DUFF & PHELPS

SPECIAL TAX REFORM ISSUE

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EXECUTIVE SUMMARY

On December 22, 2017, President Donald Trump signed the Tax Cuts and Jobs Act (the "Act") which introduced sweeping changes to the U.S. tax code. Tax reform will have a material impact on how business is conducted on a global scale. While earnings for many businesses are expected to increase due to the reduced corporate tax rate, the elimination or reduction in certain tax credits and deductions may potentially offset this benefit. Overall, tax reform is expected to provide a boost to the U.S. economy.

Tax reform will impact business and asset valuations, transfer pricing and tax planning, and financial and tax reporting, among other areas. In this special edition of Valuation Insights, we discuss a number of these areas in greater detail to help our readers evaluate the implications for their businesses and maximize value.

Specifically, we review the impact of the Act on valuations. This includes the change in corporate tax rate, interest expense deduction limitations, and changes in the use of net operating losses to offset taxable income, among others. The article on this topic will highlight changes that will need to be incorporated into valuations to reflect key provisions of tax reform.

Cost of capital, a key component of any valuation analysis, may be impacted by tax reform due to changes in the corporate tax rate and new limitations for interest expense deductions. In this issue, we review the forces at play that may impact the computation of discount rates.

The Act may cause companies to reevaluate where they locate their intangible property ("IP") in the future due to the introduction of a tax on global intangible low-taxed income ("GILTI"). In this issue we review the GILTI framework and what this means for IP relocations, as well as changes to the statutory definition of IP and valuation considerations for transfer pricing purposes.

The Act creates both opportunities and unintended consequences with respect to corporate location decisions. In this issue we discuss new opportunities such as incentives available for investments in U.S. Opportunity Zones tied to low income communities. We also explore potential unintended consequences with respect to research and development, which may see a shift overseas due to a reduction in tax incentives.

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

Read this issue to find out more.

Industry Market Multiples Online

Valuation Insights Industry Market Multiples are online with data back to 2010. Analyze market multiple trends over time across industries and geographies.
www.duffandphelps.com/multiples

Valuation Implications of U.S. Tax Reform

The Tax Cuts and Jobs Act (the Act") became effective on December 22, 2017. The provisions of the 2017 Act impact not only U.S. companies and their foreign operations, but also non-U.S. companies conducting business in the United States. The purpose of this article is to highlight the changes that valuation and corporate finance professionals must consider when performing valuations of businesses and intangible assets.

Impact of Corporate Tax Law Changes

Changes to Corporate Tax Rate

The permanent reduction of the U.S. corporate tax rate to 21 percent will, all else being equal, increase the value of businesses and assets based in the U.S. because after-tax cash flows will be higher. However, if one is performing a discounted cash flow ("DCF") analysis, this increase in expected future after-tax cash flows may be somewhat offset by a slight increase in the cost of capital. Refer to the article on page four for a detailed discussion on this topic. We believe that the impact of a lower corporate tax rate and other changes to be discussed will generally result in higher valuations despite the increase in the cost of capital. This is corroborated by the equity markets' strong positive response to the passage of tax reform.

Changes to Depreciation of Qualified Property

Qualified property will be eligible for 100 percent bonus depreciation, meaning that the purchase price for this property will be immediately deductible. This bonus depreciation is available for purchases of both new and used property, including qualified assets acquired in a M&A transaction. When structured either as an asset transaction or if a Section 338(h)(10)[1] election is made, the buyer will be able to deduct the 100 percent bonus depreciation on qualified assets acquired in a business combination. It should be noted that the 100 percent bonus depreciation is only available for qualified assets acquired through December 31, 2022. Thereafter, the bonus depreciation percentage declines for purchases in each year through 2026. The portion of a qualified asset's cost not subject to 100 percent expensing in a particular year is depreciated according to the MACRS tables.

Changes to Treatment of Research and Experimental Costs

Under the 2017 Act, the treatment of specified Research and Experimental (R&E) expenditures, including software development, has changed. Beginning in 2022, specified R&E expenditures incurred in the U.S. must be capitalized and amortized ratably over a five-year period rather than expensed. If incurred outside of the U.S., they will be amortized over a 15-year period.

The changes to depreciation and R&E expenditures noted above will require that DCF models be extended for at least 10 years to properly capture the impact of these changes in forecasted cash taxes in both the "interim" year projections, as well as in the terminal year cash flow. It is advisable to develop a separate, more granular, operating cash tax expense calculation within the DCF model, which can then be used as an input when preparing financial projections for valuation purposes.

Treatment of Net Operating Losses

Under the Act, for net operating losses ("NOLs") arising after December 31, 2017, a taxpayer's ability to utilize NOL carryforwards is limited to 80 percent of taxable income in each year. These NOLs can be carried forward indefinitely, unlike NOLs that existed prior to the enactment date, which had expiration dates associated with them. There is no change to the pre- Act NOLs, nor is there any change to the Section 382 limitation rules. In performing a valuation under the income approach, companies that have unutilized NOLs and which are expected to generate additional NOLs will require separate tracking of these two NOL "buckets" in order to accurately determine cash taxes. In addition, another "bucket" of NOLs may be necessary in cases where a company has either Subpart F or "GILTI" income (to be discussed further in this article) from any of its controlled foreign corporation subsidiaries.

Pass-Through Entities

Until the passage of the Act, there was a decided valuation advantage for most (but not all) closely-held companies to be organized as pass-through entities, especially when the corporation distributed cash dividends to shareholders. A pass-through entity is either an S corporation, limited liability company (LLC), or a partnership. The reason for this is that a C corporation's income is taxed once at the corporate level, and then gets taxed again at the

1. Internal Revenue Code Section 338 (h)(10) is an election to treat a stock acquisition as an asset acquisition for U.S. Federal Income Tax purposes.

shareholder level upon a payment of dividends. Unlike C corporations, pass-through entities generally do not pay tax at the corporate level, but rather the income is reported at the shareholder level, and thus taxed only once. Under the Act, C corporations that were previously taxed at the 35 percent federal tax rate will now be taxed at 21 percent, while dividends to shareholders are taxed at an effective rate of 23.8 percent if certain income thresholds are reached. In contrast, S corporations will continue to be effectively taxed at individual tax rates, which will be temporarily lower through the end of 2025. To put C corporations and S corporations on a more equivalent footing for fiscal years prior to January 1, 2026, the Act allows certain S corporation shareholders, LLC members, and partners to deduct 20 percent of their qualified business income (QBI) in arriving at their taxable income.[2] However, pass through income derived from service based businesses in the fields of law, health, accounting, and certain other professions are not eligible for this deduction. Thus, in performing a valuation of a pass-through entity, the analyst needs to consider whether the 20 percent deduction applies and to be mindful that both the lower individual income tax rates and the QBI deduction expires after 2025. This is of particular importance when estimating the terminal value of a pass-through entity.

Further, consideration needs to be given to the fact that individuals are no longer allowed to deduct state and local income taxes exceeding $10,000, while C corporations can continue to deduct corporate state and local taxes. These factors all need to be considered in the valuation of a pass-through entity using an income approach.

Impact of International Tax Changes

Finally, although this article is not focused on the changes in the international tax arena it is important to note that they are numerous and significant. The remainder of this article highlights a few key changes and their impact on valuations of legal entities and intangible property.[3]

Repatriation Toll Charge

The overarching theme in the international tax arena is the sea change from a system of worldwide taxation towards a territorial system. As a transition to the new system, the Act imposes a mandatory tax on post-1986 accumulated foreign earnings and profits (E&P). Foreign earnings held in cash or cash equivalents are taxed one time at a 15.5 percent rate, and accumulated foreign earnings held in illiquid assets are taxed at 8 percent. This tax is mandatory, regardless of whether cash or other property is distributed to a U.S. parent entity. Taxpayers have the option to pay this tax over an eight-year period.

Once this tax is paid on foreign E&P, companies will be allowed to take a 100 percent tax deduction for the foreign source portion of dividends received, meaning that they will be able to distribute cash back to the U.S. essentially tax free. In performing valuations of U.S.-domiciled legal entities, the transition tax payment will need to be factored in and should be treated as a non-equity claim. All future repatriation of cash and other property to the U.S. can be made on a tax-free basis.

Definition of Intangible Property

The Act expands the definition of intangible property to include goodwill, going concern value, and workforce in place. This definition of intangibles has important repercussions for valuations of intangibles being transferred out or into a U.S. entity. Under this definition, virtually everything of value will be subject to taxation when moving IP cross border, with a few exceptions.

Tax on Global Intangible Low-Taxed Income

The Act introduces taxation of a portion of global intangible low-taxed income (“GILTI”), with a reduction for foreign-derived intangible income (“FDII”). This complex provision may have an impact on the appropriate effective tax rate to be used in the valuation of a U.S. legal entity or corporation that has GILTI.

Base Erosion and Anti-Abuse Tax

The Act imposes a minimum base erosion and anti-abuse tax (“BEAT”) on companies of a certain size. This minimum tax could yield significant additional taxes for companies which make certain types of outbound payments (including royalties, service charges and interest payments) to related parties that exceed a threshold “base erosion percentage” of deductions. As is the case with the

2. The QBI deduction is generally limited to the greater of either (a) 50 percent of the W-2 wages related to qualified business or (b) the sum of 25 percent of the W-2 wages related to the qualified business plus 2.5 percent of the unadjusted basis of all qualified property
3. This topic will be discussed in further detail in future issues of Valuation Insights

GILTI tax, it is important to consider the incremental taxes to be borne by an entity that is either domiciled in the U.S., or that has "checked the box" to be treated as a U.S. entity for tax purposes. The imposition of either the BEAT or GILTI tax would likely result in the consolidated U.S. tax group having an effective federal tax rate that differs from the new statutory rate of 21 percent.

Interest Expense Apportionment

The Act prohibits members of a U.S. affiliated group from allocating interest expense based on the fair market value of assets for purposes of Section 861/864. Instead, the members must allocate interest expense based on the adjusted tax basis of assets.

Summary and Conclusion

The Act will require management and valuation analysts to revisit their financial projections to ensure that they properly reflect (1) the direct impacts of changes in the tax law; (2) any changes in capital investment strategy driven by changes in the tax law; and (3) any changes in projected revenue and expenses resulting from changes in the economy that may be spurred by potential increases in economic activity, at least over the near-term.

The changes in tax law resulting from the 2017 Act will have significant ramifications on the valuation of legal entities, reporting units, closely-held businesses and intangible assets, and will require a diligent analysis and consideration of each of the potential impacts discussed above. Further, we are likely to see an increase in M&A activity, driven by the repatriation of cash from abroad, the lower corporate tax rate and the 100 percent bonus depreciation that is applicable to both new capital investment as well as to qualified property acquired in asset transactions

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How will the U.S. Tax Reform Impact Cost of Capital?

The Tax Cuts and Jobs Act (the "Act"), which became effective on December 22, 2017, has a number of important implications for business and asset valuations. Cost of capital, a key component of any valuation analysis, will be specifically impacted by the new provisions of the Act. The Act's impact on value is really a story of two powerful competing forces: the increase in value caused by the expectation of increased net cash flows, and the decrease in value caused by potentially higher costs of capital.

Before exploring the impacts of the Act on cost of capital, it is important to remember the components of the Discounted Cash Flow (DCF) valuation method. DCF value is a function of expected future net cash flows (the numerator) and present value factors (the denominator), which are a function of the estimated cost of capital or the discount rate.

The Act will generally increase the available net cash flows for businesses, increasing the numerator in a DCF model, leading to greater value. We have seen the run-up in stock prices generally driven by the expectation that net cash flows will increase, allowing for an increased return of profits to shareholders (in the form of increased dividends and stock buybacks).

But the impact on the cost of capital is more complicated.

The cost of equity capital, in its simplest form, is typically expressed as a function of the risk-free rate, a market risk factor known as "beta", and the equity risk premium, which is the equity return that investors demand to compensate them for investing in a diversified portfolio of large common stocks rather than investing in risk-free securities.

The Federal Reserve has started implementing what the financial press have coined "QExit"- a reduction in the Fed's massive holdings of mortgage backed securities and U.S. Treasury debt. Those holdings were designed to keep long-term interest rates down, thereby holding down the cost of equity capital. Now the Fed has determined that the economy is strong enough for interest rates to return to more normal levels, which will progressively lead to an increase in the cost of equity.

Beta risk is a function of business risk and financing risk. To the extent that business investment is financed by debt capital, beta risk increases. However, that risk is partially mitigated by the tax deductibility of interest expense, reducing the true cost of interest expense. The Act will increase the true interest cost by reducing the income tax savings due to the deduction of interest expense in calculating taxable income.

For example, assume a business has $10 million in interest expense. At a 37% income tax rate, the true cost of debt capital is $10 million x (1 - 37%) = $6.3 million. But at a 21% income tax rate, the true cost of interest is $10 million x (1 - 21%) = $7.9 million, increasing the true cost of debt capital by 25% and increasing the financial portion of beta risk. However, one also needs to consider that a business may have some portion of its operations and profits earned in countries outside of the U.S., making it important to consider all the relevant taxing jurisdictions in assessing a company's global effective tax rate and consequent interest tax shield.

Finally, the weighted average or overall cost of capital to the business is a function of both the cost of equity capital and the cost of debt capital based on their proportionate amounts in the capital structure.

We have already seen that the combined actions of the Fed and the Act will likely increase components of the cost of equity capital and increase the true cost of debt capital.

A newly-introduced provision will further reduce the value of interest tax shields, thereby further increasing the after-tax cost of debt. The Act caps the ability by corporations to deduct interest expense above certain thresholds. For businesses with revenues more than $25 million, the interest deduction for years 2018 through 2021 is capped at 30% of "adjusted taxable income," which is similar to earnings before interest expense, income taxes, depreciation and amortization (EBITDA). Thereafter the interest deduction is capped at 30% of "adjusted taxable income" whose definition then switches to a measure that is similar to earnings before interest and income taxes (EBIT). These limitations will cause the cost of debt capital financing to increase even more.

Thus, for many larger businesses that have grown accustomed to relying on debt capital financing, their weighted average cost of capital will likely increase as a result of the Act.

These relationships – the impact on beta risk and on the cost of debt capital – are becoming increasingly complex. Analysts must understand these impacts to correctly estimate the cost of capital. Applying old formulas mechanically will likely prove to be unreliable as we move forward in this new tax regime.

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Transfer Pricing Considerations When Relocating IP

The Tax Cuts and Jobs Act, (the "Act") became effective as of December 22, 2017, and will lead many companies to evaluate the decision of potentially relocating their intangible property ("IP") in the future. One of many key provisions[1] from the Act that may impact this decision is the global intangible low-taxed income ("GILTI") provision which subjects GILTI income to current U.S. taxation.[2] At a high level, GILTI is calculated as aggregate net controlled foreign corporation ("CFC") income less net deemed tangible income, with net deemed tangible income calculated as a 10% return on the aggregate CFC tangible assets.

Deductions are allowed against the GILTI in the amount of 50% of the amount of GILTI included in the U.S. corporation's gross income, in addition to 80% of applicable foreign tax credits. It should be noted that the GILTI deduction rate is reduced to 37.5% for taxable years beginning after December 31, 2025. While GILTI may reduce certain incentives to move IP, many taxpayers may still benefit from IP movements because of existing tax rate differentials between jurisdictions and the various deductions allowed within the GILTI framework.

Tax reform also codified many changes that the IRS has tried to implement to transfer pricing related regulations in recent years. One of these changes is the revised statutory definition of IP in section 936(h)(3)(B) as stated in the Act. The Act changed the meaning of IP within that section to include workforce in place; goodwill (both foreign and domestic); going concern value; and the residual category of "any similar item," the value of which is not attributable to tangible property or the services of an individual. The Act also requires the use of an aggregation approach for the valuation of the IP being transferred if this approach achieves a more reliable result than an asset-by-asset approach. In addition, the Act codifies the use of the realistic alternative principles to determine valuation with respect to IP transactions.

Due to these changes resulting from the Act, the income method may be applied even more broadly than it historically has been when transferring IP, and may be harder to challenge as the best transfer pricing method. When applying a method of this type, there are several key considerations for the taxpayer. One consideration is the selection of the financial forecasts used for valuing the IP. It is important that the projections are defensible and evidence of the projections robustness and completeness can be documented. In situations where the projections are highly uncertain, a preferred approach may be to consider several projection scenarios and apply various weightings depending on each scenario's probability.

Another key consideration is the useful life of the IP. The useful life of IP can vary greatly depending on the industry and IP type, among other factors. A preferred approach with regards to useful life would be to have multiple sources that indicate the same or similar useful life for the IP being transferred. Another item to consider is whether there are any facts or circumstances that could indicate an indefinite useful life for the IP or the use of a terminal value in the IP valuation calculations.

Discount rates are another key consideration when applying an income based valuation method. In general, a discount rate is intended to reflect all risks of ownership of an asset and the associated risks of realizing the stream of projected future cash flows generated by the asset. The discount rate used to value the IP should reflect the risk profile of the IP itself and not the risk profile of the entity it is being transferred to or from. When segmenting IP income from the income of routine functions, it may be appropriate to apply a different discount rate to the routine, less risky income than to the intangible, more risky income. Care should be taken not to double-count risks if one is using probability-weighted projections.

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[1] Another key international tax provision included in the Act which may impact the decision of potentially relocating IP is the Base erosion anti-abuse tax ("BEAT"). At a high level the BEAT would apply minimum tax to U.S. income excluding payments to foreign related parties and could be another source of additional U.S. tax for U.S. companies.

[2] It is noteworthy that while the GILTI acronym specifically mentions intangible income, other types of income will be categorized as GILTI if the income exceeds the net deemed tangible income amount.

Location Decisions: Opportunities and Unintended Consequences of Tax Reform

The Tax Cuts and Jobs Act passed in December 2017 brings long anticipated cuts to the corporate income tax rate. Lawmakers hope that these cuts will make the U.S. a more attractive investment location, bringing corporate tax rates more in line with other major economies around the globe. To minimize the increase to the U.S. budget deficit, several key tax credits and deductions have been eliminated or reduced. For most taxpayers, the reduction in tax rate should offset the lower availability of credits, but there may be some sectors that will be more motivated to invest abroad.

Whom Does Tax Reform Benefit?

Just about any entity doing business in the U.S. will pay less tax on corporate income. Prior to tax reform, while the top corporate federal income tax rate was 35%, the average effective U.S. tax rate for corporations was 18.6%. However, when multinational companies are making location decisions, many modeling tools are not sophisticated enough to compare more than simple headline rates, so the lower rate of 21% should bode well for getting the U.S. on site selection short lists.

U.S. investors with overseas operations may also pay less tax on their worldwide profits. Previously, US-based companies were required to pay U.S. tax on income from all sources, but could generally take any foreign taxes paid as a credit against their U.S. tax liability. Effective January 1, income earned outside the U.S. will not be subject to tax in the U.S., unless the effective taxes paid on that foreign earned income are less than 10.5% (or certain other exceptions apply regarding certain types of income). This change from a worldwide tax system to a territorial tax system will not only bring the U.S. in line with almost every other country in the world, but will put U.S. companies on a level playing field with their international competitors.

U.S. Opportunity Zones

While numerous credits and deductions have been removed or reduced, the newly introduced Qualified Opportunity Zones will help spur new investment in low-income areas. The program provides an incentive for investors to re-invest their unrealized capital gains into Opportunity Funds in exchange for a temporary

tax deferral and other benefits tied to long-term holdings. Opportunity Funds are investment vehicles that specialize in providing access to capital in low-income community Opportunity Zones, which will be designated by the governors of every U.S. state and territory. Census tract income levels will determine the location of the zones, but governors also have discretion to add a contiguous census tract to a qualifying zone. This is an opportune time to discuss projects planned for locations in or near qualifying census tracts.

Gains on investments into these funds are deferred if held five to seven years, and exempted if held 10 years or more.

Whom Does Tax Reform Penalize?

Companies conducting research and development in the U.S. will lose two forms of tax incentives. The Orphan Drug tax credit allowed companies a credit on 50% of the costs of developing certain drugs impacting 200,000 people or fewer. Tax reform has cut that credit in half to 25%. On top of this, many R&D costs previously allowed as an expense in the year incurred, must now be amortized over a period of five years (15 years for expenses incurred outside the U.S.). Manufacturers are also losing the 9% domestic production deduction.

What Might be the Unintended Consequences of Tax Reform?

We may see a shift in R&D and manufacturing from the U.S. to overseas subsidiaries, where lucrative R&D incentives have been offered for decades. The European Union (E.U.), for example, funds cash grants through its Horizon 2020 program, with funding of almost 80 billion euros ($97 billion). Cash grants and tax incentives are also offered throughout the E.U. from the individual member states. With the more favorable territorial tax system, low taxing jurisdictions such as Ireland (12.5% corporate tax rate) or Hungary (9% tax rate), combined with generous tax and cash support, could make for enticing R&D center (and even manufacturing) locations. The U.K. (20% tax rate) offers both tax incentives and cash grants for R&D. France's R&D tax credit of 30% of most R&D expenditures is acknowledged as one of the best in the world. In Asia-Pacific, Singapore offers cash grants ranging from 30%-50% to new R&D facilities. We expect to see many investors weighing their R&D site location options as perhaps an unintended consequence of tax reform.

What does this mean for investors?

As companies are making location decisions, once they have settled on a short list of locations that will meet their business needs, they should include in their financial modeling scenarios the more favorable tax rates, added benefits in Opportunity Zones, and the offsets in costs found in tax and non-tax incentives. For companies considering investments and/or R&D abroad, understanding and taking full advantage of the lucrative cash grants and generous tax incentives available outside the U.S. will be necessary to remain competitive.

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North American Industry Market Multiples

AS OF DECEMBER 31, 2017

Industry	Market Value of Equity to Net Income		MVIC to EBIT		MVIC to EBITDA	
	U.S.	Canada	U.S.	Canada	U.S.	Canada
Energy	15.2	19.5	22.1	22.8	12.4	9.4
Energy Equipment & Services	42.6	21.5	32.5	15.7	17.2	11.4
Integrated Oil & Gas	—	—	—	—	—	—
Materials	21.0	14.4	17.4	14.8	10.9	8.6
Chemicals	21.4	24.0	17.6	21.5	12.0	12.6
Diversified Chemicals	—	—	—	—	11.3	—
Specialty Chemicals	25.8	—	18.7	—	13.8	—
Construction Materials	26.1	—	20.5	—	12.4	—
Metals & Mining	15.4	13.9	14.0	14.6	10.1	7.9
Paper & Forest Products	19.6	12.8	16.1	9.8	9.9	7.2
Industrials	23.5	19.9	18.3	18.1	13.1	11.0
Aerospace & Defense	23.9	23.7	18.2	22.2	15.0	14.7
Industrial Machinery	27.9	26.8	20.9	22.3	15.1	23.1
Commercial Services & Supplies	20.4	21.3	15.4	22.3	10.9	10.4
Road & Rail	31.4	35.4	20.9	17.8	11.4	11.9
Railroads	22.7	—	15.6	—	11.7	—
Consumer Discretionary	20.0	16.8	15.3	16.6	11.0	11.9
Auto Parts & Equipment	15.9	—	11.5	—	8.6	—
Automobile Manufacturers	—	—	—	—	12.7	—
Household Durables	17.2	—	15.8	—	13.2	—
Leisure Products	17.3	—	13.3	—	11.8	—
Textiles, Apparel & Luxury Goods	22.2	—	15.2	—	12.2	—
Restaurants	24.1	19.5	19.5	17.5	11.4	18.9
Broadcasting	15.2	—	13.5	9.9	10.5	12.7
Cable & Satellite	23.1	—	18.8	—	10.9	—
Publishing	23.3	—	15.2	39.0	9.6	—
Multiline Retail	14.2	—	10.6	—	6.9	—

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	22.9	23.0	17.4	19.3	12.6	13.8
Beverages	24.9	25.8	24.8	27.1	21.1	16.8
Food Products	22.3	20.3	17.7	17.3	13.4	14.1
Household Products	25.3	—	17.5	—	14.0	—
Health Care	25.3	23.7	21.7	21.2	16.1	13.9
Health Care Equipment	39.9	—	29.2	—	22.2	—
Health Care Services	21.9	—	16.1	—	12.4	—
Biotechnology	17.6	—	18.8	—	17.5	—
Pharmaceuticals	22.0	—	17.9	31.5	13.9	21.2
Information Technology	24.9	33.1	22.7	28.2	17.5	21.1
Internet Software & Services	24.5	23.0	29.6	16.5	27.4	16.5
IT Services	28.4	45.9	20.7	46.6	14.6	18.8
Software	35.7	47.9	33.3	50.0	27.5	23.6
Technology Hardware & Equipment	21.8	31.8	19.7	18.4	13.6	15.5
Communications Equipment	21.2	31.4	20.1	28.0	15.6	16.0
Technology Hardware, Storage & Peripherals	16.3	—	18.3	—	12.5	—
Semiconductors	37.8	—	27.3	—	19.6	—
Telecommunication Services	18.5	—	20.5	15.8	7.9	8.8
Integrated Telecommunication Services	13.6	—	15.6	—	6.7	—
Wireless Telecommunication Services	—	—	21.9	—	7.9	—
Utilities	23.3	17.5	19.2	19.1	12.0	11.9
Electric Utilities	20.6	—	17.5	—	10.5	—
Gas Utilities	24.1	—	18.8	—	12.8	—

Industry	Market Value of Equity to Net Income		Market Value of Equity to Book Value	
	U.S.	Canada	U.S.	Canada
Financials	18.2	12.7	1.4	1.5
Banks	18.1	12.5	1.4	1.8
Investment Banking & Brokerage	23.0	—	1.8	1.5
Insurance	19.9	12.3	1.4	1.4

Industry Market Multiples are available online!
Visit www.duffandphelps.com/multiples

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 79 (U.S.), and 30 (Canada); the median number of companies in the calculation sample was 40 (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.

European Industry Market Multiples

AS OF DECEMBER 31, 2017

Industry	Market Value of Equity to Net Income	MVIC to EBIT	MVIC to EBITDA
	Europe	Europe	Europe
Energy	12.7	17.9	9.8
Energy Equipment & Services	14.0	17.6	11.1
Integrated Oil & Gas	26.1	16.0	8.5
Materials	18.2	16.8	10.5
Chemicals	20.0	18.1	11.1
Diversified Chemicals	19.9	14.9	9.4
Specialty Chemicals	21.4	20.7	13.6
Construction Materials	19.0	17.8	11.1
Metals & Mining	15.1	15.5	9.5
Paper & Forest Products	17.5	16.3	10.3
Industrials	20.4	17.8	12.3
Aerospace & Defense	21.0	21.6	14.3
Industrial Machinery	24.8	19.2	13.7
Commercial Services & Supplies	20.2	18.9	11.9
Road & Rail	14.0	18.7	10.0
Railroads	12.3	20.8	9.6
Consumer Discretionary	19.6	16.6	11.6
Auto Parts & Equipment	15.4	13.4	8.6
Automobile Manufacturers	9.0	15.7	11.5
Household Durables	16.0	14.4	10.6
Leisure Products	26.9	19.6	15.6
Textiles, Apparel & Luxury Goods	25.4	19.4	13.1
Restaurants	21.8	15.6	10.9
Broadcasting	17.6	16.7	12.6
Cable & Satellite	40.8	24.1	10.1
Publishing	18.3	14.2	10.8
Multiline Retail	26.4	15.5	11.6

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Industry	Market Value of Equity to Net Income	MVIC to EBIT	MVIC to EBITDA
	Europe	Europe	Europe
Consumer Staples	23.0	18.2	12.9
Beverages	26.2	21.3	14.5
Food Products	20.2	16.9	11.8
Household Products	26.3	17.5	12.5
Health Care	29.8	23.4	17.2
Health Care Equipment	29.9	23.4	16.7
Health Care Services	31.4	17.9	13.8
Biotechnology	30.3	29.0	24.9
Pharmaceuticals	26.1	21.6	15.3
Information Technology	26.2	21.5	16.3
Internet Software & Services	32.9	26.5	20.4
IT Services	23.3	17.5	14.8
Software	38.2	27.4	22.6
Technology Hardware & Equipment	22.6	18.3	14.2
Communications Equipment	23.4	26.9	16.5
Technology Hardware, Storage & Peripherals	23.0	19.8	19.4
Semiconductors	27.0	28.0	20.0
Telecommunication Services	23.5	19.4	9.8
Integrated Telecommunication Services	20.0	17.2	8.8
Wireless Telecommunication Services	13.5	21.4	9.1
Utilities	16.1	19.5	10.7
Electric Utilities	15.2	16.2	9.4
Gas Utilities	16.2	17.4	12.8

Industry	Market Value of Equity to Net Income	Market Value of Equity to Book Value
	Europe	Europe
Financials	13.2	1.2
Banks	11.1	0.7
Investment Banking & Brokerage	17.6	2.0
Insurance	14.7	1.3

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 90 and the median number of companies in the calculation sample was 39. 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.

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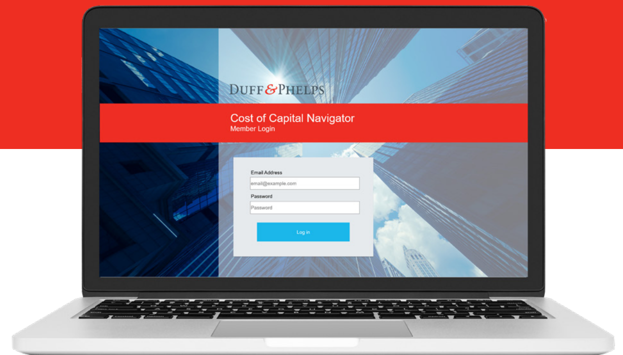

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Register: www.duffandphelps.com/taxreformwebcast

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Duff & Phelps is the premier global valuation and corporate finance advisor with expertise in complex valuation, disputes and investigations, M&A, real estate, restructuring, and compliance and regulatory consulting. The firm's more than 2,000 employees serve a diverse range of clients from offices around the world.

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