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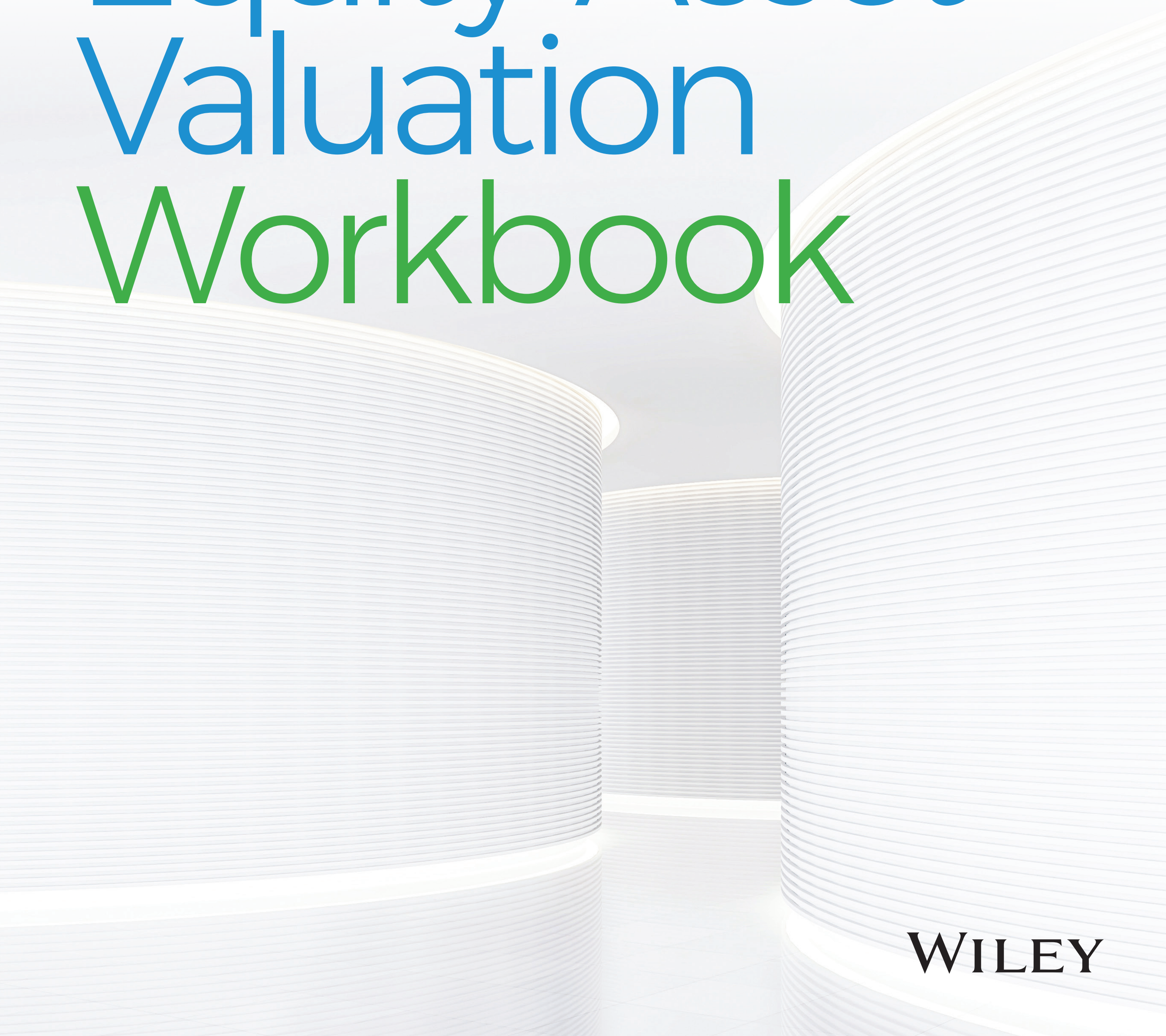
Fourth Edition

Equity Asset Valuation Workbook



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EQUITY ASSET VALUATION WORKBOOK

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EQUITY ASSET VALUATION WORKBOOK

Fourth Edition

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PART I

LEARNING OBJECTIVES, SUMMARY OVERVIEW, AND PROBLEMS

CHAPTER 1

OVERVIEW OF EQUITY SECURITIES

LEARNING OUTCOMES

After completing this chapter, you will be able to do the following:

- describe characteristics of types of equity securities;
- describe differences in voting rights and other ownership characteristics among different equity classes;
- distinguish between public and private equity securities;
- describe methods for investing in non-domestic equity securities;
- compare the risk and return characteristics of different types of equity securities;
- explain the role of equity securities in the financing of a company's assets;
- distinguish between the market value and book value of equity securities;
- compare a company's cost of equity, its (accounting) return on equity, and investors' required rates of return.

SUMMARY OVERVIEW

Equity securities play a fundamental role in investment analysis and portfolio management. The importance of this asset class continues to grow on a global scale because of the need for equity capital in developed and emerging markets, technological innovation, and the growing sophistication of electronic information exchange. Given their absolute return potential and ability to impact the risk and return characteristics of portfolios, equity securities are of importance to both individual and institutional investors.

This chapter introduces equity securities and provides an overview of global equity markets. A detailed analysis of their historical performance shows that equity securities have offered average real annual returns superior to government bills and bonds, which have provided average real annual returns that have only kept pace with inflation. The different types and characteristics of common and preference equity securities are examined, and the primary differences between public and private equity securities are outlined. An overview of the various types of equity securities listed and traded in global markets is provided, including a discussion of their risk and return characteristics. Finally, the role of equity securities in creating company value is examined as well as the relationship between a company's cost of equity, its accounting return on equity, investors' required rate of return, and the company's intrinsic value.

We conclude with a summary of the key components of this chapter:

- Common shares represent an ownership interest in a company and give investors a claim on its operating performance, the opportunity to participate in the corporate decision-making process, and a claim on the company's net assets in the case of liquidation.
- Callable common shares give the issuer the right to buy back the shares from shareholders at a price determined when the shares are originally issued.
- Putable common shares give shareholders the right to sell the shares back to the issuer at a price specified when the shares are originally issued.
- Preference shares are a form of equity in which payments made to preference shareholders take precedence over any payments made to common stockholders.
- Cumulative preference shares are preference shares on which dividend payments are accrued so that any payments omitted by the company must be paid before another dividend can be paid to common shareholders. Non-cumulative preference shares have no such provisions, implying that the dividend payments are at the company's discretion and are thus similar to payments made to common shareholders.
- Participating preference shares allow investors to receive the standard preferred dividend plus the opportunity to receive a share of corporate profits above a pre-specified amount. Non-participating preference shares allow investors to simply receive the initial investment plus any accrued dividends in the event of liquidation.
- Callable and putable preference shares provide issuers and investors with the same rights and obligations as their common share counterparts.
- Private equity securities are issued primarily to institutional investors in private placements and do not trade in secondary equity markets. There are three types of private equity investments: venture capital, leveraged buyouts, and private investments in public equity (PIPE).
- The objective of private equity investing is to increase the ability of the company's management to focus on its operating activities for long-term value creation. The strategy is to take the "private" company "public" after certain profit and other benchmarks have been met.
- Depository receipts are securities that trade like ordinary shares on a local exchange but which represent an economic interest in a foreign company. They allow the publicly listed shares of foreign companies to be traded on an exchange outside their domestic market.
- American depository receipts are US dollar-denominated securities trading much like standard US securities on US markets. Global depository receipts are similar to ADRs but contain certain restrictions in terms of their ability to be resold among investors.
- Underlying characteristics of equity securities can greatly affect their risk and return.
- A company's accounting return on equity is the total return that it earns on shareholders' book equity.
- A company's cost of equity is the minimum rate of return that stockholders require the company to pay them for investing in its equity.

PROBLEMS

1. Which of the following is *not* a characteristic of common equity?
   A. It represents an ownership interest in the company.
   B. Shareholders participate in the decision-making process.
   C. The company is obligated to make periodic dividend payments.
2. The type of equity voting right that grants one vote for each share of equity owned is referred to as:
   A. proxy voting.
   B. statutory voting.
   C. cumulative voting.
3. All of the following are characteristics of preference shares *except*:
   A. They are either callable or putable.
   B. They generally do not have voting rights.
   C. They do not share in the operating performance of the company.
4. Participating preference shares entitle shareholders to:
   A. participate in the decision-making process of the company.
   B. convert their shares into a specified number of common shares.
   C. receive an additional dividend if the company's profits exceed a predetermined level.
5. Which of the following statements about private equity securities is *incorrect*?
   A. They cannot be sold on secondary markets.
   B. They have market-determined quoted prices.
   C. They are primarily issued to institutional investors.
6. Venture capital investments:
   A. can be publicly traded.
   B. do not require a long-term commitment of funds.
   C. provide mezzanine financing to early-stage companies.
7. Which of the following statements *most accurately* describes one difference between private and public equity firms?
   A. Private equity firms are focused more on short-term results than public firms.
   B. Private equity firms' regulatory and investor relations operations are less costly than those of public firms.
   C. Private equity firms are incentivized to be more open with investors about governance and compensation than public firms.
8. Emerging markets have benefited from recent trends in international markets. Which of the following has *not* been a benefit of these trends?
   A. Emerging market companies do not have to worry about a lack of liquidity in their home equity markets.
   B. Emerging market companies have found it easier to raise capital in the markets of developed countries.
   C. Emerging market companies have benefited from the stability of foreign exchange markets.
9. When investing in unsponsored depository receipts, the voting rights to the shares in the trust belong to:
   A. the depository bank.
   B. the investors in the depository receipts.
   C. the issuer of the shares held in the trust.

10. With respect to Level III sponsored ADRs, which of the following is *least likely* to be accurate? They:
    A. have low listing fees.
    B. are traded on the NYSE, NASDAQ, and AMEX.
    C. are used to raise equity capital in US markets.
11. A basket of listed depository receipts, or an exchange-traded fund, would *most likely* be used for:
    A. gaining exposure to a single equity.
    B. hedging exposure to a single equity.
    C. gaining exposure to multiple equities.
12. Calculate the total return on a share of equity using the following data:
    Purchase price: $50
    Sale price: $42
    Dividend paid during holding period: $2
    A. −12.0%
    B. −14.3%
    C. −16.0%
13. If a US-based investor purchases a euro-denominated ETF and the euro subsequently depreciates in value relative to the dollar, the investor will have a total return that is:
    A. lower than the ETF's total return.
    B. higher than the ETF's total return.
    C. the same as the ETF's total return.
14. Which of the following is *incorrect* about the risk of an equity security? The risk of an equity security is:
    A. based on the uncertainty of its cash flows.
    B. based on the uncertainty of its future price.
    C. measured using the standard deviation of its dividends.
15. From an investor's point of view, which of the following equity securities is the *least* risky?
    A. Putable preference shares.
    B. Callable preference shares.
    C. Non-callable preference shares.
16. Which of the following is *least likely* to be a reason for a company to issue equity securities on the primary market?
    A. To raise capital.
    B. To increase liquidity.
    C. To increase return on equity.
17. Which of the following is *not* a primary goal of raising equity capital?
    A. To finance the purchase of long-lived assets.
    B. To finance the company's revenue-generating activities.
    C. To ensure that the company continues as a going concern.
18. Which of the following statements is *most accurate* in describing a company's book value?
    A. Book value increases when a company retains its net income.
    B. Book value is usually equal to the company's market value.
    C. The ultimate goal of management is to maximize book value.

19. Calculate the book value of a company using the following information:

Number of shares outstanding	100,000
Price per share	€52
Total assets	€12,000,000
Total liabilities	€7,500,000
Net Income	€2,000,000

    A. €4,500,000.
    B. €5,200,000.
    C. €6,500,000.

20. Which of the following statements is *least accurate* in describing a company's market value?
    A. Management's decisions do not influence the company's market value.
    B. Increases in book value may not be reflected in the company's market value.
    C. Market value reflects the collective and differing expectations of investors.

21. Calculate the return on equity (ROE) of a stable company using the following data:

Total sales	£2,500,000
Net income	£2,000,000
Beginning of year total assets	£50,000,000
Beginning of year total liabilities	£35,000,000
Number of shares outstanding at the end of the year	1,000,000
Price per share at the end of the year	£20

    A. 10.0%.
    B. 13.3%.
    C. 16.7%.

22. Holding all other factors constant, which of the following situations will *most likely* lead to an increase in a company's return on equity?
    A. The market price of the company's shares increases.
    B. Net income increases at a slower rate than shareholders' equity.
    C. The company issues debt to repurchase outstanding shares of equity.

23. Which of the following measures is the *most difficult* to estimate?
    A. The cost of debt.
    B. The cost of equity.
    C. Investors' required rate of return on debt.

24. A company's cost of equity is often used as a proxy for investors':
    A. average required rate of return.
    B. minimum required rate of return.
    C. maximum required rate of return.

CHAPTER 2

INTRODUCTION TO INDUSTRY AND COMPANY ANALYSIS

LEARNING OUTCOMES

After completing this chapter, you will be able to do the following:

- explain uses of industry analysis and the relation of industry analysis to company analysis;
- compare methods by which companies can be grouped, current industry classification systems, and classify a company, given a description of its activities and the classification system;
- explain the factors that affect the sensitivity of a company to the business cycle and the uses and limitations of industry and company descriptors such as "growth," "defensive," and "cyclical";
- explain how a company's industry classification can be used to identify a potential "peer group" for equity valuation;
- describe the elements that need to be covered in a thorough industry analysis;
- describe the principles of strategic analysis of an industry;
- explain the effects of barriers to entry, industry concentration, industry capacity, and market share stability on pricing power and price competition;
- describe industry life cycle models, classify an industry as to life cycle stage, and describe limitations of the life-cycle concept in forecasting industry performance;
- compare characteristics of representative industries from the various economic sectors;
- describe macroeconomic, technological, demographic, governmental, and social influences on industry growth, profitability, and risk;
- describe the elements that should be covered in a thorough company analysis.

SUMMARY OVERVIEW

In this chapter, we have provided an overview of industry analysis and illustrated approaches that are widely used by analysts to examine an industry.

- Company analysis and industry analysis are closely interrelated. Company and industry analysis together can provide insight into sources of industry revenue growth and competitors' market shares and thus the future of an individual company's top-line growth and bottom-line profitability.
- Industry analysis is useful for:
  - understanding a company's business and business environment;
  - identifying active equity investment opportunities;
  - formulating an industry or sector rotation strategy; and
  - portfolio performance attribution.
- The three main approaches to classifying companies are:
  - products and/or services supplied;
  - business-cycle sensitivities; and
  - statistical similarities.
- Commercial industry classification systems include:
  - Global Industry Classification Standard;
  - Russell Global Sectors; and
  - Industry Classification Benchmark.
- Governmental industry classification systems include:
  - International Standard Industrial Classification of All Economic Activities;
  - Statistical Classification of Economic Activities in the European Community;
  - Australian and New Zealand Standard Industrial Classification; and
  - North American Industry Classification System.
- A limitation of current classification systems is that the narrowest classification unit assigned to a company generally cannot be assumed to constitute its peer group for the purposes of detailed fundamental comparisons or valuation.
- A peer group is a group of companies engaged in similar business activities whose economics and valuation are influenced by closely related factors.
- Steps in constructing a preliminary list of peer companies:
  - Examine commercial classification systems if available. These systems often provide a useful starting point for identifying companies operating in the same industry.
  - Review the subject company's annual report for a discussion of the competitive environment. Companies frequently cite specific competitors.
  - Review competitors' annual reports to identify other potential comparables.
  - Review industry trade publications to identify additional peer companies.
  - Confirm that each comparable or peer company derives a significant portion of its revenue and operating profit from a similar business activity as the subject company.
- Not all industries are created equal. Some are highly competitive, with many companies struggling to earn returns in excess of their cost of capital, and other industries have attractive characteristics that enable a majority of industry participants to generate healthy profits.
- Differing competitive environments are determined by the structural attributes of the industry. For this important reason, industry analysis is a vital complement to company analysis. The analyst needs to understand the context in which a company operates to fully understand the opportunities and threats that a company faces.

- The framework for strategic analysis known as "Porter's five forces" can provide a useful starting point. Porter maintains that the profitability of companies in an industry is determined by five forces: 1) The threat of new entrants, which in turn is determined by economies of scale, brand loyalty, absolute cost advantages, customer switching costs, and government regulation; 2) the bargaining power of suppliers, which is a function of the feasibility of product substitution, the concentration of the buyer and supplier groups, and switching costs and entry costs in each case; 3) the bargaining power of buyers, which is a function of switching costs among customers and the ability of customers to produce their own product; 4) the threat of substitutes; and 5) the intensity of rivalry among existing competitors, which in turn is a function of industry competitive structure, demand conditions, cost conditions, and the height of exit barriers.
- The concept of barriers to entry refers to the ease with which new competitors can challenge incumbents and can be an important factor in determining the competitive environment of an industry. If new competitors can easily enter the industry, the industry is likely to be highly competitive because incumbents that attempt to raise prices will be undercut by newcomers. As a result, industries with low barriers to entry tend to have low pricing power. Conversely, if incumbents are protected by barriers to entry, they may enjoy a more benign competitive environment that gives them greater pricing power over their customers because they do not have to worry about being undercut by upstarts.
- Industry concentration is often, although not always, a sign that an industry may have pricing power and rational competition. Industry fragmentation is a much stronger signal, however, that the industry is competitive and pricing power is limited.
- The effect of industry capacity on pricing is clear: Tight capacity gives participants more pricing power because demand for products or services exceeds supply; overcapacity leads to price cutting and a highly competitive environment as excess supply chases demand. The analyst should think about not only current capacity conditions but also future changes in capacity levels—how long it takes for supply and demand to come into balance and what effect that process has on industry pricing power and returns.
- Examining the market share stability of an industry over time is similar to thinking about barriers to entry and the frequency with which new players enter an industry. Stable market shares typically indicate less competitive industries, whereas unstable market shares often indicate highly competitive industries with limited pricing power.
- An industry's position in its life cycle often has a large impact on its competitive dynamics, so it is important to keep this positioning in mind when performing strategic analysis of an industry. Industries, like individual companies, tend to evolve over time and usually experience significant changes in the rate of growth and levels of profitability along the way. Just as an investment in an individual company requires careful monitoring, industry analysis is a continuous process that must be repeated over time to identify changes that may be occurring.
- A useful framework for analyzing the evolution of an industry is an industry life-cycle model, which identifies the sequential stages that an industry typically goes through. The five stages of an industry life cycle according to the Hill and Jones model are:
  - embryonic;
  - growth;
  - shakeout;
  - mature; and
  - decline.
- Price competition and thinking like a customer are important factors that are often overlooked when analyzing an industry. Whatever factors most influence customer purchasing

decisions are also likely to be the focus of competitive rivalry in the industry. Broadly, industries for which price is a large factor in customer purchase decisions tend to be more competitive than industries in which customers value other attributes more highly.
- External influences on industry growth, profitability, and risk include:
  - technology;
  - demographics;
  - government; and
  - social factors.
- Company analysis takes place after the analyst has gained an understanding of the company's external environment and includes answering questions about how the company will respond to the threats and opportunities presented by the external environment. This intended response is the individual company's competitive strategy. The analyst should seek to determine whether the strategy is primarily defensive or offensive in its nature and how the company intends to implement it.
- Porter identifies two chief competitive strategies:
  - A low-cost strategy (cost leadership) is one in which companies strive to become the low-cost producers and to gain market share by offering their products and services at lower prices than their competition while still making a profit margin sufficient to generate a superior rate of return based on the higher revenues achieved.
  - A product/service differentiation strategy is one in which companies attempt to establish themselves as the suppliers or producers of products and services that are unique in quality, type, or means of distribution. To be successful, the companies' price premiums must be above their costs of differentiation and the differentiation must be appealing to customers and sustainable over time.
- A checklist for company analysis includes a thorough investigation of:
  - corporate profile;
  - industry characteristics;
  - demand for products/services;
  - supply of products/services;
  - pricing; and
  - financial ratios.
- Spreadsheet modeling of financial statements to analyze and forecast revenues, operating and net income, and cash flows has become one of the most widely used tools in company analysis. Spreadsheet modeling can be used to quantify the effects of the changes in certain swing factors on the various financial statements. The analyst should be aware that the output of the model will depend significantly on the assumptions that are made.

PROBLEMS

1. Which of the following is *least likely* to involve industry analysis?
   A. Sector rotation strategy.
   B. Top-down fundamental investing.
   C. Tactical asset allocation strategy.
2. A sector rotation strategy involves investing in a sector by:
   A. making regular investments in it.
   B. investing in a pre-selected group of sectors on a rotating basis.
   C. timing investment to take advantage of business-cycle conditions.

3. Which of the following information about a company would *most likely* depend on an industry analysis? The company's:
   A. dividend policy.
   B. competitive environment.
   C. trends in corporate expenses.
4. Which industry classification system uses a three-tier classification system?
   A. Russell Global Sectors.
   B. Industry Classification Benchmark.
   C. Global Industry Classification Standard.
5. In which sector would a manufacturer of personal care products be classified?
   A. Health care.
   B. Consumer staples.
   C. Consumer discretionary.
6. An automotive manufacturer is *most likely* classified in which of the following industry sectors?
   A. Consumer staples
   B. Industrial durables
   C. Consumer discretionary
7. Which of the following statements about commercial and government industry classification systems is *most* accurate?
   A. Many commercial classification systems include private for-profit companies.
   B. Both commercial and government classification systems exclude not-for-profit companies.
   C. Commercial classification systems are generally updated more frequently than government classification systems.
8. Which of the following is *not* a limitation of the cyclical/non-cyclical descriptive approach to classifying companies?
   A. A cyclical company may have a growth component in it.
   B. Business-cycle sensitivity is a discrete phenomenon rather than a continuous spectrum.
   C. A global company can experience economic expansion in one part of the world while experiencing recession in another part.
9. A cyclical company is *most likely* to:
   A. have low operating leverage.
   B. sell relatively inexpensive products.
   C. experience wider-than-average fluctuations in demand.
10. A company that is sensitive to the business cycle would *most likely*:
    A. not have growth opportunities.
    B. experience below-average fluctuation in demand.
    C. sell products that the customer can purchase at a later date if necessary.
11. Which of the following factors would *most likely* be a limitation of applying business-cycle analysis to global industry analysis?
    A. Some industries are relatively insensitive to the business cycle.
    B. Correlations of security returns between different world markets are relatively low.
    C. One region or country of the world may experience recession while another region experiences expansion.