DUFF & PHELPS

Valuation Insights

Third Quarter 2018

INSIDE

EXECUTIVE SUMMARY

In this edition of *Valuation Insights*, we discuss the potential impacts of the latest U.S. Supreme Court decision in *South Dakota v. Wayfair, Inc.*, a landmark case in which the Court ruled in favor of the States requiring remote retailers to collect and remit sales tax even if they have no nexus in the state.

In our Technical Notes section, we discuss the potential impacts of the AICPA's *Accounting and Valuation Guide*, a user-friendly guide designed to harmonize the diverse views of alternative investment industry participants, auditors, and valuation specialists.

In our International in Focus article, we discuss recent enforcement actions and potential negative impacts against firms for improper valuation procedures and controls.

Finally, our Spotlight article examines the recent U.S. Supreme Court decision allowing for lost profit damages on foreign sales for patent owners.

In every issue of *Valuation Insights*, you will find industry market multiples that are useful for benchmark valuation purposes. We hope that you will find this and future issues of this newsletter informative and reliable.

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Analyze market multiple trends over time across industries and geographies.
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Supreme Court Rules in States' Favor with Wayfair Decision

In 1992, the Supreme Court decided to uphold *Quill v. North Dakota*[1] stating that a mail-order retailer did not have to collect a state's sales tax if they had no physical presence (or nexus) in that state.

Throughout the last two decades, the *Quill* decision has remained in place, including through the tech boom that eventually gave way to the multi-conglomerate retail revolution that is online shopping today. However, given the massive growth of online retailing and e-commerce platforms, it remains unclear how online retailers were able to avoid the same tax burden that their brick-and-mortar counterparts endured.

The Court finally agreed. With their decision in *South Dakota v. Wayfair Inc.*[2], the Justices handed down a landmark decision on June 21, ruling that states can now require remote retailers to collect and remit sales tax even if they have no nexus in the state.

What's Next?

While the reversal of *Quill* is undeniably one of the most important state and local tax events in decades, it does not come without a fair amount of grey area. The Court did not offer guidelines regarding South Dakota's economic nexus standard, nor did it indicate if states can seek sales tax retroactively (South Dakota's law does not).

Presently, there is no set standard for how states should go about taxing online sales, leaving more than 10,000 different state and local taxing districts to decide for themselves. Also, the ruling has the potential to present a difficult compliance challenge for many internet start-ups, even though some say there are software solutions to help small businesses navigate local tax laws.

Questions remain:

- Will states be allowed to collect taxes retroactively?
- If there are varying tax policies across states, how will they be enforced?
- When will states actually start collecting taxes for online sales? Immediately? 30 days?
- Is South Dakota the model upon which all states should base their new laws upon?

Most experts do think that South Dakota's current law could become the guiding light for other states. It establishes two clear-cut criteria for collecting sales tax from online retailers: (1) the remote seller's annual gross revenue exceeds $100,000, or (2) the remote seller has 200 or more separate transactions. The Court even commented on how South Dakota's law minimizes the burden on interstate commerce.

Congress will need to provide additional clarity. They have proposed bills, such as the Remote Transactions Parity Act (RTPA) or Marketplace Fairness Act (MFA), which would have let states collect from remote sellers if they agreed to simplify their sales taxes. But Congress has yet to enact legislation regarding this matter, nor have they issued protections to ensure the integrity of the e-commerce sector. The recent *Wayfair* decision was a close 5-4 vote that may provide the impetus for renewed focus and action.

What to Watch Out For

There are over 30 states that currently have internet sales tax laws, several of which replicate South Dakota, and many others are expected to follow. Remaining states will have to adapt their current laws to conform to the *Wayfair* decision, which is sure to generate a flurry of activity in legislatures.

1. *Quill Corp. v. North Dakota*, 504 U.S. 298 (1992)
2. *South Dakota v. Wayfair, Inc., U.S. S. Ct. Dkt No. 17–494, 6/21/2018*

With all the questions still looming over the Supreme Court's decision, it has become even more important for businesses to remain vigilant about how this massive change could impact operations. Here are some key considerations to carefully evaluate:

- Preparing for a potential surge in registration and tax reporting responsibilities
- Flexibility in monitoring tax liability for additional jurisdictions
- Adapting to new requirements for revenue sourcing, invoicing and appropriate line item billing to support all applicable jurisdictions
- Keeping up with ever-changing state and local sales and use tax rates
- Complying with tax filing responsibilities for a potentially large population of jurisdictions
- Complying with record retention requirements for online activities that support transaction detail during an audit and for other reporting purposes

Learn more here about why our Sales and Use Tax experts say it is vital to re-assess your risk of an expanding nexus footprint.

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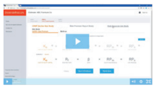

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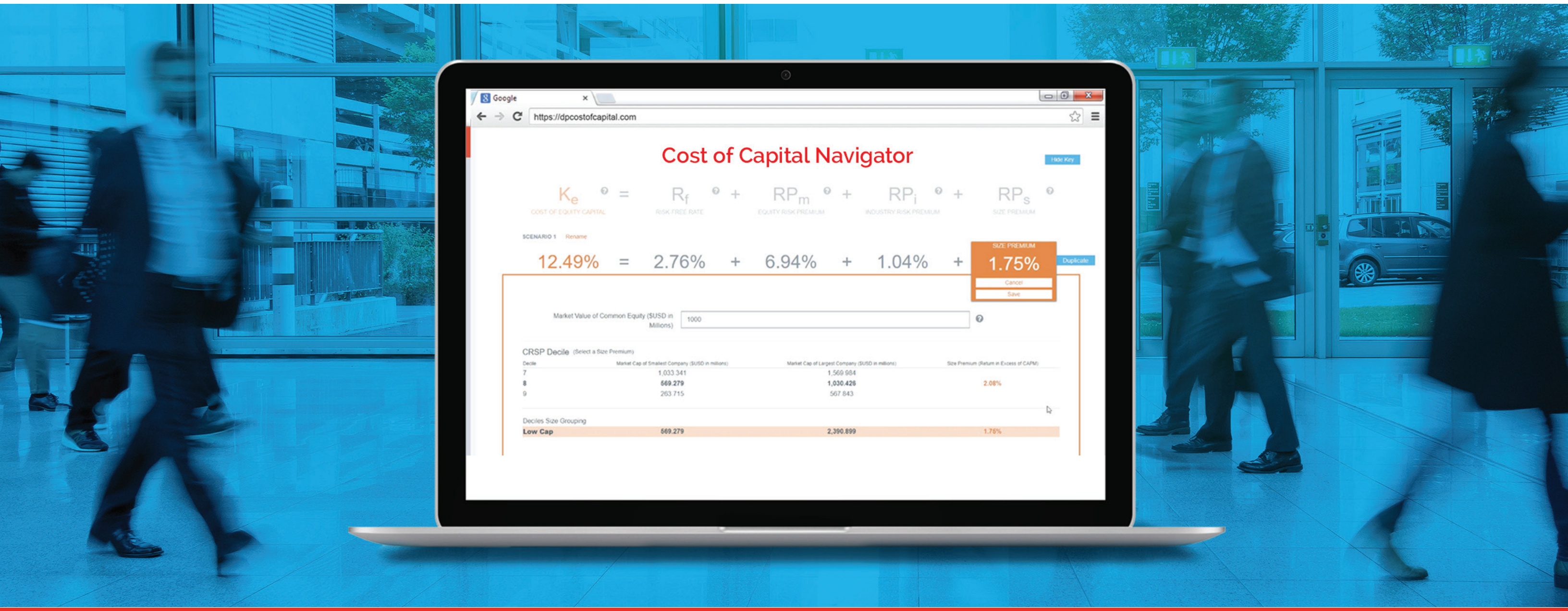

Duff & Phelps Cost of Capital Navigator

The Duff & Phelps Cost of Capital Navigator is an interactive, web-based platform that guides finance professionals through the steps of computing cost of capital, a key component of any valuation analysis, in accordance with best practices and the latest theory. It's as if a Duff & Phelps valuation professional is sitting alongside the analyst guiding them through the estimation process.

Interactive, Web-Based Platform

Duff & Phelps began publishing its proprietary Risk Premium Report Study in 1999 and its *Valuation Handbooks* series of books on cost of capital since 2014. The Cost of Capital Navigator replaces the Duff & Phelps V*aluation Handbook – U.S. Guide to Cost of Capital*, and in the future, all the data in the remaining books in the Valuation Handbook series will be migrated to the new online platform. Companies have relied on Duff & Phelps valuation data for years, and we are now making it available through an interactive platform accessible at your command.

Data Included:

- Risk-free rate data
- Equity Risk premia data
- CRSP Decile size premia data
- Duff & Phelps proprietary Risk Premium Report Size and Risk Data
- High-financial-risk Study
- Industry Risk Premia data
- Additional data for Beta estimates and industry comparisons
- Quarterly updates

Key Features and Functionality:

Support

"Help screens" guide the user through the cost of capital estimation process

Accessibility

Accessible via desktop, laptop or tablet.

Reduced Errors

Data auditing eliminates common mistakes such as mismatching of data.

Security

Cost of capital estimates are secure and accessible only by the individual licensed user.

Timeliness

Data is made available faster after year-end and quarterly periods than was previously possible with the printed books.

Reporting

Provides comprehensive, auditable workpaper documentation summarizing the computations, assumptions, information sources and models used.

Data Export

Calculations can be exported to both pdf and Excel. In the future, an Excel plug in feature will be added to directly import data from the Cost of Capital Navigator into a spreadsheet.

Flexibility

Allows for computation of the CAPM and/or the Build-up method, automatically calculates levered, unlevered and re-levered betas, etc. Allows for sensitivity analysis and the ability to save multiple computation scenarios.

Learn more and view a case study by visiting: dpcostofcapital.com

AICPA Accounting and Valuation Guide:
Valuation of Portfolio Company Investments of Venture Capital and Private Equity Funds and Other Investment Companies.

Background

In May 2018, the American Institute of Certified Public Accountants (AICPA) released a working draft of an Accounting and Valuation Guide, titled "*Valuation of Portfolio Company Investments of Venture Capital and Private Equity Funds and Other Investment Companies*" (the Guide). The Guide has been under development for the past five plus years. The purpose of the Guide is to help harmonize the diverse views of alternative investment industry participants, auditors, and valuation experts and to create a user-friendly treatise with case studies that can be used to reason through the valuation judgements faced by investment fund managers, valuation experts, and auditors on a regular basis.

Contents and Potential Impact of the Guide

The Guide is extensive (almost 600 pages) and is example rich. Content is as follows:

Chapter 1 – Overview of the Private Equity and Venture Capital Industry and its Investment Strategies	**Chapter 9** – Control and Marketability
Chapter 2 – Fair Value and Related Concepts	**Chapter 10** – Calibration
Chapter 3 – Market Participant Assumptions	**Chapter 11** – Backtesting
Chapter 4 – Determining Unit of Account and the Assumed Transaction for Measuring the Fair Value of Investments	**Chapter 12** – Factors to Consider at or near a Transaction Date
Chapter 5 – Overview of Valuation Approaches	**Chapter 13** – Special Topics
Chapter 6 – Valuation of Debt Instruments	**Chapter 14** – Frequently Asked Questions
Chapter 7 – Valuation of Equity Interests in Simple Capital Structures	**Appendix A** – Valuation Process and Documentation Considerations
Chapter 8 – Valuation of Equity Interests in Complex Capital Structures	**Appendix B** – Valuation Reference Guide
	Appendix C – Valuation Case Studies

As the Guide does not promulgate new Accounting Principles (that is the purview of FASB), there is no transition date.

If an investment manager's valuation process is currently robust, using market participant assumptions, often augmented by a qualified, experienced, independent valuation expert, there may be limited impact from the Guide. However, for many applying the Guide could result in enhancements to their valuation process, including but not limited to:

- Nature of the hypothetical transaction at the measurement date
- Re-assessment of unit of account and allocation of value between securities
- Valuing investments with Level II inputs
- Less emphasis on Option Pricing Models (OPM) (no requirement to use OPM); the need to augment OPM or adjust OPM if used
- Treatment of transaction costs at entry and exit
- The need to calibrate valuation inputs
- Application of backtesting
- Use of premia and discounts

Scope and Application

While the Guide is nonauthoritative, its application will be considered best practice given its thorough vetting by the AICPA, major accounting firms, and others. It provides illustrations for preparers of financial statements, independent auditors, and valuation experts regarding the valuation of portfolio company investments held by investment companies within the scope of FASB ASC 946 (including private equity funds, venture capital funds, hedge funds, and business development companies). The Guide will also be useful for non-investment companies, such as corporate venture capital groups or pension funds, which make investments in similar types of portfolio companies and pursue similar strategies when applying the fair value requirements of ASU 2016-01 and ASU 2018-03. In addition, the guide will be helpful when measuring the fair value of equity and debt investments in accordance with IFRS 9. However, it should be noted that the numerous and varied aspects of these non-investment entities were not considered or contemplated in the preparation of the Guide.

Feedback Requested

The AICPA has requested feedback on the working draft. All comments will be kept confidential and will not be posted on the AICPA Web site. If you would like to provide comments, please e-mail them to Yelena Mishkevich at yelena.mishkevich@aicpa-cima.com.

Conclusion

Fair value accounting, especially for investment managers, is here to stay. The Guide provides best practice guidance so managers, investors, regulators, auditors and independent valuation experts can emphasize judgment in evaluating relevant factors, consistent with market participant assumptions.

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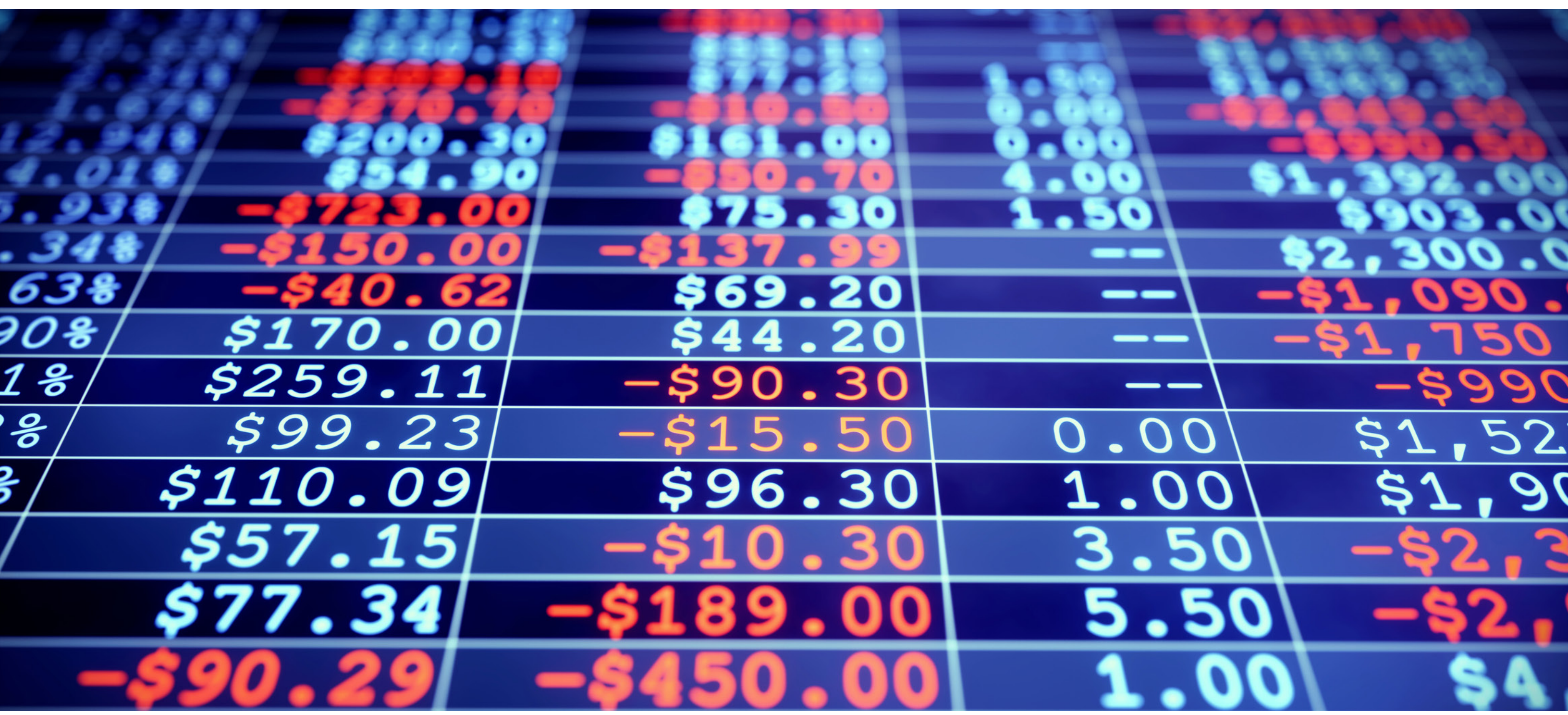
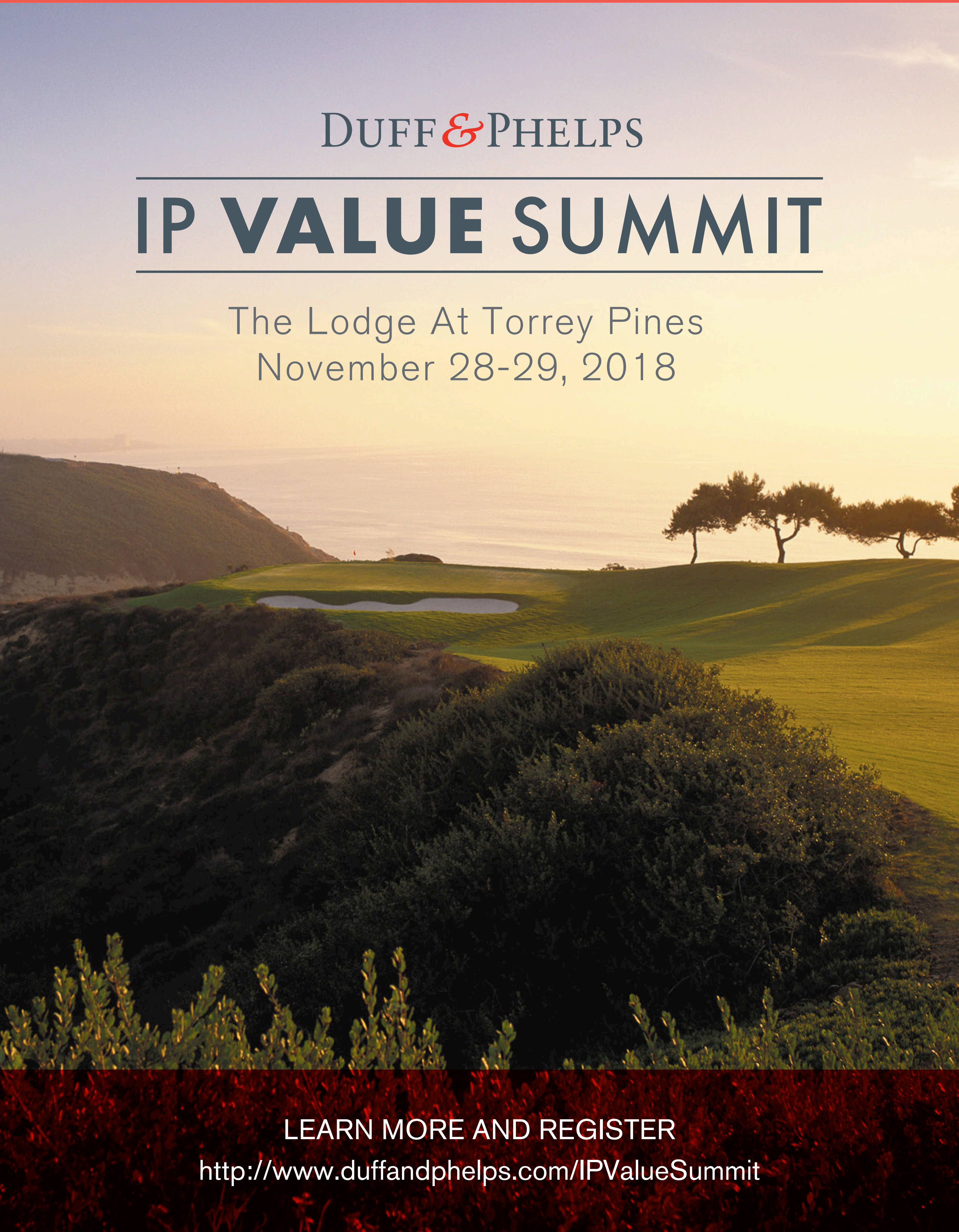
David Larsen, CPA/CEIV/ABV is a managing director with Duff & Phelps and serves as an advisor to IPEV Board, a member of the AICPA PE/VC Valuation guide taskforce, and former member of FASB's Valuation Resource Group.

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Putting a Price on Valuation

Enforcement action against firms for improper valuation procedures and controls by the Autorité des Marché Financiers (AMF) is a sign of things to come – and not just in France.

Valuations are a core issue for all stakeholders in the alternative funds sector. Failure to properly report the fair value of the assets of a fund distorts decision-making, undermines credibility and increases risk, while improper valuation practices may expose investors to losses, through secondary trades or through misallocations of capital. Furthermore, improperly valuing fund assets violates fund formation agreements and may constitute a breach of the fiduciary duty to act in the best interests of investors.

Transparency is also a key challenge when it comes to valuation and funds must reassure investors that their policies and procedures are robust. This is particularly true for illiquid and complex assets, where regulators are increasingly becoming sophisticated in examining the valuation practices. Since 2014, the EU's Alternative Investment Fund Managers Directive (AIFMD) has given legislative backing to the requirement for funds to have "appropriate and consistent procedures so that a proper and independent valuation of the assets can be performed."

Not holding back

Recently, the Financial Markets Authority has proved willing to act against funds where it has found their valuation processes and controls insufficiently robust and independent. For example, the AMF Sanctions Committee fined an asset manager €280,000 in France for failures around the valuation of an equity tranche of a collateralised debt obligation (CDO). The fund significantly underestimated the value and failed to provide investors with valuation transparency. The fund manager also failed to provide accurate and independent valuations of the fund assets.

Another example is when the AMF imposed a fine of €300,000 against another asset manager running a venture capital and private equity fund. It was fined for deficiencies around its valuation process and controls with a range of valuation procedures deemed to be imprecise, incomplete and non-operational. What is striking about this action is that there was no evidence that investors actually lost money, but the deficiencies were enough that the regulator still took action as the asset manager's actions infringed both EU and AMF regulations.

The AMF has recently announced the valuation of non-listed assets would be among its top priorities for on-site inspections during 2018, and audit firms must now put a clear emphasis on valuations as part of their audit process.

An international issue

The U.K.'s Financial Conduct Authority (FCA) changed its approach to follow up with supervisory oversight to check whether an alternative investment fund manager (AIFM), for example, is now following the provisions established by AIFMD Article 19. The regulator will take action if it sees that the fund manager is not acting in the best interests of investors. Regulatory interaction may start with product intervention and could progress to issuing a remediation plan. The impact on AIFMs can range from being relatively inexpensive in terms of costs and reputational damage, to extremely costly and with significant reputational damage. In cases where the FCA believes there is serious consumer detriment and is in the public interest, the regulator has the power to go straight to enforcement.

Although the U.S. has no equivalent to AIFMD, and no particular laws requiring independent valuations, the SEC is extremely vocal and proactive in this area. The SEC has been focused on several key valuation areas such as the relationship between valuation and the fees charged by fund managers, and whether fund managers are following their own valuation policy documents in good faith. The SEC is also beginning to question the use of broker-dealer quotes in the pricing of so-called "level 2" investments – a dubious but common practice across the alternative funds sector.

While many fund managers have observed the stance of regulators on valuation issues, some still fail to act as it is not always clear what specific actions they need to take.

Time to move

Investors will demand meaningful action as they become increasingly sophisticated in examining valuations. Over recent years, investor due diligence processes have grown stronger and stronger and is a theme set to continue.

Institutional investors will likely demand better controls and consistency across asset managers, and across jurisdictions – and many are doing so already. These expectations from managers in France are likely to follow through to managers in Europe and the U.S. Fund managers will also be expected to know what constitutes good practice. In the absence of

regulatory guidance, others have stepped in. The Alternative Investment Management Association has published its Guide to Sound Practices for the Valuation of Investments since 2005 – before AIFMD came into force. The 2018 edition was published in March and a substantial portion covers governance, policy and transparency. As noted previously, the AICPA has also released a working draft of a new guide providing best practice with respect to valuing private investments. Refer to page 5 to read an article on the new guide.

Regulatory pressure will increasingly force funds to act in response to investor concerns. The AMF has not let the lack of guidance stop it from taking action against firms and other regulators seem likely to follow. Given the uncertainties that remain, they may give some latitude for different interpretations in firms' efforts to meet the requirements of the AIFMD.

No quick fix

Managers should look more closely at their valuations; appropriate governance, processes, procedures and documentation will take time.

Most firms have neither the capacity nor the inclination to establish a fully robust valuation function in-house. And even if they were, the potential for conflicts of interest are difficult to overcome. In most jurisdictions, the use of external valuation experts is considered "best practice" and is insisted upon by investors – whether or not it is a requirement of local regulators.

Independent experts can validate valuations in one of two ways: either through a review of the fund's valuations and written opinion to confirm that they are reasonable; or through performing an independent valuation, which can then be used to corroborate the value the fund reports as its Net Asset Value (NAV). In both cases, the outside valuation expert's work serves to corroborate or support the internal work and the valuation process, not replace it.

While external valuation services can greatly improve governance, helping ensure the independence, consistency and credibility of the process cannot eliminate the work required to put in place robust valuation processes, procedures and documentation. There is plenty of work for funds to do and an increasingly urgent need to get it done.

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U.S. Supreme Court Allows Lost Profits Damages On Foreign Sales For Patent Owners

On June 22, 2018, the U.S. Supreme Court ruled that some damages on foreign sales may be available to U.S. patent owners.

According to the June 22 opinion in *WesternGeco, LLC, v. ION GeoPhysical Corporation,* the Patent Act provides that "a company can be liable for patent infringement if it ships components of a patented invention overseas to be assembled there." The question the Supreme Court sought to answer in *WesternGeco* was whether the patent owner could recover damages for lost foreign profits under Section 271(f). The Supreme Court found that patent owners may be able to.

In 2012, a Southern District of Texas jury found that ION infringed four WesternGeco patents by supplying components of systems used to survey the ocean floor under 35 U.S.C. § 271(f)(2). The jury awarded WesternGeco $12.5 million in reasonable royalty damages and $93.5 million in lost profits.

ION filed a post-trial motion to set aside the verdict, arguing that WesternGeco could not recover damages for lost profits because Section 271(f) does not apply extraterritorially. The District Court denied the motion. On appeal, the Federal Circuit reversed the lost profits award, finding that Section 271(f) should be interpreted like Section 271(a), which it had previously ruled does not allow patent owners to recover for lost foreign sales. After a first review by the Supreme Court, and another review by the Federal Circuit, the Supreme Court found that lost profits in this case were appropriate:

> *In sum, the focus of §284, in a case involving infringement under §271(f)(2), is on the act of exporting components from the United States. In other words, the domestic infringement is "the objec[t] of the statute's solicitude" in this context. Morrison, 561 U. S., at 267. The conduct in this case that is relevant to that focus clearly occurred in the United States, as it was ION's domestic act of supplying the components that infringed WesternGeco's patents. Thus, the lost-profits damages that were awarded to WesternGeco were a domestic application of §284.*

The Supreme Court remanded the case back to the Federal Circuit for consideration of other arguments.

One outstanding question from this ruling is the impact on non-patent damages. As the Supreme Court indicated, resolving the presumption against extraterritoriality under the Section 284 "could

implicate many other statutes besides the Patent Act." As explained by Timothy Holbrook, Asa Griggs Candler Professor of Law at Emory University School of Law, in a recent post in the Patently-O newsletter, "beyond patent law, this case had implications for the Court's jurisprudence on the presumption against extraterritoriality, particular as to whether the presumption applies to remedial provisions."[1] Professor Holbrook further added that "the Supreme Court wrote a narrow decision, expressly avoiding many of these broader issues" while also demonstrating a methodology for addressing these issues in the future.[2]

Writing for the dissent, Justice Neil Gorsuch (joined by Justice Stephen Breyer) said that a U.S. patent "provides a lawful monopoly over the manufacture, use, and sale of an invention within this country only." He continued, "[i]n measuring its damages, WesternGeco assumes it could have charged monopoly rents abroad premised on a U.S. patent that has no legal force there." He warned that "permitting damages of this sort would effectively allow U.S. patent owners to use American courts to extend their monopolies to foreign markets" and that "in turn, would invite other countries to use their own patent laws and courts to assert control over our economy."

To hear about this and other developments in the areas of damages and intellectual property valuation, join Duff & Phelps at the fifth annual IP Value Summit. This event will be held on November 29, 2018 at the Lodge at Torrey Pines in San Diego, California. The event is free to attend and offers CLE credit. Further information available here.

For more information, contact Julia Rowe, +1 312 697 4721; julia.rowe@duffandphelps.com

1. "Guest Post by Prof. Tim Holbrook: WesternGeco's Implications for Patent Law and Beyond," Patently-O, June 24, 2018 (accessed: https://patentlyo.com/patent/2018/06/holbrook-westerngecos-implications.html).
2. "Guest Post by Prof. Tim Holbrook: WesternGeco's Implications for Patent Law and Beyond," Patently-O, June 24, 2018 (accessed: https://patentlyo.com/patent/2018/06/holbrook-westerngecos-implications.html).

North American Industry Market Multiples

AS OF JUNE 30, 2018

Industry	Market Value of Equity to Net Income		MVIC to EBIT		MVIC to EBITDA	
	U.S.	Canada	U.S.	Canada	U.S.	Canada
Energy	12.6	19.9	23.1	22.4	11.8	8.9
Energy Equipment & Services	17.8	17.6	24.5	23.8	13.7	9.6
Integrated Oil & Gas	—	—	—	—	—	—
Materials	17.8	11.6	16.6	13.6	10.9	7.8
Chemicals	19.5	19.7	17.3	17.5	12.2	11.3
Diversified Chemicals	—	—	—	—	9.2	—
Specialty Chemicals	25.1	—	17.3	—	12.9	—
Construction Materials	23.4	—	25.7	—	13.9	—
Metals & Mining	12.3	11.3	14.3	12.6	10.5	7.6
Paper & Forest Products	14.5	11.3	14.5	8.8	7.0	6.1
Industrials	20.5	15.8	18.0	16.7	12.5	10.5
Aerospace & Defense	22.4	20.6	19.1	22.5	14.5	14.1
Industrial Machinery	26.9	35.7	18.0	18.9	13.3	16.9
Commercial Services & Supplies	18.4	22.4	17.7	15.5	11.1	10.2
Road & Rail	12.6	—	20.5	—	10.9	12.8
Railroads	9.8	—	16.3	—	11.1	—
Consumer Discretionary	18.1	16.6	16.1	15.3	11.5	10.8
Auto Parts & Equipment	16.6	—	12.3	—	8.3	—
Automobile Manufacturers	—	—	—	—	—	—
Household Durables	16.3	—	13.2	—	11.0	—
Leisure Products	22.5	—	15.8	—	12.4	—
Textiles, Apparel & Luxury Goods	23.0	27.6	16.2	18.9	11.8	15.7
Restaurants	20.3	16.6	19.8	15.9	12.9	16.6
Broadcasting	5.1	—	14.3	—	10.4	13.4
Cable & Satellite	8.0	—	18.2	—	9.7	—
Publishing	18.7	—	17.5	11.6	10.9	6.3
Multiline Retail	13.6	—	12.3	—	7.1	—

Industry	Market Value of Equity to Net Income		MVIC to EBIT		MVIC to EBITDA	
	U.S.	Canada	U.S.	Canada	U.S.	Canada
Consumer Staples	17.3	18.0	16.9	18.2	12.9	13.5
Beverages	31.6	—	24.8	37.5	20.7	16.2
Food Products	17.0	18.5	17.4	17.5	13.0	12.7
Household Products	19.7	—	16.1	—	13.7	—
Health Care	27.1	24.4	23.4	20.2	16.6	17.7
Health Care Equipment	47.4	—	29.5	—	23.4	—
Health Care Services	21.3	—	16.6	—	12.3	—
Biotechnology	20.1	18.1	18.5	—	16.6	—
Pharmaceuticals	13.2	41.1	17.8	40.9	13.2	27.6
Information Technology	26.2	27.9	24.2	24.8	17.6	20.8
Internet Software & Services	27.2	40.1	34.7	17.6	25.2	16.9
IT Services	24.9	—	21.8	—	15.6	16.4
Software	45.9	50.5	37.7	56.1	29.5	30.9
Technology Hardware & Equipment	24.4	23.4	20.2	21.0	14.3	14.7
Communications Equipment	28.0	26.1	27.7	26.3	19.4	15.3
Technology Hardware, Storage & Peripherals	17.1	—	18.4	—	12.7	—
Semiconductors	37.8	—	29.2	—	21.2	—
Telecommunication Services	12.1	—	22.5	—	8.1	8.9
Integrated Telecommunication Services	6.7	—	13.7	—	6.5	—
Wireless Telecommunication Services	19.7	—	29.7	—	7.6	—
Utilities	21.7	19.1	19.1	19.6	12.2	12.0
Electric Utilities	21.6	—	18.0	—	11.1	—
Gas Utilities	16.7	—	18.3	—	12.2	—

Industry	Market Value of Equity to Net Income		Market Value of Equity to Book Value	
	U.S.	Canada	U.S.	Canada
Financials	19.8	12.5	1.5	1.5
Banks	20.0	10.6	1.5	1.6
Investment Banking & Brokerage	22.5	—	2.7	1.0
Insurance	16.6	12.9	1.4	1.2

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The Tax Cuts and Jobs Act ("Act"), which was enacted on December 22, 2017, had a significant one-time impact on the net income of many U.S. companies that was reported after that date. As a result, U.S. Net Income multiples may have been temporarily, but materially impacted by some of the provisions in the Act and, which might require specific-company adjustments not reflected in the multiples reported herein. An industry must have a minimum of 5 company participants to be calculated.

For all reported multiples in the U.S. and Canada, the average number of companies in the calculation sample was 76 (U.S.), and 29 (Canada); the median number of companies in the calculation sample was 37 (U.S.), and 12 (Canada). Sample set includes publicly-traded companies (private companies are not included). Source: Data derived from Standard & Poor's Capital IQ databases. Reported multiples are median ratios (excluding negatives or certain outliers). MVIC = Market Value of Invested Capital = Market Value of Equity plus Book Value of Debt. EBIT = Earnings Before Interest and Taxes for latest 12 months. EBITDA = Earnings Before Interest, Taxes, Depreciation and Amortization for latest 12 months. Note that due to the exclusion of negative multiples from the analysis, the number of companies used in the computation of each of the three reported multiples across the same industry may differ, which may occasionally result in a counterintuitive relationship between those multiples (e.g. the MVIC-to-EBITDA multiple may exceed MVIC to EBIT).

European Industry Market Multiples

AS OF JUNE 30, 2018

Industry	Market Value of Equity to Net Income	MVIC to EBIT	MVIC to EBITDA
	Europe	Europe	Europe
Energy	18.1	17.7	10.0
Energy Equipment & Services	27.9	22.2	14.8
Integrated Oil & Gas	19.0	14.9	8.4
Materials	15.7	14.9	9.6
Chemicals	19.7	16.7	10.8
Diversified Chemicals	16.0	13.7	7.6
Specialty Chemicals	20.7	16.8	11.9
Construction Materials	16.1	15.9	10.4
Metals & Mining	11.8	12.5	8.3
Paper & Forest Products	16.1	16.0	10.4
Industrials	17.7	16.3	11.8
Aerospace & Defense	21.0	18.3	13.2
Industrial Machinery	20.7	16.6	12.7
Commercial Services & Supplies	17.6	15.7	11.5
Road & Rail	13.1	17.0	9.0
Railroads	13.0	18.4	9.2
Consumer Discretionary	17.2	15.2	10.8
Auto Parts & Equipment	13.5	12.2	7.8
Automobile Manufacturers	8.7	14.8	10.8
Household Durables	15.3	14.1	10.2
Leisure Products	29.5	19.5	13.8
Textiles, Apparel & Luxury Goods	20.9	17.0	12.2
Restaurants	18.0	14.0	11.0
Broadcasting	15.6	12.9	9.9
Cable & Satellite	29.8	21.2	8.8
Publishing	12.7	15.1	10.6
Multiline Retail	20.4	14.7	11.1

Industry	Market Value of Equity to Net Income	MVIC to EBIT	MVIC to EBITDA
	Europe	Europe	Europe
Consumer Staples	18.8	17.4	12.2
Beverages	24.1	20.0	13.6
Food Products	16.9	16.4	11.5
Household Products	—	17.2	9.8
Health Care	31.3	23.4	17.3
Health Care Equipment	32.3	25.0	19.9
Health Care Services	23.6	17.1	12.8
Biotechnology	33.5	33.1	27.4
Pharmaceuticals	21.3	19.6	14.9
Information Technology	23.2	20.8	15.6
Internet Software & Services	33.9	25.7	20.2
IT Services	21.8	17.4	14.4
Software	33.1	27.2	21.3
Technology Hardware & Equipment	19.4	17.7	13.1
Communications Equipment	17.4	21.9	15.6
Technology Hardware, Storage & Peripherals	20.8	18.0	13.1
Semiconductors	26.4	22.7	17.4
Telecommunication Services	21.0	18.1	9.4
Integrated Telecommunication Services	17.5	16.3	8.4
Wireless Telecommunication Services	24.7	16.5	7.8
Utilities	15.3	18.9	10.7
Electric Utilities	13.2	15.7	11.0
Gas Utilities	15.1	17.5	9.9

Industry	Market Value of Equity to Net Income	Market Value of Equity to Book Value
	Europe	Europe
Financials	11.6	1.0
Banks	9.3	0.7
Investment Banking & Brokerage	19.1	1.8
Insurance	12.3	1.1

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An industry must have a minimum of five company participants to be calculated. For all reported multiples in Europe, the average number of companies in the calculation sample was 91 and the median number of companies in the calculation sample was 38. Sample set includes publicly-traded companies (private companies are not included). Source: Data derived from Standard & Poor's Capital IQ databases. Reported multiples are median ratios (excluding negatives or certain outliers). MVIC = Market Value of Invested Capital = Market Value of Equity plus Book Value of Debt. EBIT = Earnings Before Interest and Taxes for latest 12 months. EBITDA = Earnings Before Interest, Taxes, Depreciation and Amortization for latest 12 months. Note that due to the exclusion of negative multiples from the analysis, the number of companies used in the computation of each of the three reported multiples across the same industry may differ, which may occasionally result in a counterintuitive relationship between those multiples (e.g. the MVIC-to-EBITDA multiple may exceed MVIC to EBIT).

UPCOMING EVENTS

AUGUST 21

New Valuation Guidelines: How Will Your Valuation Process Need to Change to Meet Investor Demands

Hong Kong

AUGUST 28

Round Table Discussion on Valuation - Seperating Fact from Fiction

Palo Alto, California

SEPTEMBER 2-6

IFA World Congress

Seoul, Korea

SEPTEMBER 5-6

GRI Europe Summit

Paris, France

SEPTEMBER 19-20

TP Minds Asia

Singapore

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