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CFA Program

EQUITY VALUATION

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Equity Valuation

LEARNING MODULE

1

Equity Valuation: Applications and Processes

by Jerald E. Pinto, PhD, CFA, Elaine Henry, PhD, CFA, Thomas R. Robinson, PhD, CFA, CAIA, and John D. Stowe, PhD, CFA.

Jerald E. Pinto, PhD, CFA, is at CFA Institute (USA). Elaine Henry, PhD, CFA, is at Stevens Institute of Technology (USA). Thomas R. Robinson, PhD, CFA, CAIA, is at Robinson Global Investment Management LLC, (USA). John D. Stowe, PhD, CFA, is at Ohio University (USA).

LEARNING OUTCOMES

Mastery	*The candidate should be able to:*
☐	define valuation and intrinsic value and explain sources of perceived mispricing
☐	explain the going concern assumption and contrast a going concern value to a liquidation value
☐	describe definitions of value and justify which definition of value is most relevant to public company valuation
☐	describe applications of equity valuation
☐	describe questions that should be addressed in conducting an industry and competitive analysis
☐	contrast absolute and relative valuation models and describe examples of each type of model
☐	describe sum-of-the-parts valuation and conglomerate discounts
☐	explain broad criteria for choosing an appropriate approach for valuing a given company

1 INTRODUCTION

- ☐ define valuation and intrinsic value and explain sources of perceived mispricing
- ☐ explain the going concern assumption and contrast a going concern value to a liquidation value
- ☐ describe definitions of value and justify which definition of value is most relevant to public company valuation

Every day, thousands of participants in the investment profession—investors, portfolio managers, regulators, researchers—face a common and often perplexing question: What is the value of a particular asset? The answers to this question usually influence success or failure in achieving investment objectives. For one group of those participants—equity analysts—the question and its potential answers are particularly critical because determining the value of an ownership stake is at the heart of their professional activities and decisions. **Valuation** is the estimation of an asset's value based on variables perceived to be related to future investment returns, on comparisons with similar assets, or, when relevant, on estimates of immediate liquidation proceeds. Skill in valuation is a very important element of success in investing.

We address some basic questions: What is value? Who uses equity valuations? What is the importance of industry knowledge? How can the analyst effectively communicate his analysis? We answer these and other questions and lay a foundation for the topics that follow.

The following section defines value and describes the various uses of equity valuation. The subsequent sections examine the steps in the valuation process, including the analyst's role and responsibilities, and discuss how valuation results are communicated. They also provide some guidance on the content and format of an effective research report.

Value Definitions and Valuation Applications

Before summarizing the various applications of equity valuation tools, it is helpful to define what is meant by "value" and to understand that the meaning can vary in different contexts. The context of a valuation, including its objective, generally determines the appropriate definition of value and thus affects the analyst's selection of a valuation approach.

What Is Value?

Several perspectives on value serve as the foundation for the variety of valuation models available to the equity analyst. Intrinsic value is the necessary starting point, but other concepts of value—going-concern value, liquidation value, and fair value—are also important.

Intrinsic Value

A critical assumption in equity valuation, as applied to publicly traded securities, is that the market *price* of a security can differ from its intrinsic *value*. The **intrinsic value** of any asset is the value of the asset given a hypothetically complete understanding of the asset's investment characteristics. For any particular investor, an estimate of intrinsic value reflects his or her view of the "true" or "real" value of an asset. If one assumed that the market price of an equity security perfectly reflected its intrinsic

value, "valuation" would simply require looking at the market price. Roughly, it is just such an assumption that underpins traditional efficient market theory, which suggests that an asset's market price is the best available estimate of its intrinsic value.

An important theoretical counter to the notion that market price and intrinsic value are identical can be found in the Grossman–Stiglitz paradox. If market prices, which are essentially freely obtainable, perfectly reflect a security's intrinsic value, then a rational investor would not incur the costs of obtaining and analyzing information to obtain a second estimate of the security's value. If no investor obtains and analyzes information about a security, however, then how can the market price reflect the security's intrinsic value? The **rational efficient markets formulation** (Grossman and Stiglitz 1980) recognizes that investors will not rationally incur the expenses of gathering information unless they expect to be rewarded by higher gross returns compared with the free alternative of accepting the market price. Furthermore, modern theorists recognize that when intrinsic value is difficult to determine, as is the case for common stock, and when trading costs exist, even further room exists for price to diverge from value (Lee, Myers, and Swaminathan 1999).

Thus, analysts often view market prices both with respect and with skepticism. They seek to identify mispricing, and at the same time, they often rely on price eventually converging to intrinsic value. They also recognize distinctions among the levels of **market efficiency** in different markets or tiers of markets (for example, stocks heavily followed by analysts and stocks neglected by analysts). Overall, equity valuation, when applied to market-traded securities, admits the possibility of mispricing. Throughout the discussion, then, we distinguish between the market price, P, and the intrinsic value ("value" for short), V.

For an active investment manager, valuation is an inherent part of the attempt to produce investment returns that exceed the returns commensurate with the investment's risk—that is, positive excess risk-adjusted returns. An excess risk-adjusted return is also called an **abnormal return** or **alpha**. (Return concepts will be more fully discussed later.) The active investment manager hopes to capture a positive alpha as a result of his or her efforts to estimate intrinsic value. Any departure of market price from the manager's estimate of intrinsic value is a perceived **mispricing** (i.e., a difference between the estimated intrinsic value and the market price of an asset).

These ideas can be illuminated through the following expression that identifies two possible sources of perceived mispricing:

$$V_E - P = (V - P) + (V_E - V),$$

where

V_E = estimated value

P = market price

V = intrinsic value

[Note: One can derive the above expression as $V_E - P = V_E - P + V - V = (V - P) + (V_E - V)$.*]*

This expression states that the difference between a valuation estimate and the prevailing market price is, by definition, equal to the sum of two components. The first component is the true mispricing—that is, the difference between the true but unobservable intrinsic value V and the observed market price P (this difference contributes to the abnormal return). The second component is the difference between the valuation estimate and the true but unobservable intrinsic value—that is, the error in the estimate of the intrinsic value.

To obtain a useful estimate of intrinsic value, an analyst must combine accurate forecasts with an appropriate valuation model. The quality of the analyst's forecasts, in particular the expectational inputs used in valuation models, is a key element in determining investment success. For active security selection to be consistently successful, the manager's expectations must differ from consensus expectations and be, on average, correct as well.

Uncertainty is constantly present in equity valuation. Confidence in one's expectations is always realistically partial. In applying any valuation approach, analysts can never be sure that they have accounted for all the sources of risk reflected in an asset's price. Because competing equity risk models will always exist, there is no obvious final resolution to this dilemma. Even if an analyst makes adequate risk adjustments, develops accurate forecasts, and employs appropriate valuation models, success is not assured. Temporal market conditions may prevent the investor from capturing the benefits of any perceived mispricing. Convergence of the market price to perceived intrinsic value may not happen within the investor's investment horizon, if at all. So, besides evidence of mispricing, some active investors look for the presence of a particular market or corporate event (**catalyst**) that will cause the marketplace to re-evaluate a company's prospects.

Going-Concern Value and Liquidation Value

A company generally has one value if it is to be immediately dissolved and another value if it will continue in operation. In estimating value, a **going-concern assumption** is the assumption that the company will continue its business activities into the foreseeable future. In other words, the company will continue to produce and sell its goods and services, use its assets in a value-maximizing way for a relevant economic time frame, and access its optimal sources of financing. The **going-concern value** of a company is its value under a going-concern assumption. Models of going-concern value are our focus.

Nevertheless, a going-concern assumption may not be appropriate for a company in financial distress. An alternative to a company's going-concern value is its value if it were dissolved and its assets sold individually, known as its **liquidation value**. For many companies, the value added by assets working together and by human capital applied to managing those assets makes estimated going-concern value greater than liquidation value (although, a persistently unprofitable business may be worth more "dead" than "alive"). Beyond the value added by assets working together or by applying managerial skill to those assets, the value of a company's assets would likely differ depending on the time frame available for liquidating them. For example, the value of nonperishable inventory that had to be immediately liquidated would typically be lower than the value of inventory that could be sold during a longer period of time (i.e., in an "orderly" fashion). Thus, such concepts as **orderly liquidation value** are sometimes distinguished.

Fair Market Value and Investment Value

For an analyst valuing public equities, intrinsic value is typically the relevant concept of value. In other contexts, however, other definitions of value are relevant. For example, a buy–sell agreement among the owners of a private business—specifying how and when the owners (e.g., shareholders or partners) can sell their ownership interest and at what price—might be primarily concerned with equitable treatment of both sellers and buyers. In that context, the relevant definition of value would likely be fair market value. **Fair market value** is the price at which an asset (or liability) would change hands between a willing buyer and a willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell. Furthermore, the concept of fair market value generally includes an assumption that both buyer and seller are informed of all material aspects of the underlying investment. Fair market value has often been used in valuation related to assessing taxes. In a financial

reporting context—for example, in valuing an asset for the purpose of impairment testing—financial reporting standards reference **fair value**, a related (but not identical) concept and provide a specific definition: "Fair value is the amount for which an asset could be exchanged, a liability settled, or an equity instrument granted could be exchanged between knowledgeable, willing parties in an arm's length transaction."

Assuming the marketplace has confidence that the company's management is acting in the owners' best interests, market prices should tend, in the long run, to reflect fair market value. In some situations, however, an asset is worth more to a particular buyer (e.g., because of potential operating synergies). The concept of value to a specific buyer taking account of potential synergies and based on the investor's requirements and expectations is called **investment value**.

Definitions of Value: Summary

Analysts valuing an asset need to be aware of the definition or definitions of value relevant to the assignment. For the valuation of public equities, an intrinsic value definition of values is generally relevant. Intrinsic value, estimated under a going-concern assumption, is the focus of these equity valuation sections.

APPLICATIONS OF EQUITY VALUATION

2

☐ describe applications of equity valuation

Investment analysts work in a wide variety of organizations and positions. As a result, they apply the tools of equity valuation to address a range of practical problems. In particular, analysts use valuation concepts and models to accomplish the following:

- *Selecting stocks*. Stock selection is the primary use of the tools presented here. Equity analysts continually address the same question for every common stock that is either a current or prospective portfolio holding or for every stock that he or she is responsible for covering: Is this security fairly priced, overpriced, or underpriced relative to its current estimated intrinsic value and relative to the prices of comparable securities?
- *Inferring* (*extracting*) *market expectations*. Market prices reflect the expectations of investors about the future performance of companies. Analysts may ask: What expectations about a company's future performance are consistent with the current market price for that company's stock? What assumptions about the company's fundamentals would justify the current price? (**Fundamentals** are characteristics of a company related to profitability, financial strength, or risk.) These questions may be relevant to the analyst for several reasons:

  - The analyst can evaluate the reasonableness of the expectations implied by the market price by comparing the market's implied expectations to his own expectations.
  - The market's expectations for a fundamental characteristic of one company may be useful as a benchmark or comparison value of the same characteristic for another company.

  To extract or reverse-engineer a market expectation, the analyst selects a valuation model that relates value to expectations about fundamentals and is appropriate given the characteristics of the stock. Next, the analyst

estimates values for all fundamentals in the model except the fundamental of interest. The analyst then solves for that value of the fundamental of interest that results in a model value equal to the current market price.

- *Evaluating corporate events*. Investment bankers, corporate analysts, and investment analysts use valuation tools to assess the impact of such corporate events as mergers, acquisitions, divestitures, spin-offs, and going-private transactions. Each of these events affects a company's future cash flows and thus the value of its equity. Furthermore, in mergers and acquisitions, the acquiring company's own common stock is often used as currency for the purchase. Investors then want to know whether the stock is fairly valued.
- *Rendering fairness opinions*. The parties to a merger may be required to seek a fairness opinion on the terms of the merger from a third party, such as an investment bank. Valuation is central to such opinions.
- *Evaluating business strategies and models*. Companies concerned with maximizing shareholder value evaluate the effect of alternative strategies on share value.
- *Communicating with analysts and shareholders*. Valuation concepts facilitate communication and discussion among company management, shareholders, and analysts on a range of corporate issues affecting company value.
- *Appraising private businesses*. Valuation of the equity of private businesses is important for transactional purposes (e.g., acquisitions of such companies or buy–sell agreements for the transfer of equity interests among owners when one of them dies or retires) and tax-reporting purposes (e.g., for the taxation of estates), among others. The absence of a market price imparts distinctive characteristics to such valuations, although the fundamental models are shared with public equity valuation. An analyst encounters these characteristics when evaluating initial public offerings, for example.
- *Share-based payment (compensation)*. Share-based payments (e.g., restricted stock grants) are sometimes part of executive compensation. Estimation of their value frequently depends on using equity valuation tools.

INFERRING MARKET EXPECTATIONS

On 2 January 2019, Apple Inc. (AAPL) lowered its revenue guidance citing a variety of reasons, one of which was the weakening economies in some of its Asian markets. Apple's share price fell approximately 10%. When Biogen Inc. announced on 21 March 2019 that its experimental drug for Alzheimer's had failed in late-stage clinical trials, the company's share price dropped approximately 30%. What contributes to such large single-day price movements—changes in estimates of underlying intrinsic value, or market overreaction to negative news?

A rich stream of academic research probes overall market overreaction and underreaction based on large samples—for example, De Bondt and Thaler (1985), Abarbanell and Bernard (1992), and more recently, Bordalo et al. (2017) and Bouchaud et al. 2018). However, one classic research study addresses the topic with a case study of a single such dramatic price drop. This case study, shown in Exhibit 1, is useful for studying equity valuation.

Exhibit 1:

Cornell's (2001) case study focuses on the 21 September 2000 press release by Intel Corporation containing information about its expected revenue growth for the third quarter of 2000. The announced growth fell short of the company's prior prediction by 2 to 4 percentage points and short of analysts' projections by 3 to 7 percentage points. In response to the announcement, Intel's stock price fell nearly 30% during the following five days—from $61.50 just prior to the press release to only $43.31 five days later.

To assess whether the information in Intel's announcement was sufficient to explain such a large loss of value, Cornell (2001) estimated the value of a company's equity as the present value of expected future cash flows from operations minus the expenditures needed to maintain the company's growth. (We will discuss such *free cash flow models* in detail at a later stage.)

Using a conservatively low discount rate, Cornell estimated that Intel's price before the announcement, $61.50, was consistent with a forecasted growth rate of 20% a year for the subsequent 10 years and then 6% per year thereafter. Intel's price after the announcement, $43.31, was consistent with a decline of the 10-year growth rate to well under 15% per year. In the final year of the forecast horizon (2009), projected revenues with the lower growth rate would be $50 billion below the projected revenues based on the pre-announcement price. Because the press release did not obviously point to any changes in Intel's fundamental long-run business conditions (Intel attributed the quarterly revenue growth shortfall to a cyclical slowing of demand in Europe), Cornell's detailed analysis left him skeptical that the stock market's reaction could be explained in terms of fundamentals.

Assuming Cornell's methodology was sound, one interpretation is that investors' reaction to the press release was irrational. An alternative interpretation is that Intel's stock was overvalued prior to the press release and that the press release was "a kind of catalyst that caused movement toward a more rational price, even though the release itself did not contain sufficient long-run valuation information to justify that movement" (Cornell 2001, p. 134).

EXAMPLE 1

Knowledge Check

1. Referring to Exhibit 1 on Cornell's study of the Intel stock price reaction, explain how an analyst could evaluate the two possible interpretations.

Solution:

To evaluate whether the market reaction to Intel's announcement was an irrational reaction or a rational reduction of a previously overvalued price, one could compare the expected 20% growth implicit in the pre-announcement stock price to some benchmark—for example, the company's actual recent revenue growth, the industry's recent growth, and/or forecasts for the growth of the industry or the economy. Finding the growth rate implied in the company's stock price is an example of using a valuation model and a company's actual stock price to infer market expectations.

Note: Cornell (2001) observed that the 20% revenue growth rate implied by the pre-announcement stock price was much higher than Intel's average growth rate during the previous five years, which occurred when the compa-

ny was much smaller. He concluded that Intel's stock was overvalued prior to the press release.

These examples illustrate the role of expectations in equity valuation and typical situations in which a given set of facts may be given various interpretations. These examples also illustrate that differences between market price and intrinsic value can occur suddenly, offering opportunities for astute investment managers to generate alpha.

3 UNDERSTANDING THE BUSINESS

☐ describe questions that should be addressed in conducting an industry and competitive analysis

In general, the valuation process involves the following five steps:

1. *Understanding the business*. Industry and competitive analysis, together with an analysis of financial statements and other company disclosures, provides a basis for forecasting company performance.
2. *Forecasting company performance*. Forecasts of sales, earnings, dividends, and financial position (pro forma analysis) provide the inputs for most valuation models.
3. *Selecting the appropriate valuation model*. Depending on the characteristics of the company and the context of valuation, some valuation models may be more appropriate than others.
4. *Converting forecasts to a valuation*. Beyond mechanically obtaining the "output" of valuation models, estimating value involves judgment.
5. *Applying the valuation conclusions*. Depending on the purpose, an analyst may use the valuation conclusions to make an investment recommendation about a particular stock, provide an opinion about the price of a transaction, or evaluate the economic merits of a potential strategic investment.

Most of these steps are addressed in detail later. Here, we provide an overview of each.

Understanding the Business

To forecast a company's financial performance as a basis for determining the value of an investment in the company or its securities, it is helpful to understand the economic and industry contexts in which the company operates, the company's strategy, and the company's previous financial performance. Industry and competitive analysis, together with an analysis of the company's financial reports, provides a basis for forecasting performance.

Industry and Competitive Analysis

Because similar economic and technological factors typically affect all companies in an industry, industry knowledge helps analysts understand the basic characteristics of the markets served by a company and the economics of the company. An airline industry analyst will know that labor costs and jet fuel costs are the two largest expenses of airlines and that in many markets airlines have difficulty passing through higher fuel

prices by raising ticket prices. Using this knowledge, the analyst may inquire about the degree to which different airlines hedge the commodity price risk inherent in jet fuel costs. With such information in hand, the analyst is better able to evaluate risk and forecast future cash flows. In addition, the analyst would run sensitivity analyses to determine how different levels of fuel prices would affect valuation.

Various frameworks exist for industry and competitive analysis. The primary usefulness of such frameworks is that they can help ensure that an analysis gives appropriate attention to the most important economic drivers of a business. In other words, the objective is *not* to prepare some formal framework representing industry structure or corporate strategy, but rather to use a framework to organize thoughts about an industry and to better understand a company's prospects for success in competition with other companies in that industry. Further, although frameworks can provide a template, obviously the informational content added by an analyst makes the framework relevant to valuation. Ultimately, an industry and competitive analysis should highlight which aspects of a company's business present the greatest challenges and opportunities and should thus be the subject of further investigation and/or more extensive **sensitivity analysis** (an analysis to determine how changes in an assumed input would affect the outcome of an analysis). Frameworks may be useful as analysts focus on questions relevant to understanding a business.

- *How attractive are the industries in which the company operates in terms of offering prospects for sustained profitability?*

Inherent industry profitability is one important factor in determining a company's profitability. Analysts should try to understand **industry structure**—the industry's underlying economic and technical characteristics—and the trends affecting that structure. Basic economic factors—supply and demand—provide a fundamental framework for understanding an industry. Porter's (1985, 1998, 2008) five forces that characterize industry structure—explained in detail at a later stage and summarized in Exhibit 2— can help analysts assess industry profitability and prospects for companies.

Exhibit 2: Summary of Porter's Forces

Force	Features
Rivalry (intra-industry)	Lower rivalry, few competitors and/or good brand identification
Threat of new entrants	High costs to enter (& other barriers)
Threat of substitutes	Few substitutes exist, or cost to switch is high
Bargaining power of suppliers	Many suppliers exist
Bargaining power of buyers	Many customers for an industry' s product exist

Analysts must also stay current on facts and news concerning all the industries in which the company operates, including recent developments (e.g., management, technological, or financial). Particularly important to valuation are any factors likely to affect the industry's longer term profitability and growth prospects, such as demographic trends.

- *What is the company's relative competitive position within its industry, and what is its competitive strategy?*

The level and trend of the company's market share indicate its relative competitive position within an industry. In general, a company's value is higher to the extent that it can create and sustain an advantage relative to its competition. Porter identifies several generic corporate strategies for achieving above-average performance:

i. Cost leadership—being the lowest cost producer while offering products comparable to those of other companies so that products can be priced at or near the industry average
ii. Differentiation—offering unique products or services along some dimensions that are widely valued by buyers so that the company can command premium prices
iii. Focus—seeking a competitive advantage within a target segment or segments of the industry based on either cost leadership (cost focus) or differentiation (differentiation focus)

The term "business model" refers generally to how a company makes money: which customers it targets, what products or services it will sell to those customers, and how it delivers those products or services (including how it finances its activities). The term is broadly used and sometimes encompasses aspects of the generic strategies just described. For example, an airline with a generic cost leadership strategy might have a business model characterized as a low-cost carrier. Low-cost carriers offer a single class of service and use a single type of aircraft to minimize training costs and maintenance charges.

- *How well has the company executed its strategy, and what are its prospects for future execution?*

Competitive success requires both appropriate strategic choices and competent execution. Analyzing the company's financial reports provides a basis for evaluating a company's performance against its strategic objectives and for developing expectations about a company's likely future performance. A historical analysis means more than just reviewing, say, the 10-year historical record in the most recent annual report. It often means looking at the annual reports from 10 years prior, 5 years prior, and the most recent 2 years. Why? Because looking at annual reports from prior years often provides useful insights into how management has historically foreseen challenges and has adapted to changes in business conditions through time. (In general, the investor relations sections of most publicly traded companies' websites provide electronic copies of their annual reports from at least the most recent years.)

In examining financial and operational strategic execution, two caveats merit mention. First, the importance of qualitative—that is, non-numeric factors—must be considered. Such non-numeric factors include the company's ownership structure, its intellectual and physical property, the terms of its intangible assets (e.g., licenses and franchise agreements), and the potential consequences of legal disputes or other contingent liabilities. Second, it is important to avoid simply extrapolating past operating results when forecasting future performance. In general, economic and technological forces can contribute to the phenomenon of "regression toward the mean." Specifically, successful companies tend to draw more competitors into their industries and find that their ability to generate above-average profits comes under pressure. Conversely, poorly performing companies are often restructured in such a manner as to improve their long-term profitability. Thus, in many cases, analysts making long-term horizon growth forecasts for a company's earnings and profits (e.g., forecasts beyond the next 10 years) plausibly assume company convergence toward the forecasted average growth rate for the underlying economy.

ANALYSIS OF FINANCIAL REPORTS AND SOURCES OF INFORMATION

4

The aspects of a financial report that are most relevant for evaluating a company's success in implementing strategic choices vary across companies and industries. For established companies, financial ratio analysis is useful. Individual drivers of profitability for merchandising and manufacturing companies can be evaluated against the company's stated strategic objectives. For example, a manufacturing company aiming to create a sustainable competitive advantage by building strong brand recognition could be expected to have substantial expenditures for advertising but relatively higher prices for its goods. Compared with a company aiming to compete on cost, the branded company would be expected to have higher gross margins but also higher selling expenses as a percentage of sales.

EXAMPLE 2

Competitive Analysis

The following companies are among the largest publicly-traded providers of oilfield services, based on revenues in the most recent fiscal year:

- Schlumberger Ltd. (executive offices in Paris, Houston, London, and the Hague)
  - Revenue: $32.8 billion
  - Net income: $2.2 billion
- Halliburton (executive offices in Houston)
  - Revenue: $24.0 billion
  - Net income: $1.7 billion
- Baker Hughes, a GE Company (executive offices in Houston)
  - Revenue: $22.9 billion
  - Net income: $0.3 billion
- Saipem S.p.A. (executive offices in Milan)
  - Revenue (2017): €9.0 billion
  - Net income (loss) (2017): –€0.3 billion
- National Oilwell Varco Inc. (executive offices in Houston)
  - Revenue: $8.5 billion
  - Net income (loss): –$0.02 billion
- Weatherford International plc (executive offices in Baar, Switzerland)
  - Revenue: $5.7 billion
  - Net income (loss): –$2.8 billion

Note: Financial data are for fiscal 2018, except where noted.

Sources: Companies' 10-K, 20-F, or Investor Relations websites.

These companies provide tools and services—often of a very technical nature—to expedite the drilling activities of oil and gas producers and drilling companies.

1. Discuss the economic factors that may affect demand for the services provided by oilfield services companies, and explain a logical framework for analyzing and forecasting revenue for these companies.

Solution:

Because the products and services of these companies relate to oil and gas exploration and production, the levels of exploration and production activities by oil and gas producers are probably the major factors that determine the demand for their services. In turn, the prices of natural gas and crude oil are important in determining the level of exploration and production activities. Therefore, among other economic factors, an analyst should research those relating to supply and demand for natural gas and crude oil.

- Supply factors in natural gas, such as natural gas inventory levels.
- Demand factors in natural gas, including household and commercial use of natural gas and the amount of new power generation equipment being fired by natural gas.
- Supply factors in crude oil, including capacity constraints and production levels in OPEC and other oil-producing countries, as well as new discoveries of off-shore and land-based oil reserves.
- Demand factors in crude oil, such as household and commercial use of oil and the amount of new power generation equipment using oil products as its primary fuel.
- For both crude oil and natural gas, projected economic growth rates could be examined as a demand factor and depletion rates as a supply-side factor.

Note: Energy analysts should be familiar with sources for researching supply and demand information, such as the International Energy Agency (IEA), the European Petroleum Industry Association (EUROPIA), the Energy Information Administration (EIA), the American Gas Association (AGA), and the American Petroleum Institute (API).

2. Explain how comparing the level and trend in profit margin (net income/sales) and revenue per employee for the companies shown may help in evaluating whether one of these companies is the cost leader in the peer group.

Solution:

Profit margin reflects cost structure. In interpreting profit margin, however, analysts should evaluate any differences in companies' abilities to affect profit margin through power over price. A successfully executed cost leadership strategy will lower costs and raise profit margins. All else equal, we would also expect a cost leader to have relatively high sales per employee, reflecting efficient use of human resources.

With newer companies, or companies involved in creating new products or markets, nonfinancial measures may be critical to obtaining an accurate picture of corporate prospects. For example, a biotechnology company's clinical trial results or an internet company's unique visitors per day may provide information helpful for evaluating future revenue.

Sources of Information

Important perspectives on industry and competition are sometimes provided by companies themselves in regulator-mandated disclosures, regulatory filings, company press releases, investor relations materials, and contacts with analysts. Analysts can compare the information provided directly by companies to their own independent research.

Regulatory requirements concerning disclosures and filings vary internationally. In some markets, such as Canada and the United States, regulations require management to provide industry and competitive information and access to those filings is freely available (e.g., www.sedar.com for Canadian filings, www.sec.gov for US filings, and individual companies' Investor Relations websites). To take the case of the United States, in annual filings with the Securities and Exchange Commission made on Form 10-K for US companies and Form 20-F for non-US companies, companies provide industry and competitive information in the business description section and in the management discussion and analysis (MD&A). Interim filings (e.g., the quarterly SEC Form 10-Q for US companies and Form 6-K for non-US companies) provide interim financial statements but typically less-detailed coverage of industry and competition. In other jurisdictions, listed companies' financial disclosures can be found on individual companies' Investor Relations websites or centrally at government websites (e.g. Companies House in the UK at https://www.gov.uk/government/organisations/companies-house), stock exchange websites (e.g. Shenzhen Stock Exchange disclosures at http://www.szse.cn), or central banks' websites (e.g., National Bank of Belgium at https://www.nbb.be/en/central-balance-sheet-office). Required disclosures concerning industry and competitive information differ across jurisdictions.

So far as analyst–management contacts are concerned, analysts must be aware when regulations (e.g., Regulation FD in the United States) prohibit companies from disclosing material nonpublic information to analysts without also disseminating that information to the public. General management insights based on public information, however, can still be useful to analysts, and many analysts consider in-person meetings with a company's management essential to understanding a company.

The CFA Institute Code of Ethics and Standards of Professional Conduct prohibit use of material inside information, and Regulation FD (and similar regulations in other countries) is designed to prohibit companies from selectively offering such information. These ethical and legal requirements assist analysts by clarifying their main role and purpose.

Company-provided sources of information in addition to regulatory filings include press releases and investor relations materials. The press releases of most relevance to analysts are the press releases that companies issue to announce their periodic earnings. Companies typically issue these earnings press releases several weeks after the end of an accounting period and several weeks before they file their interim financial statements. Earnings press releases summarize the company's performance for the period and usually include explanations for the performance and financial statements (often abbreviated versions). Following their earnings press releases, many companies host conference calls in which they further elaborate on their reported performance and typically allocate some time to answer questions posed by analysts. On their corporate websites, many companies post audio downloads and transcripts of conference calls and presentations made in analyst conferences. The audio files and transcripts of conference calls and conference presentations provide access not only to the company's reports but also to analysts' questions and the company's answers to those questions.

Apart from company-provided sources of information, analysts also obtain information from third-party sources, such as industry organizations, regulatory agencies, and commercial providers of market intelligence.