

VALUATION

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Private Company Discount Studies and  
Application to Non-Marketable Interests

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One of the more challenging elements of private company valuation analysis is to effectively communicate the value of a non-marketable interest. Specifically, is there a premium paid for marketability or a discount for lack of marketability?

Empirical evidence provided by restricted stock studies and initial public offering studies suggest there is a discount for lack of marketability. Those studies are based on publicly traded company information. However, based on analysis provided by several private company discount studies, there may be a more transparent means to arrive at a discount for lack of marketability. These private company discount studies provide evidence that show that private companies typically sell at lower pricing multiples than public companies. This may be because private companies are illiquid and therefore sell at transaction multiples that reflect this illiquidity or lack of marketability. This discussion will summarize the empirical studies that quantify the private company discount.

If applied judiciously, the private company discount can help an analyst support the selection of a discount for lack of marketability or it could be used to support the selection of a financial fundamental multiple based on a market approach.

### INTRODUCTION

Valuation professionals continually improve and evolve their valuation work product to reflect current market-based theoretical guidance. This guidance is communicated through books, articles, studies, white papers, and academic presentations.

Recently, I reviewed newer theoretical guidance related to the discount for lack of marketability (DLOM). Typically, in order to support DLOM decision making, valuation analysts consider studies related to restricted stock offerings and initial public offerings. Many of the restricted stock and initial public offering studies that are commonly cited are considered, by some, to be “dated.” However, even though these studies were performed several years ago, I consider these restricted stock and initial public offering studies to be relevant. In fact, discount indications provided by older restricted stock studies may be more relevant than the more current restricted stock studies discount indications. That is primarily because the Securities and Exchange Commission changed its Rule 144(a) holding period requirement, and not because of enhanced liquidity of unregistered public company restricted stock.

Because restricted stock and initial public offering studies are primarily based on studies of public companies and not

private companies, some professionals argue that a more direct method may be appropriate. Of course, a private company security valuation analysis will often consider additional methods in order to quantify or qualitatively address DLOM selection.

A method that is not as commonly discussed within the valuation profession is the use of empirical studies that derive a private company discount (PCD). The PCD provides empirical data that a valuation analyst may consider as support for a DLOM selection. There are several published PCD DLOM studies. Study authors suggest that PCD indications provide a more transparent indication of the DLOM faced by investors in private companies. In the following paragraphs, I provide a discussion of some of these PCD studies.

It is important to note that there are two types of PCD studies: the multiples approach and the acquisition approach. Both approaches compare financial fundamental transaction multiples (FFTM)—such as value to earnings before taxes depreciation and amortization (EBITDA) and value to sales—to derive a PCD.

The multiples approach is based on using a guideline publicly traded company in order to compare a public company FFTM to a private company acquisition transaction FFTM. The acquisition approach is based on

using FFTM involving an acquisition transaction of a public company to compare to FFTM of a private company acquisition transaction.

## THE MULTIPLES APPROACH

The purpose of one such study, the John K. Paglia and Maretno Harjoto study (Paglia study), is to determine if a PCD can be quantified based on a multiples approach analysis.<sup>1</sup> In this section, I discuss the Paglia study and its conclusions related to the PCD.

### PAGLIA STUDY (2010)

The Paglia study's quantification of the PCD is subject to the presumption that publicly traded market prices approximate controlling interest values. This condition is based on the premise presented by Eric Nath.<sup>2</sup> If true, then the merger and acquisition (M&A) transaction values of private companies represent a similar level of value to publicly traded company values, since each value indication is based on control level pricing indications.

In order to quantify the PCD, or DLOM as Paglia refers to it, the Paglia study relied on the following four analytical procedures:

#### Screening Criteria

Screening criteria were developed to identify privately held company M&A transactions. The Paglia study used the following methodology and screening criteria.

1. Privately held company M&A transactions, as provided in the Pratt's Stats database, occurring between 1993 to 2008
2. M&A company targets with annual net revenues of at least \$10 million
3. M&A company targets located in the U.S.
4. Companies classified as utilities, financial services, and other service related companies were excluded

#### Matching Criteria

Matching criteria were developed to identify publicly traded guideline companies to match to the privately held companies involved in M&A transactions. The Paglia study identified publicly traded companies listed on the AMEX, NYSE, and NASDAQ and matched them to privately held companies based on a two-step procedure.

1. First, matching was performed based on industry classification, as represented by six digit North American Industrial Classification System (NAICS) code matching.
2. Second, financial fundamentals of net sales and EBITDA were used to identify matches.

Based on the matching criteria, the Paglia study identified 674 matched pairs based on annual net sales and 635 matched pairs based on EBITDA.

#### Market Value of Invested Capital

Market value of invested capital (MVIC) pricing multiples to (1) net sales, and (2) EBITDA pricing multiples were calculated for the matched pairs.

#### Matching MVIC-to-Sales and MVIC-to-EBITDA Pricing

The study compared the matched pairs based on MVIC-to-sales and MVIC-to-EBITDA pricing multiple indications. The differences between the matched pairs yielded DLOM estimates. In general, the Paglia study found that all measures of market multiples—including MVIC/Sales, MVIC/Gross Profit, etc. for private companies were significantly less than the same multiples for publicly traded companies. That finding is generally consistent with the acquisition approach studies. In contrast, the study found that mean and median profitability measures—i.e., return on equity, net profit margins, etc.—for private companies were generally equal to or greater than the matched publicly traded businesses.

The following two equations were used to calculate the private company DLOM estimates:<sup>3</sup>

1.  $DLOMSALE (\%) = [1 - (MVIC/Sale \text{ for private firm}) / (MVIC/Sale \text{ for public firm})] \times 100$

Based on DLOMSALE calculations, private company transaction multiples were sixty-seven percent lower, on average, than the similar publicly traded companies. They were also seventy-three percent lower than similar public companies based on median transaction multiple indications.

2.  $DLOMEBITDA (\%) = [1 - (MVIC/EBITDA \text{ for private firm}) / (MVIC/EBITDA \text{ for public firm})] \times 100$

<sup>3</sup> The Paglia study excluded outlier DLOM indications. That is, the study only relied on DLOM indications that fell between 0 percent and 100 percent.

<sup>1</sup> John K. Paglia and Maretno Harjoto, "The Discount for Lack of Marketability in Privately Owned Companies: A Multiples Approach," *Journal of Business Valuation and Economic Loss Analysis* 5, no. 1 (2010): Article 5.

<sup>2</sup> Eric W. Nath, "Control Premiums and Minority Interest Discounts in Private Companies," *Business Valuation Review*, June 1990, 39-46.

**TABLE 1:**  
 PAGLIA STUDY  
 PRIVATE COMPANY DISCOUNTS ACROSS INDUSTRY SECTORS  
 STUDY RESULTS FOR TRANSACTIONS OCCURRING BETWEEN 1993-2008

NAICS Code-Industry Sector	2 Digit NAICS code (#)	Number of Businesses (#)	PCD DLOM Based on MVIC/Sales (%)	Number of Businesses (#)	PCD DLOM Based on MVIC/EBITDA (%)
Mining	18	18	70.40	22	67.00
Construction	22	22	58.97	35	52.37
Manufacturing	31-33	257	71.79	245	76.46
Wholesale Trade	42	46	65.73	47	64.28
Retail Trade	44-45	58	66.65	44	57.43
Transportation	48-49	17	51.81	25	37.42
Information	51	92	88.91	65	83.65
Professional Services	54	84	81.20	51	88.70
Staff Support & Waste Management	56	34	74.10	19	71.43
Healthcare	62	26	43.79	35	80.22
Art & Entertainment	71	4	59.12	4	58.81
Accommodation & Food Service	72	15	62.82	18	76.01
Total Number of Companies		673		610	

Based on DLOMEBITDA calculations, private company transaction multiples were sixty-six percent lower on average than the similar publicly traded companies and, seventy-two percent lower than similar public companies based on median transaction multiple indications.

The Paglia study presented two-digit NAICS industry category sector PCD indications. This information is presented in Table 1.

As presented in Table 1, companies in the information and professional services sectors had the largest PCD indications. In contrast, companies in the transportation sector had the lowest PCD indications.

In addition to the matched pairs analysis, the Paglia study examined factors that influence the DLOM. More specifically, the study investigated the influence of size, profitability,

financial distress, purchase and purchaser characteristics, market liquidity, market volatility, time period, and industry affiliation on observed PCD. In order to study these influential factors, the Paglia study developed the following hypotheses:

1. Larger firms have lower discounts.
2. Private firms with positive profits have lower discounts.
3. Private firms that are bought by strategic buyers have lower discounts compared to those that are bought by financial buyers.
4. Firms exhibiting greater risk of financial distress have higher discounts than those with lower levels of financial risk.
5. Discounts are larger due to decreased liquidity of public markets.
6. Discounts are larger when public markets are more volatile.

A multivariate regression analysis was used to test the Paglia study hypotheses. In general, the regression results support several of the Paglia hypotheses. The results indicated that private firms with a larger book value of assets, positive net income, and lower probability of financial distress (that is, firms with higher Altman's Z scores) had significantly lower PCD indications.

In contrast, the regression results indicated that the buyer type (publicly traded company buyer or private company buyer), transaction type (asset purchase or stock purchase), and organization type (C corporation or pass-through entity) do not influence PCD indications. Furthermore, the regression results did not support the hypothesis that greater discounts are observed when market volatility increases and indicated only mild support for greater discounts when market liquidity decreases.

### THE ACQUISITION APPROACH

In this section, I discuss acquisition approach studies and PCD evidence. I specifically focus on three acquisition approach studies, which include the Koeplin study, the Kooli study, and the Officer study.

Other acquisition approach studies not extensively discussed in this article include Block and De Franco et al.<sup>4</sup> I only mention these studies in passing, and I include a brief discussion in the summary and conclusion of this article, because these studies are considered to be similar to other PCD studies. According to the Paglia study, the Block study is an extension of the Koeplin study using more current dates—that is, it was conducted over the 1999-2006 time period. The De Franco study is considered to be similar to the Officer study. That is, it uses similar two-digit standard industrial classification (SIC) code matching procedures.

### KOEPLIN STUDY (2000)

Several studies and papers document PCD evidence based on the acquisition approach. One such study titled "The Private Company Discount" was authored by John

Koeplin, Atulya Sarin, and Alan C. Shapiro (the Koeplin study).<sup>5</sup> The Koeplin study was conducted to determine if transaction consideration paid for private companies was less than the transaction consideration paid in transactions involving matched publicly traded businesses. The study presented results from two analyses based on domestic transactions and foreign transactions.

In order to conduct the analyses, Koeplin identified matched pairs (one private company transaction and one public company transaction) based on four-digit industry SIC code analysis, proximity of transaction—within twelve months of one another, and size—based on sales revenue. The search was conducted to identify transactions that occurred between 1984 and 1998. The study identified transactions after removing financial firm acquisitions, regulated utilities business acquisitions, and acquisitions involving less than a controlling interest.

The Koeplin study identified eighty-four domestic company matched pair transactions and 108 foreign company matched pair transactions using the SDC Merger and Acquisition Database (SDC).

After identifying matched pair transactions, Koeplin calculated four Enterprise Value transaction multiples.<sup>6</sup> The PCD calculation was based on the percentage difference between the mean and median indications of the transaction multiples. This calculation was performed for the four transaction multiples of the private company transaction multiples and public company transaction multiples.

The results of the Koeplin study, for the eighty-four domestic company and the 108 foreign company-based transaction matched pairs, are presented in Table 2.

<sup>5</sup> John Koeplin, Atulya Sarin, and Alan C. Shapiro, "The Private Company Discount," *Journal of Applied Corporate Finance*, Volume 12 Number 4, Winter 2000.

<sup>6</sup> Enterprise value = number of targeted shares multiplied by offering price plus the book values of (1) short-term debt, (2) straight debt, (3) convertible debt, and (4) preferred stock less marketable securities.

<sup>4</sup> Stanley Block, "The Liquidity Discount in Valuing Privately Owned Companies," *Journal of Applied Finance*, Fall Winter 2007.

Gus De Franco, Ilanit Gavious, Justin Jin, and Gordon D. Richardson, "Do Private Company Targets that Hire Big4 Auditors Receive Higher Proceeds?" University of Toronto Working Paper, December 19, 2008.

**TABLE 2: KOEPLIN STUDY**  
PRIVATE COMPANY DISCOUNT ESTIMATE  
STUDY RESULTS FOR TRANSACTIONS OCCURRING BETWEEN 1994 AND 1998

	PRIVATE COMPANY TRANSACTION MULTIPLES		PUBLIC COMPANY TRANSACTION MULTIPLES		PRIVATE COMPANY DISCOUNT ESTIMATE [A]	
	Mean	Median	Mean	Median	Mean	Median
Domestic Company Transaction Data						
Enterprise Value/EBIT [b]	11.76	8.58	16.39	12.37	28.26	30.62
Enterprise Value/EBITDA [c]	8.08	6.98	10.15	8.53	20.39	18.14
Enterprise Value/Book Value	2.35	1.85	2.86	1.73	17.81	-7.00
Enterprise Value/Sales	1.35	1.13	1.32	1.14	-2.28	0.79
Foreign Company Transaction Data						
Enterprise Value/EBIT	16.26	11.37	28.97	12.09	43.87	5.96
Enterprise Value/EBITDA	11.96	7.10	25.91	9.28	53.85	23.49
Enterprise Value/Book Value	2.41	1.35	3.70	1.68	34.86	19.64
Enterprise Value/Sales	2.63	1.35	4.59	1.63	42.70	17.18

[a] Private Company Discount = 1 - (private company transaction multiple + public company transaction multiple).

[b] EBIT = Earnings Before Interest and Taxes.

[c] EBITDA = Earnings Before Interest, Taxes, Depreciation, and Amortization.

The study used a regression analysis to test statistical significance. The study results indicated that earnings multiples provided statistically significant guidance for estimating the PCD, but revenue multiples did not provide the same level of statistical significance.

The Koeplin study concluded that private domestic companies sold at multiples that were twenty percent to thirty percent lower than the acquisition multiples of guideline public companies. Foreign-based private companies sold at multiples that were lower by forty percent to fifty percent from the acquisition multiples of guideline public companies.

### KOOI STUDY (2003)

The Kooli study, as published in *The Journal of Private Equity*, provides additional PCD evidence.<sup>7</sup> The Kooli study compares private company transaction multiples, much like the Koeplin study, to public company transaction multiples. One of the primary differences of the Kooli study is the use of a portfolio of guideline

public company transactions as the public company comparison metric and not just a single transaction. According to Kooli, picking one public company transaction for comparison, as the Koeplin did, is a potentially noisy procedure for matching firm risk characteristics. Therefore, the Kooli study developed a portfolio of public companies to use for comparison. This portfolio approach methodology is credited to the work of Brav, Geczy, and Gompers.<sup>8</sup>

Kooli suggested that the Koeplin study had certain weaknesses such as private companies in the sample were typically smaller and had different growth rates than the matched public companies. Also, as noted by Koeplin in his study, his study did not consider differences in employment contracts for key managers due to the acquisition. These differences may be a form of financial consideration provided to entice management to agree/approve a transaction. The Kooli study recognized the Koeplin study weaknesses and attempted to control for these weaknesses. In general, the Kooli study used similar procedures to those used in

7 Maher Kooli, Mohamed Kortas, and Jean-Francois L'Her, "A New Examination of the Private Company Discount: The Acquisition Approach." *The Journal of Private Equity*, Summer 2003.

8 Alon Brav, Christopher Geczy, Christopher, and Paul, A. Gompers.. "Is the Abnormal Return Following Equity Issuance Anomalous?" *Journal of Financial Economics*, 56 (2000): 209-249.

**TABLE 3:**  
 KOOLI STUDY  
 MEDIAN DISCOUNT INDICATIONS ACROSS INDUSTRY CATEGORIES  
 STUDY RESULTS FOR TRANSACTIONS OCCURRING BETWEEN 1995 AND 2002

Industry Sector	Discount Indication Based on Transaction Multiple Price/Sales (%)		Discount Indication Based on Transaction Multiple Price/Earnings (%)		Discount Indication Based on Transaction Multiple Price/Cash Flow (%)
Agriculture and Mining	-58.6		49.0		31.5
Construction	70.2		59.0		19.1
Manufacturing	36.7	a	30.5	b	21.6
Transportation and Communication	-30.3		18.1		21.6
Wholesale and Retail Trade	60.1	a	55.7	a	-10.4
Finance, Insurance, and Real Estate	-35.3	b	29.2	a	3.8
Services	15.4		33.6	b	34.1

a. Statistically significant at the 1 percent level.  
 b. Statistically significant at the 5 percent level.

the Koeplin study with the exception of its matching procedures (i.e., using a portfolio approach for transaction matching).

The Kooli study identified 331 private company transactions using the DoneDeals database and the SDC database. The study focused on private and public company transactions between 1995 and 2002. These transactions were controlling interest transactions for U.S.-based companies.

The Kooli study found that transaction multiples of public companies were typically greater than the transactions multiples of private companies. More specifically, the transactions multiples based on sales, earnings, and cash flow were greater by seventeen percent, thirty-four percent, and twenty percent, respectively.

The Kooli study used regression analysis to identify contributing factors that may help to explain the variation of PCD observations. The study concluded that the PCD varied due to firm characteristics and industry classification. For example, companies that were classified as large and growing generally had a smaller PCD than small companies with lower growth.

The results of the Kooli study as classified by industry sector, including the identification of statistical significance, are provided in Table 3.

The Kooli study found that private companies operating in the wholesale and retail trade industry and construction industry sectors transacted at greater discounts than businesses operating in most other industries. In general, the results suggest that the PCD varies by industry.

The Kooli study also presented a regression analysis to determine statistical significance of explanatory factors that impact the PCD. The regression results indicated that the PCD tends to be smaller for large (as measured by assets) and growing companies. The study results also suggest that there are many unexplained variables that impact the PCD.

#### OFFICER STUDY (2007)

The Officer study, published in the *Journal of Financial Economics*, provides another perspective of PCD evidence.<sup>9</sup> One of the primary purposes of this study, in addition to calculating the PCD, was to determine if illiquidity of the target company influenced the size of PCDs. To determine if

<sup>9</sup> Micah S. Officer, "The price of corporate liquidity: Acquisition discounts for unlisted targets," *Journal of Financial Economics*, 83, (2007), 571-598.

illiquidity influenced PCDs, the Officer study analyzed both private company acquisition pricing multiples and unlisted subsidiary acquisition pricing multiples to compare to public company acquisition pricing multiples.

The Officer study initially identified 12,716 company acquisition bids (both successful and unsuccessful) using SDC. The search was conducted to find transactions that occurred between 1979 and 2003. The study then actively eliminated transactions in which SDC merger and acquisition transaction data was incomplete.

In order to measure the private company (and unlisted subsidiary) acquisition discounts, the comparable industry

transaction method was used. For this method, Officer formed portfolios of publicly traded acquisition targets to compare to each unlisted target, similar to procedures used in the Kooli study. Portfolio selection was based on finding public targets in the same two-digit SIC code as the unlisted target, deal value excluding assumed liabilities within twenty percent of the unlisted target deal value, and acquisitions that were announced within a three-calendar-year window centered on the announcement date of the unlisted acquisition.

The results of the Officer study, including number of observations per financial metric, are presented in Table 4.

**TABLE 4:**  
OFFICER STUDY  
PRIVATE COMPANY DISCOUNT ESTIMATE  
STUDY RESULTS FOR TRANSACTIONS OCCURRING BETWEEN 1979 AND 2003

Financial Transaction Metric		Private Company Target	Unlisted Subsidiary
		Discount/(Premium)	Company
		to Public	Target Discount to Public
		Company Target	Company Target
		(%)	(%)
Price-to-Book Value of Equity	Average	-15.61	27.47
Price-to-Book Value of Equity	Median	-15.22	35.18
Number of Transactions (in #)		106	145
Price-to-Earnings Per Share	Average	22.85	28.90
Price-to-Earnings Per Share	Median	27.82	38.03
Number of Transactions (in #)		148	136
Deal-Value-to-EBITDA	Average	17.18	26.91
Deal-Value-to-EBITDA	Median	20.14	35.07
Number of Transactions (in #)		111	107
Deal-Value-to-Sales	Average	18.15	29.99
Deal-Value-to-Sales	Median	18.72	40.91
Number of Transactions (in #)		308	590
Average Acquisition Discount		17.28	28.31
Median Acquisition Discount		19.51	35.95
Number of Transactions (in #)		364	643

Based on the Officer study results, unlisted targets—private companies and unlisted subsidiaries—are acquired at approximately fifteen percent to thirty percent lower transaction multiples relative to comparable publicly traded acquisition targets.

According to Officer, and based on other evidence provided in the study, the study results support the hypothesis that acquisition prices are sensitive to the liquidity needs of the target company owners. As such, the study concluded that selling parties are willing to sell assets at a discount because of liquidity needs. The greater the liquidity needs, the greater the discount indications.

## SUMMARY AND CONCLUSION

All studies discussed in this article provided evidence of PCDs. These studies identified PCD evidence using the acquisition approach and the multiples approach. Of the listed studies, only the Paglia study employed a multiples approach to estimate the PCD.

According to the Paglia study, acquisition multiples studies have weaknesses. The most significant weakness is lack of good matches between private company transactions and public company transactions. In certain acquisition multiples studies, the sample sizes were less than 100 in total count. In certain other studies, the matching criteria employed cast a relatively wide net based on industry classification to establish matches—e.g., relying on two-digit SIC code matching. Another noted weakness is that it is unknown if any of the transactions used for comparison incorporate strategic value.

The Paglia study attempted to address weaknesses of the acquisition multiples approach by first identifying a larger group of comparable transactions and next

identifying better private company and public company matches using a multiples approach instead of the acquisition approach. This study compares the value multiples derived by public market pricing of publicly traded stocks and private company acquisition pricing.

As published in 2010, the Paglia study identified 674 matched pairs based on sales revenue and 635 matched pairs based on EBITDA between 1993 and 2008. These transactions provided evidence of PCDs of sixty-six percent to seventy-three percent.

The Paglia study used multivariate regression analysis to test certain hypotheses related to the level of PCD. The study found that larger and profitable private firms generally had lower PCD indications.

As published in 2000, the Koeplin study identified eighty-four domestic company matched pair transactions and 108 foreign company matched pair transactions that occurred between 1984 and 1998. These transactions provided evidence of PCDs of twenty percent to thirty percent for domestic company transactions and forty percent to fifty percent for foreign company transactions.

As published in 2003, the Kooli study identified 331 private company transactions that occurred between 1995 and 2002. These transactions provided evidence of PCDs of seventeen percent using revenue-based transaction multiple comparisons, thirty-four percent using earnings-based multiple comparisons, and twenty percent using cash flow-based multiple comparisons.

As published in 2007, the Officer study identified various private company transactions that occurred between 1979 and 2003. These transactions provided evidence of PCDs of fifteen percent to thirty percent. The Officer study also

presented evidence suggesting that the PCD is sensitive to the liquidity needs of the target private company owners. That is, the greater the need for liquidity, the larger the PCD.

The Kooli study and the Officer study were different than the Koeplin study primarily due to company matching (private to public) procedures. That is, the Kooli study and the Officer study used a portfolio-matching approach in order to match private companies to a portfolio of public companies. According to these studies, this matching approach was performed to lessen the potential noise that is often created by relying on only one statistical point of reference. In other words, by relying on only one public company as a reference point, certain differences between the public and private companies can result in unintended analysis indications.

Two additional studies that quantify a PCD, and are not extensively discussed here, are the Block study and the De Franco study. The Block study, as published in 2007, reported PCD indications of fourteen percent based on enterprise value-to-book value multiple analyses and twenty-four percent based on enterprise value-to-revenue multiple analyses. The De Franco study, as published in 2007, reported PCD indications of between twenty-one percent to thirty-seven percent.

Another acquisition approach study not specifically addressed herein is the James A. DiGabriele study (DiGabriele study).<sup>10</sup> The DiGabriele study presents a statistical analysis used to investigate the impact of the Sarbanes-Oxley Act of 2002 (SOX) on private company valuation. According to the DiGabriele study, transaction data

<sup>10</sup> James A. DiGabriele, "The Sarbanes-Oxley Act and the private company discount: An empirical investigation," *Critical Perspectives on Accounting*, Volume 19, Issue 8, December 2008.



suggests that the PCD is greater post SOX than it was pre SOX. Therefore, valuations of private companies were adversely impacted by SOX. According to the study, this impact is generally due to SOX compliance costs. These costs include increased due diligence costs that a public company typically incurs after acquiring a privately held company in order to comply with SOX

Collectively, these studies provide evidence that private companies often sell at lower multiples than their public counterparts. These lower multiples are likely influenced by the lack of liquidity/marketability of private company ownership as compared to public company ownership. Therefore, when valuing a private company, by reference to an otherwise similar but public company, a DLOM should typically be considered when the public company multiples are not otherwise adjusted. In general, study research suggests that transaction multiples are influenced by subject company size and profitability.

In addition to citing PCD evidence as a factor used to support DLOM decision making, another practical use of the PCD evidence, and more specifically the Paglia study data, is in the context of a market-based valuation approach—primarily the guideline publicly traded company method. A valuation analyst might consider citing PCD data as means to support the selection

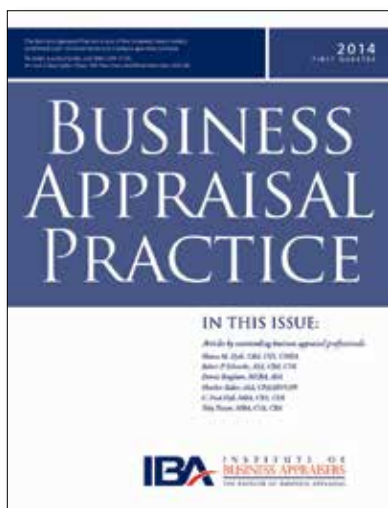
of a guideline pricing multiple to apply to a subject private company financial fundamental. In other words, if guideline publicly traded companies are trading at an average of ten times, EBITDA an analyst might consider citing the Paglia study as a reference to support a lower-than-average, market-based valuation analysis conclusion. **VE**



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