

Fourth Quarter 2014

Valuation Insights

In this edition of Valuation Insights we discuss the results of the 2014 U.S. Goodwill Impairment Study conducted by Duff & Phelps and the Financial Executives Research Foundation. The Study examines general and industry goodwill impairment trends through December 2013, as well as reports the 2014 results of the annual survey of Financial Executives International members.

In our Technical Notes section we discuss a new Duff & Phelps publication, *The 2014 Valuation Handbook – Industry Cost of Capital*. The book provides cost of capital and other key financial benchmarking data for over 200 U.S. industries. Selected data contained in the book was previously published in the Morningstar/Ibbotson Cost of Capital Yearbook which was discontinued in 2013.

Our International in Focus article discusses the valuation standards in Germany that should be applied by companies making investments in the country. While there is no legal requirement to comply with the IDW standards, compliance is considered best practice and generally a de-facto standard for valuations and fairness opinions.

Finally, our Spotlight article discusses Duff & Phelps' recent expansion in Europe through both acquisitions and organic growth. Duff & Phelps has opened four new offices in 2014, expanding its valuation advisory, transfer pricing, M&A and restructuring practices.

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

Read this issue to find out more.

Inside

2 Feature

Results of the 2014 U.S. Goodwill Impairment Study

3 Technical Notes

Introducing the *2014 Valuation Handbook – Industry Cost of Capital*

4 International in Focus

Valuation Considerations when Investing in German Companies

5 Spotlight

Duff & Phelps Extends its Global Footprint through Expansion in Europe

6 North American Industry Market Multiples

7 European Industry Market Multiples

8 About Duff & Phelps

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Results of the 2014 U.S. Goodwill Impairment Study

Duff & Phelps and the Financial Executives Research Foundation (“FERF”)¹ released the results of the 2014 U.S. Goodwill Impairment Study (2014 Study) in October 2014. Now in its sixth year of publication, the 2014 Study continues to examine general and industry goodwill impairment trends through December 2013, as well as report the 2014 results of the annual survey of Financial Executive International (“FEI”) members.

Specially featured in this year’s edition are highlights from an independent study performed by Duff & Phelps, which analyzes the extent to which U.S. publicly-traded companies are using the optional “Step 0” of the goodwill impairment test.

Highlights of the 2014 Study

U.S. public companies recorded \$21 billion of goodwill impairment (“GWI”) in calendar year 2013, representing a 59% decline from the \$51 billion reported in the prior year. In addition, the number of GWI events fell by 18%, resulting in an average impairment amount of \$108 million for 2013, which is now approaching the average low of \$86 million in 2009.

The 2013 aggregate impairment amount was the lowest level seen since 2008, at the height of the financial crisis, and is also consistent with generally observed U.S. macroeconomic trends. The U.S. economic outlook continued to improve in 2013 and was accompanied by an exceptional performance by U.S. stock markets. In fact, the S&P 500 Index surged by 30% in 2013, its biggest annual advance since 1997 in percentage terms.

Much of the 2012 total GWI was dominated by the top three impairment events, which accounted for 47% (or \$24 billion) of the aggregate amount. In contrast, the concentration of GWI attributable to the three largest impairment events declined to 22% (or \$4.7 billion) in 2013. In general, of the companies carrying goodwill, 8.6% recognized goodwill impairment in 2013, a decrease from 10.5% in 2012.

Materials jumped from fifth place in 2012 to first in 2013 as the industry with the highest amount of GWI (\$4.5 billion, or 22% of 2013’s aggregate impairments in just eight events). It replaced Information Technology, which fell to sixth place in 2013, in the absence of its two largest impairments in 2012. Excluding those two events would have resulted in a GWI amount of \$2.1 billion in 2012, which is more in line with the \$1.4 billion recorded in 2013 for this industry. In 2013, Industrials had the largest percentage of companies that impaired goodwill (7.4%) followed by Consumer Discretionary and Information Technology (both at 5.7%).

Highlights of the 2014 Survey

The 2014 Survey continued to monitor FEI members’ use of the optional qualitative test when testing goodwill for impairment (a.k.a. “Step 0”). Notably, the 2014 Survey indicates a broader use of the Step 0 test. In particular, public company use of Step 0 increased from 29% in the 2013 Survey to 43% this year. Use of Step 0 by private company respondents in the 2014 survey also increased from 22% to 29%.

Notably, a large proportion of both public (42%) and private (31%) companies prefer to bypass Step 0 altogether and proceed directly to the quantitative Step 1 test. This may be an indication they have grown accustomed to the quantitative test and in some cases may also see some incremental benefits beyond a compliance exercise. Furthermore, if the group of respondents that prefer to use the quantitative test are excluded, 75% of the remaining public company respondents elected to apply Step 0 to some or all of their reporting units, which is a stark increase from 53% in the prior year’s survey.

In addition, this year’s survey reports that 78% of the companies applying Step 0 to some or all reporting units believe that it meets the stated objective of reducing costs.

Step 0 Study

Separately, we addressed the use of Step 0 in 2012 and 2013 by public companies in a dedicated Step 0 Study. Our Step 0 Study expanded upon the FEI annual surveys by evaluating the disclosures of a random selection of 355 U.S. public companies reporting under U.S. GAAP that carry goodwill on their balance sheets.

It is noteworthy that while this study was more expansive than the FEI Surveys and has statistical significance, the indications about the use of Step 0 in both are quite comparable. In fact, our independent Step 0 Study corroborated the above usage rate of public company survey respondents, by indicating that 41% of U.S. public companies applied Step 0 in 2013, increasing from 33% in 2012.

To obtain a copy of the full Step 0 Study please visit www.duffandphelps.com/Step0Study.

For a complete copy of the 2014 U.S. Goodwill Impairment Study, please visit www.duffandphelps.com/2014GWIstudyUS.

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1. Financial Executives Research Foundation (FERF) is the non-profit 501(c)(3) research affiliate of Financial Executives International (FEI).

Technical Notes

Introducing the 2014 Valuation Handbook – Industry Cost of Capital

In March 2014, Duff & Phelps published the *2014 Valuation Handbook – Guide to Cost of Capital*, which provides key year-end data previously available in (i) the Morningstar/Ibbotson *SBBI Valuation Yearbook* and (ii) the Duff & Phelps *Risk Premium Report*. The *2014 Valuation Handbook – Guide to Cost of Capital* can be used to develop cost of equity capital estimates for purposes of valuing a business, an ownership interest in a business, a security, or an intangible asset.

In October 2014, Duff & Phelps introduced the new *2014 Valuation Handbook – Industry Cost of Capital*. The *2014 Valuation Handbook – Industry Cost of Capital* provides the same type of rigorous industry-level analysis previously published in the green-cover Morningstar/Ibbotson *Cost of Capital Yearbook* which was discontinued in 2013.

Like the previous Morningstar/Ibbotson *Cost of Capital Yearbook*, the new *2014 Valuation Handbook – Industry Cost of Capital* is published with data through March 2014 and includes three intra-year quarterly updates (June, September, and December).

And, like the previous Morningstar/Ibbotson *Cost of Capital Yearbook*, the new *2014 Valuation Handbook – Industry Cost of Capital* covers over 200 U.S. industries identified by their Standard Industrial Classification (SIC) code.

Who Should Use the Valuation Handbook – Industry Cost of Capital?

In addition to the valuation practitioner, the *2014 Valuation Handbook – Industry Cost of Capital* is designed to serve the needs of CFOs, corporate officers, investment bankers, private equity investors, CPAs, judges, attorneys, among others.

What's in the 2014 Valuation Handbook - Industry Cost of Capital?

Industry-Level Cost of Capital Estimates

The *2014 Valuation Handbook – Industry Cost of Capital* provides eight (8) cost of equity capital estimates for each of the industries covered in the book:^{1,2}

1. *Capital Asset Pricing Model (CAPM)*³
2. *CAPM + Size Premium (using the CRSP Decile Size Study)*
3. *Build-up + Industry Risk Premium (using the CRSP Decile Size Study)*
4. *CAPM + Size Premium (using the Risk Premium Report Study)*
5. *Build-up + Risk Premium Over the Risk-free Rate (using the Risk Premium Report Study)*
6. *1-Stage Discounted Cash Flow (DCF) model*
7. *3-Stage DCF model*
8. *Fama-French (F-F) 3-Factor Model*

Cost of debt capital and weighted average cost of capital (WACC) are also presented for each industry.⁴

Industry-Level Statistics, Capital Structure, Valuation Multiples, and Betas

The new publication also provides detailed statistics for sales, market capitalization, capital structure, various levered and unlevered beta estimates (e.g. ordinary-least squares (OLS) beta, sum beta, downside beta, etc.), valuation (trading) multiples, financial and profitability ratios, equity returns, aggregate forward-looking earnings-per-share (EPS) growth rates, and more.

New: Analysis of Capital Structure Including Off-Balance-Sheet Liabilities

The *2014 Valuation Handbook – Industry Cost of Capital* provides new statistics that enable the user to gauge the impact of “debt-like” off-balance sheet items on the capital structure of the subject industry. These debt-equivalent liabilities (specifically, operating leases and unfunded pension obligations) are not only taken into account by credit rating agencies when assigning a debt rating for a company, but should likely be considered as well when ascertaining the true financial (and equity) risk of the subject company.

The capital structure (and unlevered betas) of each industry are calculated with and without these off-balance-sheet debt-equivalent items, so that the user can ascertain how material these liabilities are for the subject industry.

The *2014 Valuation Handbook – Industry Cost of Capital* is available for purchase through Business Valuation Resources, LLC (BVR) (visit www.bvresources.com/costofcapital or call +1 503 291 7963 ext. 2) or ValuSource (visit www.valusource.com/industrycapital or call +1 800 825-8763).

For more information on these books and other cost of capital resources, visit: www.duffandphelps.com/costofcapital

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1. Depending on data availability; some industries may not include all estimates.

2. In this list, the “CRSP Decile Size Study” is the valuation data previously published on the “back page” of the Morningstar/Ibbotson *SBBI Valuation Yearbook*; the “Risk Premium Report Study” is the valuation data previously published in the Duff & Phelps *Risk Premium Report*. Both valuation data sets are now published in the *2014 Valuation Handbook – Guide to Cost of Capital*.

3. This is CAPM calculated without any additional adjustments for “size”, or other factors (i.e., the traditional “textbook” CAPM).

4. Depending on data availability; some industries may not include all estimates.

International in Focus

Valuation Considerations when Investing in German Companies

In 2013, foreign investors invested more than €25 billion into German companies, with the United Kingdom and the United States leading in total deal size and in the number of transactions completed. The majority of these transactions typically require valuation advice at one point or another, thus making it essential to understand local custom and practice.

While Germany is globally well known for its ability to produce and export complex machinery systems, a higher level of complexity can also be attributed to German valuation practice. The main local standard setting body among others like the German Society of Investment Analysts and Asset Managers (Deutsche Vereinigung für Finanzanalyse und Asset Management, "DVFA") is the Institute of Public Auditors in Germany (Institut der Wirtschaftsprüfer in Deutschland, "IDW"). The IDW issues guidelines and interpretations in relation to international and German accounting standards as well as its own accounting and valuation standards. For the valuation practice, the most relevant standards are as follows:

- IDW S 1 (2008): Principles for the Performance of Business Valuations (official English translation available)
- IDW S 5 (2011): Principles for the Valuation of Intangible Assets (official English translation available)
- IDW S 6 (2012): Principles for the Preparation of an Independent Business Review (official English translation not yet available)
- IDW S 8 (2011): Principles for the Preparation of Fairness Opinions (official English translation available)

Performing valuation or valuation-related engagements for any of the abovementioned purposes does not legally require compliance with such standards. However, full compliance will be generally expected by the ultimate addressees of the valuation work such as tax authorities, audit firms, courts etc. and, thus, has become the de-facto standard.

The IDW S 1 is the main standard for business valuation for tax, legal and accounting purposes. It defines relevant terms and explains the main aspects in relation to company valuations. Several updates have been issued, since the first release. The latest update was published in 2008 as a reaction to the substantial change in the tax regime in Germany and includes the following main components:

- Function of the appraiser: According to the standard the appraiser can act as either a neutral expert or advisor to its clients.
- Valuation concept: The standard differentiates between a subjective and objectified value. Within the subjective value concept, the appraiser is free in setting valuation parameters and assumptions. The objectified value concept has higher restrictions. All assumptions and parameters impacting the valuation need to be as objective as possible and consistent with market information.

- Overall valuation approach: Discounted cash flow method (DCF) is the leading concept, multiple approaches are only relevant as cross-checks; and liquidation value is used as a lower boundary.
- Acceptable discounted cash flow methods: Preliminary dividend discount method / capitalized earnings method (Ertragswertverfahren) for purposes of equity valuation as well as DCF for entity valuation.
- Consideration of personal income tax: The latest IDW S 1 allows both the valuation before and after income tax. However, for legal valuations (squeeze outs, etc.) as well as for the valuation of private companies, the valuation is required to be after personal income tax.
- Cost of capital: Market oriented CAPM based approach is standard; for the after personal income tax valuation, TAX-CAPM is to be applied. Size premium are not allowed by definition.

Aside from the IDW S 1, the IDW S 8 has grown in relevance recently. As investor and regulatory scrutiny increases on companies and their transactions, board members are well advised to use due care in executing their fiduciary duties and mitigating real or perceived conflicts of interest. Legal requirements such as section 27 of the German Securities Acquisition and Takeover Act (Wertpapiererwerbs- und Übernahmegesetz, "WpÜG") are good examples requiring the management and supervisory board to provide a substantiated statement on any takeover offer in relation to the adequacy of the offer price. One way board members can address their duties is by seeking fairness opinion services from a trusted and independent advisor.

Fairness opinions issued by independent advisors and audit firms have increased in Germany compared to those issued by investment banks from 41% over the period of 2005-2011 to 66% in 2012.¹ The reasons for this might be that most investment banks do not follow the specified standard IDW S 8, and there has also been an increasing demand for independent advisors.

Overall, Germany has proven to be an interesting deal market for global investors. The related valuation market is quite complex and very standard driven. As companies make investments in Germany they would be wise to understand the standards and seek independent valuation advice as needed.

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1. Source: Duff & Phelps/HHL: Fairness Opinion Monitor 2013: Summary 2005 – 2012

Spotlight

Duff & Phelps Extends its Global Footprint through Expansion in Europe

Throughout the first three quarters of 2014 as part of its European strategic growth initiative, Duff & Phelps has been steadily expanding in Europe, both organically and through acquisitions. This progress includes the opening of four new offices - located in Dublin and Longford Ireland; Madrid, Spain; and Frankfurt, Germany — increasing the number of offices located in the European region to 11 since last year.

The Global Restructuring Advisory practice added seven highly experienced Managing Directors both in the UK and the Republic of Ireland, while the Global M&A team added two UK-based Managing Directors. As part of the acquisition of RSM Farrell Grant Sparks' Restructuring and Insolvency Division, the overall restructuring practice grew to over 200 professionals worldwide.

The Valuation Advisory practice welcomed five Managing Directors, including two who are co-leading the Duff & Phelps Frankfurt office, and two who have established the transfer pricing practice's first physical location outside of North America by joining the London office.

Yann Magnan, Valuation Advisory services leader for Europe, stated earlier this year that "Duff & Phelps' aim is to advise our clients as they pursue business development opportunities, given the backdrop of a changing regulatory environment and increasing demands for greater transparency." With this focus, Duff & Phelps continues to pursue its commitment to grow and provide independent valuation and corporate finance advisory services to the European market and around the world.

AVAILABLE NOW PRIVATE EQUITY VALUATION

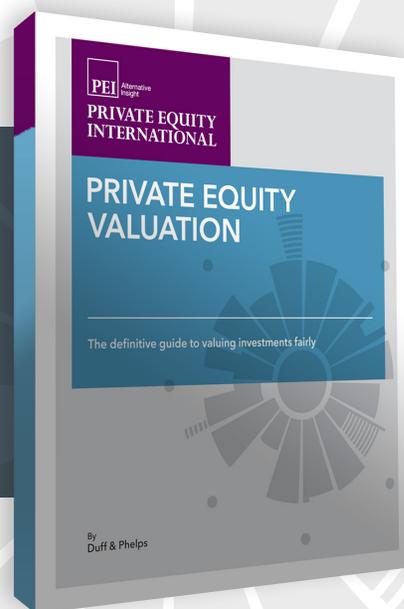
The definitive guide to valuing investments fairly

Written by Duff & Phelps, PEI's new publication *Private Equity Valuation* is essential for all professionals buying, selling and valuing private equity assets.

The new guide provides fund managers and investors with essential tools and best practices for valuing their investments, including illustrative examples on valuation techniques and nuances for a variety of assets and scenarios.

Also included is a handy A-Z reference with over 80 common terms from absolute return to waterfall analysis, as well as guidance on applying fair value under Dodd-Frank and AIFMD.

The new guide is available for purchase at www.privateequityinternational.com/pevaluation. Clients and friends of the firm can enter promo code DPVAL15 to receive a discount of 15%.



DUFF & PHELPS

Valuation and Corporate Finance Advisors

North American Industry Market Multiples

As of September 30, 2014

Industry	Market Value of Equity to Net Income		MVIC to EBIT		MVIC to EBITDA	
	U.S.	Canada	U.S.	Canada	U.S.	Canada
Energy	19.8	21.8	19.0	21.4	10.8	8.8
Energy Equipment & Services	18.5	17.0	14.9	16.7	8.3	8.9
Integrated Oil & Gas	11.3	—	10.3	—	6.6	—
Materials	18.0	14.6	14.2	16.3	10.3	8.1
Chemicals	20.0	23.0	14.3	16.5	10.9	11.4
Diversified Chemicals	19.4	—	15.6	—	11.3	—
Specialty Chemicals	21.0	—	15.2	—	11.2	—
Construction Materials	38.8	—	25.4	—	13.2	—
Metals & Mining	14.1	13.0	15.2	16.0	10.9	6.5
Paper & Forest Products	16.7	18.3	13.3	16.0	9.0	9.5
Industrials	20.1	16.8	14.9	15.9	10.9	10.9
Aerospace & Defense	18.6	16.2	14.6	19.8	11.5	12.7
Industrial Machinery	19.3	20.0	14.5	17.3	11.0	11.1
Commercial Services & Supplies	20.3	25.0	14.0	19.8	9.2	7.8
Road & Rail	22.6	20.0	17.2	15.6	10.1	10.9
Railroads	20.7	—	16.3	—	11.5	—
Consumer Discretionary	18.6	16.5	15.0	13.3	11.0	10.9
Auto Parts & Equipment	14.8	13.4	11.3	11.1	7.9	6.8
Automobile Manufacturers	—	—	—	—	10.1	—
Household Durables	17.7	—	16.0	—	12.9	—
Leisure Equipment & Products	12.0	—	15.4	—	11.8	—
Textiles, Apparel & Luxury Goods	17.8	—	15.4	—	12.2	—
Restaurants	27.2	17.5	18.4	11.7	12.0	6.6
Broadcasting	15.6	—	14.4	—	11.1	—
Cable & Satellite	19.2	—	14.6	12.6	10.3	6.8
Publishing	21.1	—	15.7	6.0	10.2	5.0
Multiline Retail	18.7	—	13.1	—	9.1	—

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	19.4	21.0	15.0	17.0	11.6	11.4
Beverages	20.1	—	17.1	23.1	14.4	9.9
Food Products	18.1	19.1	15.3	15.1	12.3	12.4
Household Products	21.6	—	15.5	—	12.0	—
Health Care	22.1	10.5	18.2	22.6	13.7	13.2
Health Care Equipment	22.6	—	20.3	—	14.5	—
Health Care Services	21.2	—	14.1	—	11.6	—
Biotechnology	22.2	8.6	30.8	—	29.6	7.3
Pharmaceuticals	19.2	—	17.0	—	13.2	—
Information Technology	22.5	18.2	19.3	19.0	15.1	15.3
Internet Software & Services	26.5	9.0	26.4	18.7	18.2	15.3
IT Services	20.5	25.7	14.6	28.7	12.1	12.4
Software	35.8	33.0	26.2	29.9	19.1	24.3
Technology Hardware & Equipment	19.2	18.1	17.5	13.9	13.0	11.3
Communications Equipment	21.1	19.2	20.2	14.0	15.9	12.6
Computers & Peripherals	17.9	—	15.9	—	12.0	—
Semiconductors	24.1	—	22.8	—	16.0	—
Telecommunication Services	19.7	17.4	16.5	14.0	8.1	8.4
Integrated Telecommunication Services	12.6	18.1	14.4	13.6	6.5	8.4
Wireless Telecommunication Services	20.0	—	18.1	—	8.6	—
Utilities	18.0	16.7	15.0	20.2	9.7	11.9
Electric Utilities	16.9	—	14.7	—	9.1	—
Gas Utilities	17.8	—	13.8	—	8.8	—
Industry	Market Value of Equity to Net Income		Market Value of Equity to Book Value			
	U.S.	Canada	U.S.	Canada	U.S.	Canada
Financials	14.2	13.0	1.1	1.3		
Commercial Banks	14.0	12.3	1.1	2.0		
Investment Banking and Brokerage	22.2	—	1.8	—		
Insurance	12.7	13.0	1.1	1.5		

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 87 (U.S.), and 29 (Canada); the median number of companies in the calculation sample was 45 (U.S.), and 11 (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). MVIC = Market Value of Invested Capital = Market Value of Equity plus Book Value of Debt. EBIT = Earnings Before Interest and Taxes for latest fiscal year. EBITDA = Earnings Before Interest, Taxes, Depreciation and Amortization for latest 12 months.

European Industry Market Multiples

As of September 30, 2014

Industry	Market Value of Equity to Net Income	MVIC to EBIT	MVIC to EBITDA
Energy	14.8	14.8	10.1
Energy Equipment & Services	19.3	15.2	9.8
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Diversified Chemicals	—	16.1	8.1
Specialty Chemicals	22.1	16.5	10.8
Construction Materials	19.1	15.4	9.1
Metals & Mining	12.7	12.2	9.0
Paper & Forest Products	13.1	20.3	11.0
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Commercial Services & Supplies	18.8	15.0	10.1
Road & Rail	15.1	14.9	8.5
Railroads	—	—	—
Consumer Discretionary	18.0	14.6	10.8
Auto Parts & Equipment	13.8	11.2	7.2
Automobile Manufacturers	11.2	18.8	10.1
Household Durables	14.8	13.2	10.3
Leisure Equipment & Products	16.6	14.4	10.2
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Restaurants	22.7	16.3	10.7
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Cable & Satellite	—	24.2	12.0
Publishing	15.3	13.9	10.5
Multiline Retail	16.4	17.2	13.6

Industry	Market Value of Equity to Net Income	MVIC to EBIT	MVIC to EBITDA
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Beverages	19.4	17.3	12.4
Food Products	14.6	14.3	9.4
Household Products	20.4	15.0	8.5
Health Care	23.5	19.7	14.5
Health Care Equipment	22.1	18.6	15.3
Health Care Services	14.1	13.9	9.9
Biotechnology	27.2	23.1	19.7
Pharmaceuticals	25.3	18.7	14.3
Information Technology	20.2	16.3	12.4
Internet Software & Services	27.7	23.0	19.1
IT Services	18.4	13.0	10.4
Software	23.0	20.5	14.1
Technology Hardware & Equipment	19.1	15.7	11.7
Communications Equipment	15.3	15.5	13.2
Computers & Peripherals	13.1	13.3	11.0
Semiconductors	24.9	26.1	15.4
Telecommunication Services	17.8	15.2	8.4
Integrated Telecommunication Services	16.2	13.8	7.5
Wireless Telecommunication Services	11.1	17.8	9.0
Utilities	17.1	18.6	10.6
Electric Utilities	16.9	16.9	10.4
Gas Utilities	14.7	15.4	9.8

Industry	Market Value of Equity to Net Income	Market Value of Equity to Book Value
Financials	13.6	1.0
Commercial Banks	11.4	0.7
Investment Banking and Brokerage	19.3	1.5
Insurance	10.9	1.1

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 41. 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). MVIC = Market Value of Invested Capital = Market Value of Equity plus Book Value of Debt. EBIT = Earnings Before Interest and Taxes for latest fiscal year. EBITDA = Earnings Before Interest, Taxes, Depreciation and Amortization for latest 12 months.

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