CCorp and an LLC. The primary deal multiple that we rely on is the market value of invested capital to sales (mvic-to-sales); however, in our last analysis we take into consideration the market value of invested capital to earnings before interest taxes depreciation and amortization (mvic-to-ebitda) and the market value of invested capital to gross profit (mvic-to-
?6 gp). Our analysis is focused primarily on the mvic-to-sales multiple, considering this has been shown to be most effective metric for comparing deal multiples across legal structures (Mattson et al. 2002a). Mattson et al. (2002a) suggest that CCorps many times increase the wages to the working shareholders in an attempt to avoid paying CCorp income tax. Considering this, the mvic-to-ebitda may show skewed results. Similarly, the mvic-to-gp, although a metric based on sales, is most often incorrectly reported, considering the limited agreement among accounting profession-
?7 als on what should be reported as a cost of sale.

V. DATA OBSERVATION

To begin our analysis, we first downloaded all 29,148 M&A transactions in the Pratt's Stats database that occurred over the horizon period. All transactions where the buyer or seller was not an CCorp, SCorp, or LLC were removed—leaving 24,017 transactions to analyze. Next, we

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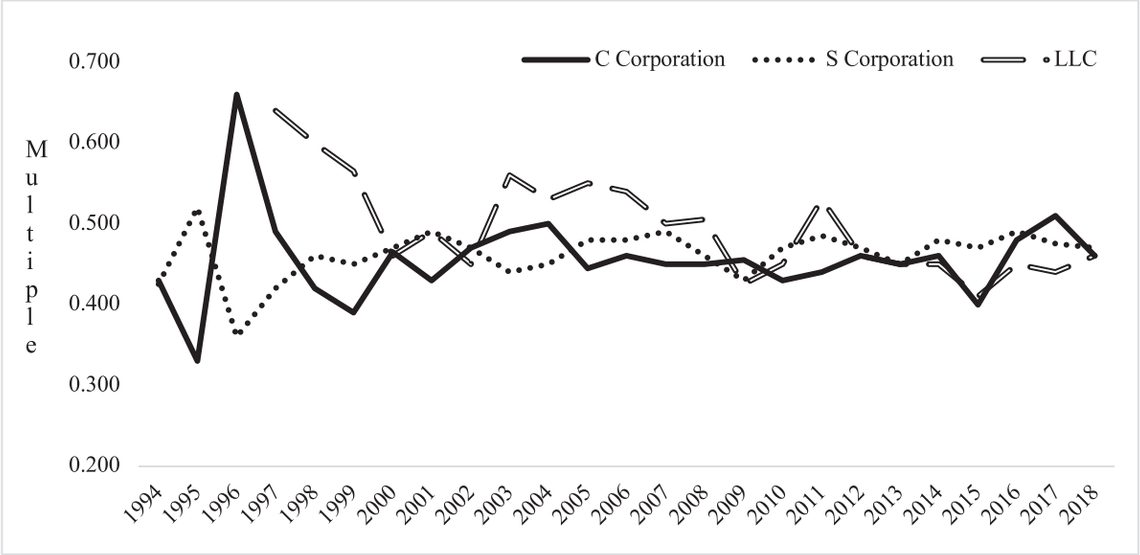
FIGURE 1
Median Mvic-to-Sales Multiples by Company Type
Private Acquirers (1992 to 2018)



removed transactions where the acquirer was a public corporation—leaving 18,115 transactions. The results were stored in a data frame and analyzed using Python. The transaction data were parsed by company type, buyer type, sales, gross profit, ebitda, mvic-to-sales multiple, mvic-to-gp multiple, and mvic-to-ebitda multiple.

From the initial review of the median multiples from January 1990 to April 2019, it was observed that there was a slight premium for SCorps as compared to CCorps and LLCs. The *median* mvic-to-sales multiples across the entire data set are 0.46 for CCorps, 0.47 for SCorps, and 0.46 for LLCs. It is also worth noting that the *mean* mvic-to-sales multiples suggest SCorps are the least valuable, with 0.59 for CCorps, 0.58 for SCorps, and 0.61 for LLCs. In the same dataset, it was observed that CCorps have decidedly lower net income margins than PTEs; median net income margins were 2.96 percent for CCorps, 10.41 percent for SCorps, and 10.41 percent and LLCs. Even when the data were segregated by industry, the average CCorp's net income margin was lower than PTEs more than 90.0 percent of the time for industries with sufficient observations. It is notable that on aggregate, buyers pay approximately the same multiple for each dollar of sales across company types, even though they have significant differences in net income margins. This is likely attributable to how CCorps pay excess compensation when compared to PTEs, which take distributions as excess compensation. Figure 1 presents the time-series view of the median mvic-to-sales multiples over the horizon period, identifying the relationship between a CCorp, SCorp, and LLC (company type). There is no consistent trend in value in terms of company type. Figure 2 depicts the number of transactions per year and by company type. Considering the relatively low number of transactions prior to 1997 of LLCs (less than five) and that LLCs were not afforded a favorable IRS tax ruling until 1996, any transaction prior to 1997 will be relatively meaningless to our overall analysis.

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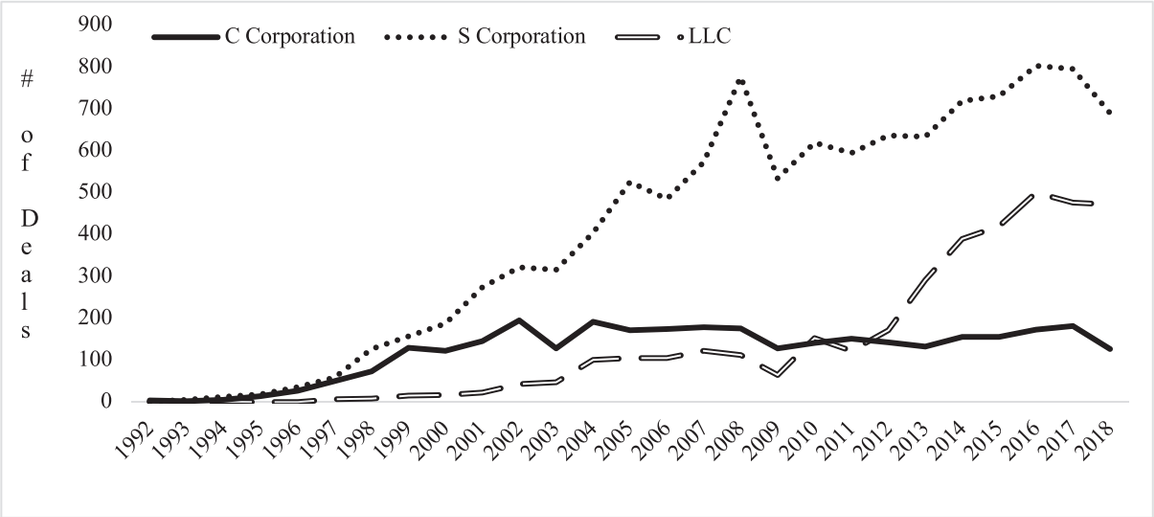
FIGURE 2
Number of Transactions by Company Type for Private Acquirers Only (1992 to 2018)



VI. PRELIMINARY ANOVA TESTS

As a preliminary assessment of the data, we performed a one-way analysis of the variance test (ANOVA). Before we performed the ANOVA, we grouped all private M&A transactions by company type (CCorp, SCorp, LLC) and removed all public acquirors from the dataset. Table 2 presents the minimum, maximum, median, and mean mvic-to-sales for all company types, across all years.

We estimate that the variability of the mvic-to-sales multiples between the company types will be the same as the variability within each discrete company type, signifying that the means will be approximately the same across company types. Should this estimate hold true, it would suggest that there is no real difference in M&A transaction value across company types.

Next, we performed the ANOVA test examining 10,642 transactions (after the removal of public company purchases of private companies), where the null hypothesis H0 (H0 = *CCorp* = *SCorp* = *LLC*) suggests that the mean of the mvic-to-sales will be the same across groups, where
?9 $\mu_1 = \mu_2 = \mu_3$, and where $\mu_1 = CCorp$, $\mu_2 = SCorp$, and $\mu_3 = LLC$.

In this test, the average mvic-to-sales multiples across the dataset were 0.592, 0.609, and
?10 0.579 for CCorp, LLC, and SCorp, respectively. The variances were 0.451, 1.656, and 0.286 for
?11 CCorp, LLC, and SCorp, respectively. The mean mvic-to-sales multiple based on the company type is $F(2, 18109) = 2.139$, $p > 0.05$. The results of the ANOVA test show that we were not able to reject the null hypothesis and that the differences in means between company types was not significantly different.

VII. INDUSTRY GROUPING

Understanding that various industry dynamics create transaction multiples that vary widely by industry, we now parse the data by first creating subgroups of these data based on the two-digit Standard Industrial Classification (SIC) for each industry represented in the dataset, for which the

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TABLE 2

Descriptive Statistics of All Transactions with Private Acquirers

	CCorp	LLC	SCorp
Mean	0.591	0.609	0.579
Median	0.460	0.460	0.470
Minimum	0.010	0.010	0.010
Maximum	10.890	66.670	15.890
Standard Deviation	0.671	1.287	0.534
Variance	0.451	1.656	0.285
Kurtosis	78.413	1,879.912	133.217
Skewness	7.160	38.423	7.704
Count	3,282.000	3,778.000	11,051.000

descriptive statistics are shown in Table 3. To test our assumption that industries matter, we first compare median net sales of the companies in the industry subgroup to the median mvic price for each transaction in the same subgroup. To test this assumption, we complete a standard univariable ordinary least squares regression of the yearly median net sales for all subgroups to
?12 the yearly median mvic price of the same subgroups. The R^2 of the industry subgroup analysis is 0.90, with a statistically significant p-value < 0.05. This is compared to the R^2 of median net sales
?13 to the median mvic price for the entire dataset of 0.31, and a p-value > 0.05. This analysis provides evidence that grouping data by industry is important when trying to understand the valuation parameters across company type. McGahan and Porter (1997) suggest that about 19.0 percent of the variability of profits is based on the industry in which they operate. Relying on the regression completed here, coupled with the McGahan and Porter (1997) research, we suggest that the private transaction data should be analyzed based on industry classification.

VIII. ANOVA TEST, AFTER CONTROLS

We perform a second ANOVA test, now comparing the mean of the mvic-to-sales by industry and company type. We estimate that the null hypothesis $H0_i$ ($H0_i = CCorp_i = SCorp_i = LLC_i$)

TABLE 3

Descriptive Statistics of Transactions Grouped by Two-Digit SIC Code (Private Acquirers)

	CCorp	LLC	SCorp
Mean	0.717	0.775	0.747
Median	0.651	0.663	0.674
Minimum	0.200	0.261	0.180
Maximum	2.454	3.190	2.305
Standard Deviation	0.353	0.439	0.359
Variance	0.125	0.193	0.129
Kurtosis	8.325	14.144	4.986
Skewness	2.231	3.166	1.896
Count	66.000	66.000	72.000

suggests that the mean of the mvic-to-sales in the industry (denoted *i*) will be the same across groups, where $\mu_{i1} = \mu_{i2} = \mu_{i3}$, and where $\mu_{i1} = CCorp_i$, $\mu_{i2} = SCorp_i$, *and* $\mu_{i3} = LLC_i$.

After segmenting the data by industry, we see a change in the averages across company types. The average mvic-to-sales multiples increase to 0.717, 0.75, and 0.747 for CCorp, LLC, and SCorp, respectively. Additionally, the variances decrease from the previous ANOVA test, with 0.125, 0.193, and 0.129 for CCorp, LLC, and SCorp, respectively. The mean mvic-to-sales multiple based on the company type is $F(2, 66) = 3.041$, $p > 0.05$. The results of the ANOVA test show that the mvic-to-sales means are not statistically different across groups. In other words, when analyzing all of the private transaction data across groups, even when controlling for industry and public deals, there continues to be no evidence that suggests that the mean mvic-to-sales has a statistical difference across the groups. It is also identifiable that when deals are analyzed by the mean industry mvic-to-sales multiple, the average deal multiples increase, while at the same time the inter and intragroup variance decrease as well.

The two ANOVA tests completed above have provided insight into the company type debate, suggesting that the mvic-to-sales multiples are not statistically different. However, as shown in above analyses, when industry segmentation is not taken into account, the CCorp appears to have multiples greater than the SCorp and the LLC. Contrarily, when the industry segmentation is added to the analysis, it seems clear that the average mvic-to-sales is greater for LLC, followed by SCorp, and then followed again by the CCorp.

IX. MATCHING ANALYSIS AND TESTING

In an effort to better understand if the company type actually matters in increasing the M&A transaction values, a matching analysis is completed. To begin the analysis, all Pratt's Stats transactions are grouped by industry. In each industry group, the purchased companies will include CCorp, SCorp, and LLC transactions. Each group will contain different-size transactions as well different company financial data, different deal closing dates, and different types of sales, including stock sales and asset sales. Once the data were parsed by industry, rules were developed and coded into Python, matching intra-industry transactions based on industry, size, and similar transaction sale time periods. The goal of the matching exercise was to match very similar intra-industry transactions based on company type, with the intent of comparing transaction multiples. The assumption is that financially similar companies, in the same industry, where transactions occurred around the same time, with the same deal type (stock deal, or asset deal) will garner mvic-to-sales multiples that are relatively close in nature. To do this, we match similar CCorp transactions to SCorp transactions, and similar CCorp transactions to LLC transactions.

In order for a match to be identified in Python, the following procedures are conducted and the identified conditions met:

1. Group transactions by industry;
2. It must not include a public company purchaser;
3. Match transactions between the CCorp and SCorp, and between the CCorp and LLC;
4. Match transactions based on the deal type (asset deal or stock deal);
5. The deal closing date between the two transactions is less than five years; and
6. The sales and gross profits between the companies in the transactions are not greater than 20 percent more or less of each other.

In each industry group, every transaction is compared against every other transaction in a combinatorial process, given by the *n* choose *r* function,

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$$C(n,r) = \frac{n!}{r!(n-r)!}$$

The variable n represents the total number of permutations of n objects, and r represents the number of items being chosen at a time, where $n \geq r \geq 0$. To complete the analysis 15,174,158 mathematical attempts at creating the appropriate matches were conducted—written mathematically as: for, I_1, we matched C_1 to P_1, when:

?16

$$C_{1v} = P_{1v} \wedge |C_{1d} - P_{1d}| < 5 \wedge \frac{|C1s - P1s|}{C1s} < X \wedge \frac{|C1g - P1g|}{C1s} < X$$

where:

$C =$ a CCorp transaction;
$P =$ a non-CCorp transaction;
$I =$ a TargetSICGeneral;
$v =$ the transaction type (asset or stock);
$d =$ the year of the sale date of the transaction;
$s =$ net sales;
$g =$ gross profit; and
$X =$ a percent threshold to compare (1 percent, 5 percent, 10 percent, 15 percent, 20 percent).

After running this code, we had instances where a specific transaction was matched with more than one other transaction. We narrowed these matches down by selecting the *match* with the shortest sale date distance and then, the smallest net sales distance. Table 4 presents the number of matches identified, when all conditions are met, but varied based on the distance of net sales and gross profits between the underlying companies in the transaction.

As shown in Table 4, the maximum number of transaction matches were 2,090 at the 20.0 percent threshold, and the minimum number of transaction matches were 492 at the 1.0 percent sales threshold. Each match represents two transactions. The transaction matches at the 1.0 percent threshold are those transactions that are more similar when compared to the transactions at the 20.0 percent sales threshold. It becomes clear that among matched transactions, there is no trend in CCorps being less valuable than PTEs, rather it is a virtual toss up, with the percent of times a CCorp is more valuable oscillating above and below 50 percent by less than a maximum of 4.0 percent.

Across the various sales percent thresholds (1 percent, 5 percent, 10 percent, 15 percent, 20 percent) the results remain similar. As shown in Table 5, a review of the mean mvic-to-sales multiple does not suggest an SCorp premium. The one observation that rings consistent across all matches and in all sales thresholds is the notion that there is no evidence of a persistent premium present in any company type as compared to another. Due to some of the extreme ebitda and gross profit transactions, we compare the median mvic-to-gp and the mvic-to-ebitda. There are limited differences between mvic-to-gp median, when comparing the CCorp to the LLC and the CCorp to the SCorp. However, when analyzing the median mvic-to-ebitda multiples between the CCorp and LLC and the CCorp and the SCorp it also appears that there is a visible difference with the CCorp showing mvic-to-ebitda premiums over the SCorp and the LLC.

X. DISTRIBUTION OF THE MATCHED TRANSACTIONS AT THE 1.0 PERCENT THRESHOLD

Upon studying the results from the matching analysis, we wanted to further examine the tightest transaction matches in the 1.0 percent threshold scenario. To do this, we fit the data to

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TABLE 4

Statistics of Matched Transactions across Net Sales and Gross Profit Distance

		Distance of Net Sales and Gross Profit				
Multiple	**Descriptive Statistic**	**1%**	**5%**	**10%**	**15%**	**20%**
mvic-to- sales	No. of Matches	492	1,398	1,841	2,004	2,090
	No. of CCorp and LLC Matches	146	338	413	427	428
	No. of CCorp > LLC	74	172	209	208	220
	Percent of CCorp > LLC	50.7%	50.9%	50.6%	48.7%	51.4%
	No. of CCorp and SCorp Matches	346	1,060	1,428	1,577	1,662
	No. of CCorp > SCorp	165	505	667	731	788
	Percent of CCorp > SCorp	47.7%	47.6%	46.7%	46.4%	47.4%
mvic-to-gp	No. of Matches	492	1,398	1,841	2,004	2,090
	No. of CCorp and LLC Matches	146	338	413	427	428
	No. of CCorp > LLC	74	176	213	215	224
	Percent of CCorp > LLC	50.7%	52.1%	51.6%	50.4%	52.3%
	No. of CCorp and SCorp Matches	346	1,060	1,428	1,577	1,662
	No. of CCorp > SCorp	163	503	667	738	788
	Percent of CCorp > SCorp	47.1%	47.5%	46.7%	46.8%	47.4%
mvic- to-ebitda	No. of Matches	492	1,398	1,841	2,004	2,090
	No. of CCorp and LLC Matches	146	338	413	427	428
	No. of CCorp > LLC	74	177	225	231	237
	Percent of CCorp > LLC	50.7%	52.4%	54.5%	54.1%	55.4%
	No. of CCorp and SCorp Matches	346	1,060	1,428	1,577	1,662
	No. of CCorp > SCorp	163	507	693	780	823
	Percent of CCorp > SCorp	47.1%	47.8%	48.5%	49.5%	49.5%

normal distribution curves, which are shown on Figures 4 and 5. We removed matches with net sales less than $100,000 where we observed mvic-to-sales multiples above 10.0 and that were inconsistent with the rest of dataset—leaving 476 matches. Figure 3 shows the normal distribution of CCorps, which were specifically matched to LLCs, and Figure 4 shows the specific CCorp and SCorp matches. Prior to fitting the data to a normal distribution, we observed higher peaks for CCorp multiples with positive kurtosis (2.84) and positively skewed (1.31). LLC multiples had a much higher kurtosis (15.10) or indications of more extreme multiples and was also positively skewed (3.09). The means of the sample multiples were 0.50 for the CCorp and 0.51 for the LLC, with the CCorp having a lower standard deviation and higher median. The curve shown in Figure 3 further highlights the lack of evidence for a PTE premium, showing that, for example, assuming normally distributed data, CCorps that are one standard deviation from the mean have a 68.0 percent probability of having an mvic-to-sales multiple of at least 0.88, whereas LLCs that were matched have the same 68.0 percent probability of a multiple of at least 0.60. Furthermore, when looking at a two standard deviation event, there is a 95.0 percent probability that CCorps have a multiple of at least 0.20 as compared to 0.13 for LLCs.

When performing the same analysis and looking at the matches between CCorps and SCorps, the results showed more similarity. CCorps that are one standard deviation from the mean have a mvic-to-sales multiple of 0.59, whereas SCorps that were matched have a multiple of 0.54. There is a 95.0 percent probability that CCorps have a multiple of at least 0.15 and the same

TABLE 5

Statistics of Matched Transactions across Net Sales and Gross Profit Distance

Company Type	Descriptive Statistic	Distance of Net Sales and Gross Profit 1%	5%	10%	15%	20%
CCorp	mvic-to-sales: mean	0.57	0.54	0.54	0.54	0.55
	mvic-to-sales: median	0.48	0.43	0.43	0.43	0.44
	mvic-to-gp: mean	0.70	0.86	0.92	0.95	0.99
	mvic-to-gp: median	0.59	0.68	0.72	0.73	0.75
	mvic-to-ebitda: mean	58.11	44.69	31.59	29.62	71.89
	mvic-to-ebitda: median	3.62	4.10	4.09	4.29	4.34
LLC	mvic-to-sales: mean	0.60	0.54	0.53	0.54	0.55
	mvic-to-sales: median	0.49	0.45	0.44	0.44	0.45
	mvic-to-gp: mean	0.75	0.88	0.94	0.97	0.99
	mvic-to-gp: median	0.62	0.71	0.76	0.77	0.78
	mvic-to-ebitda: mean	15.42	20.54	17.04	17.78	12.00
	mvic-to-ebitda: median	3.27	3.60	3.93	3.80	3.86
SCorp	mvic-to-sales: mean	0.52	0.57	0.60	0.64	0.62
	mvic-to-sales: median	0.40	0.48	0.48	0.48	0.45
	mvic-to-gp: mean	0.63	0.86	0.96	1.00	0.96
	mvic-to-gp: median	0.55	0.74	0.79	0.79	0.74
	mvic-to-ebitda: mean	33.00	10.15	8.05	15.25	15.68
	mvic-to-ebitda: median	3.07	2.98	2.99	3.10	3.16

FIGURE 3

Normal Distribution of Mvic-to-Sales Multiple for the 1 Percent Sales Distance (CCorp versus LLC)

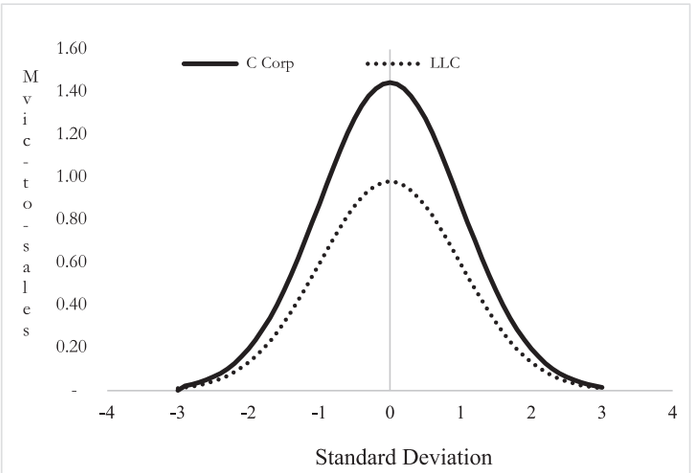

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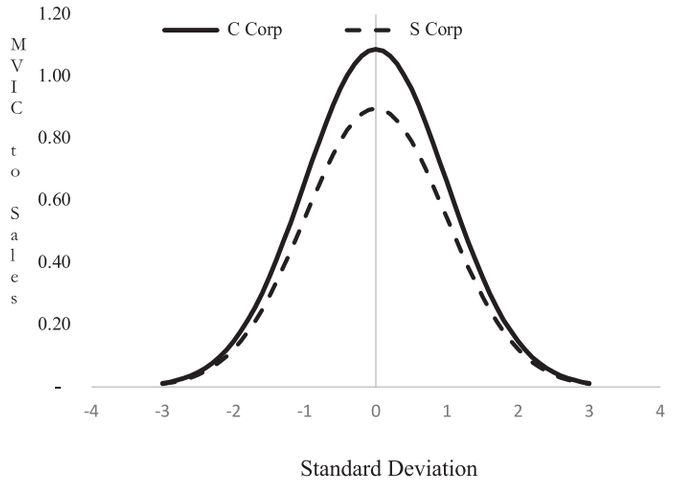
FIGURE 4
Normal Distribution of Mvic-to-Sales Multiple for the 1 Percent Sales Distance (CCorp versus SCorp)



probability that SCorps have a multiple of 0.12. Once again, CCorps had a lower standard deviation and overall mean with a higher median. In this match, kurtosis was higher for CCorps (16.69) than SCorps (10.62), and both were positively skewed, 2.95 and 2.61, respectively.

XI. LINEAR REGRESSION AND NET SALES TO MVIC PRICE

The last analysis we conducted was to regress net sales to mvic price from the 1.0 percent dataset of our matching analysis, or the 476 matches. The graphical representation of the regression is shown in Figure 5 and is shown with outliers removed. The conclusion of the regression with and without outliers was largely the same, however, coefficients were clearly impacted due to outliers. The net sales coefficient for CCorps (0.59) is greater than that of LLC (0.50) and SCorps (0.52), suggesting that within this controlled dataset, for a given level of net sales in a transaction, the mvic price will be greatest for a CCorps. The regression for each company type had p-values < 0.05, demonstrating statistical significance in the conclusion. We also present Figure 6, which is the same analysis without adjusting for outliers.

XII. CONCLUSION

In this analysis, we gathered private M&A transaction data dating back to January 1990 and up until April 2019 to further examine the existence of an SCorp premium. When grouping the transaction data by similar industry and removing public acquirers, we were unable to identify statistically significant differences in the means by way of an ANOVA test. Furthermore, we conducted a programmatic matching analysis in order to match a CCorp transaction with its most comparable SCorp and LLC transactions based on a litany of conditions. The results of this analysis are conclusive from the perspective that there is no evidence of an SCorp or LLC premium in this dataset. These results build upon and are consistent with the conclusions in DiGabriele (2014), where matched transactions were compared in a sample and no SCorp premium was found. DiGabriele (2008, 2010) found that there was an SCorp premium; however, that analysis

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FIGURE 5
Linear Regression of Net Sales to Mvic Price for 1 Percent Matching (Outliers Removed)

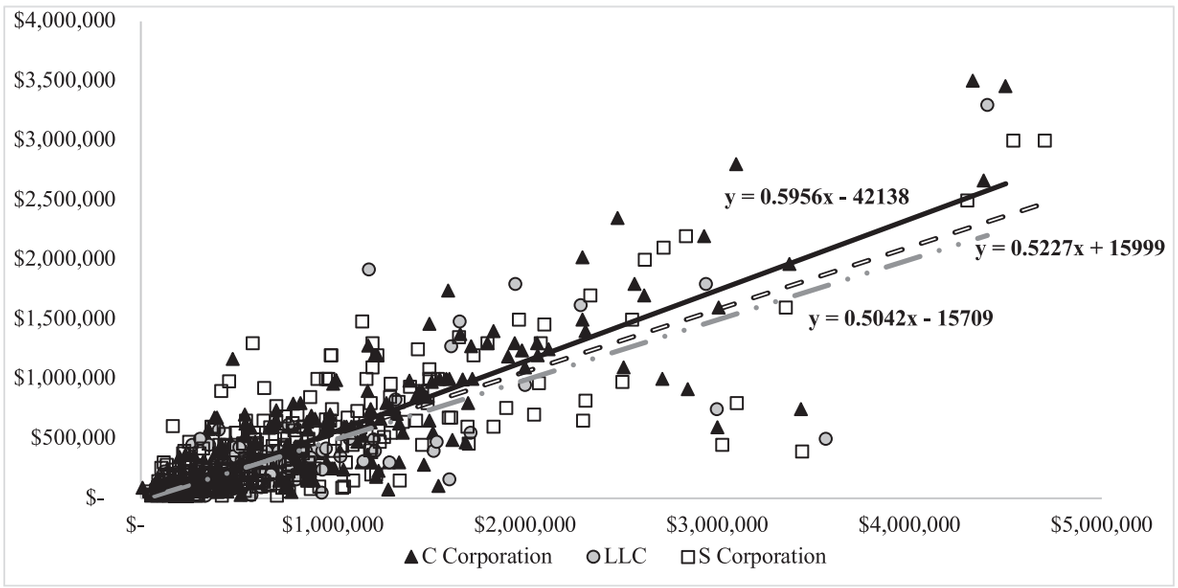
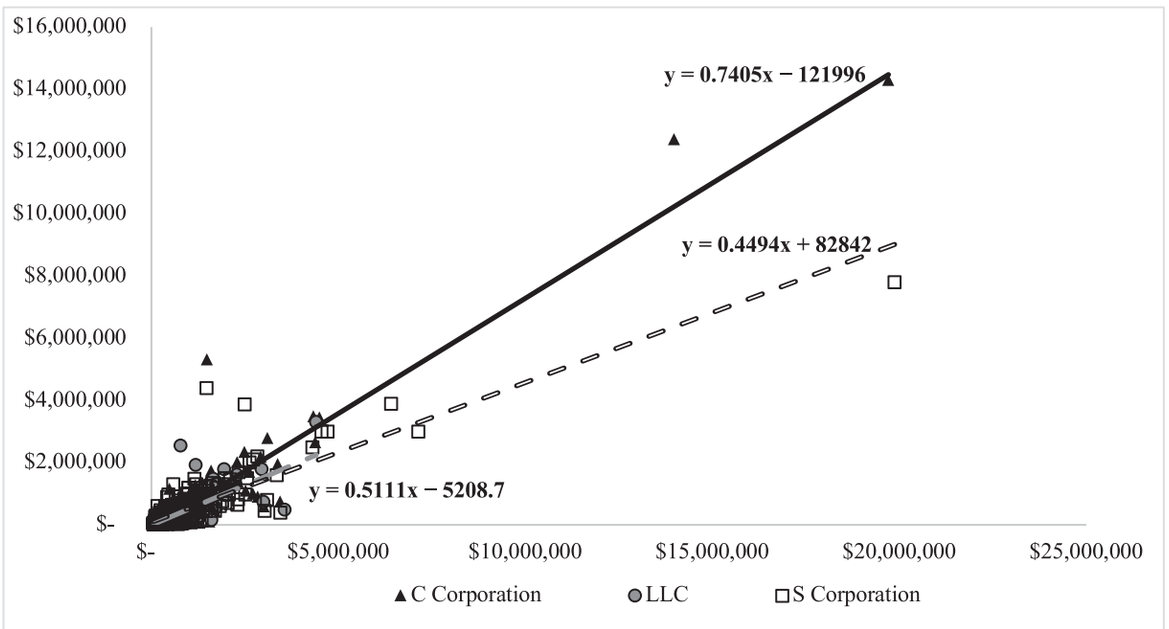


FIGURE 6
Linear Regression of Net Sales to Mvic Price for 1 Percent Matching (with Outliers)



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was limited to six years, did not focus exclusively on private acquirers, and did not group transactions by industry. We further examined the closest matches from our matching analysis by fitting the data to a normal distribution curve and conducting a regression analysis, both of which actually showed premiums for CCorps rather than PTEs.

Further research in this area should be continued especially as transactional data post the Tax ?18 Cuts and Jobs Act (TCJA) passage, which went into effect January 1, 2018. The TCJA is a federal tax overhaul that made a number of adjustments to CCorps and PTEs from a tax perspective, not limited to bringing the corporate tax down to a flat 21.0 percent and including a 20.0 percent deduction of PTE income. Considering that this is the largest change to corporate and individual tax rates perhaps since the tax changes enacted under President Ronald Reagan in the 1980s, the impact on multiples will be interesting; however, given our analysis, it is likely that any change in valuation across company type is likely to be random rather than persistently trending to one company type as compare to another.

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