LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

LMU MUNICH SCHOOL OF MANAGEMENT

INSTITUTE FOR ACCOUNTING, AUDITING, AND ANALYSIS (AAA)
PROF. DR. THORSTEN SELLHORN

Course Syllabus

Summer Term 2024

Disclaimer: Subject to minor changes – please check back often

Accounting for M&A Transactions

Lecturer:	Prof. Dr. Thorsten Sellhorn, MBA (sellhorn@lmu.de)
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Moodle:	https://moodle.lmu.de/course/view.php?id=32384 Password: *goodwill2024*
Additional links:	LSF - Lecture LSF - Tutorial

Welcome to 'Accounting for M&A Transactions'!

This syllabus is intended to make the course objectives, contents, materials, structure and requirements transparent for you. It lays out what you should do to obtain the greatest possible benefit from this course.

Please read it carefully before the first class session!

We are committed to providing you a valuable learning experience. To achieve that, it is important that you frequently use our communication channels and do your best to "stay with it": Use Moodle for this course and the "Teaching / Lehre" section of our website. Much will depend on you staying up to date and studying regularly, ideally with other students.

Sincerely yours,

Thorsten Sellhorn and the RWP team

1. Course Objectives

M&A deals are among the largest, most complex, and publicly visible transactions that firms undertake. These transactions typically involve substantial financial commitments and require specialized advisory services from lawyers, investment bankers, accountants, and consultancy firms. Their depiction in the financial statements of acquirers and target firms affects a wide range of constituents. In particular, the acquirer is interested in assessing the financial repercussions (e.g., effects on earnings per share) of a deal *ex ante*, as well as in communicating its effects to its stakeholders *ex post*.

Capturing M&A transactions is challenging to preparers and users of financial statements alike. Ultimately, this course will enable you to answer the following two key questions:

1. In terms of the *underlying economics* of M&A transactions: **What cash flows will the combined entity (i.e., the acquirer after integrating the target) generate, and to whom are these cash flows available?**
2. In terms of the *financial reporting depiction* of M&A transactions: **How do corporate acquisitions and other M&A transactions affect the financial position and performance of acquirers as portrayed in their consolidated financial statements?**

The answers to these questions are important for anyone involved in M&A transactions, or who analyzes or advises the companies that are. These economic as well as financial reporting effects are often ill-understood, even by the parties involved, although they can have profound effects on the profitability of deals. In fact, understanding the underlying economics is key to anticipating and depicting the financial statement effects (**preparer perspective**) – and understanding the financial statement effects is key to comprehending the underlying economics (**user perspective**).

This course focuses on consolidated financial statements prepared under **International Financial Reporting Standards (IFRS)**, which publicly traded companies domiciled in the EU are required to apply. To address the above core question, this course:

- Discusses the underlying economics and different types of M&A deals in today's economy;
- Re-caps the basics of financial reporting, financial statement analysis, and valuation;
- Deals with the steps involved in incorporating subsidiaries into parent companies' consolidated financial statements, including the treatment of complex transactions;
- Covers the accounting treatment of joint ventures, associates, and other financial investments; and
- Critically evaluates the financial reporting effects of the accounting for M&A transactions for the analysis of consolidated financial statements.

You will benefit most from this course if you have a solid background in financial accounting (and some working knowledge in IFRS, although that is not required) and some knowledge of corporate finance. We will recap some of these basics during of the course to get us all on the same page. If you need additional assistance, we will gladly provide you with supplemental study material. This course is usefully complemented by the course **"Advanced Accounting" (Professor Plendl and Dr. Pinckernelle**; see info video here**)**, which is also offered every winter semester.

2. Learning objectives and professional uses

In this course, you will learn to:

- Evaluate the types and economic importance of M&A transactions;
- Apply the theoretical concepts of consolidated accounting to real-world problems;

- Conduct the different steps necessary in the process of including a subsidiary in its parent company's consolidated financial statements;
- Deal with step acquisitions as more complex transactions;
- Apply the tools of financial statements analysis to consolidated financial statements, allowing you to understand and critically evaluate the effects of a transaction; and
- Assess research findings and current standard-setting developments relevant to M&A accounting.

The skills acquired in this course are useful in a wide array of professional areas, especially but not limited to those directly involved in M&A transactions. They include investment banking, private equity, consulting, auditing, accounting, corporate finance, and strategy.

3. Teaching philosophy

This course requires you to do some reading, which, for your own maximum benefit, you should ideally complete in advance of each class session. Reading material for each section is laid out in our "Section Guides" (see below). In the live sessions, we will then add value by discussing selected issues and applying the material to real-world examples. Several interactions with practitioners will bring in practical real-world insights. Experience shows that the extent to which you become excited about this class, take away important lessons (and ultimately do well on the exam) is *proportional to your diligence in reading ahead as well as participating in class discussions*.

4. Teaching formats and materials

4.1 Lectures and tutorials

We will be having **one lecture** and **one tutorial** per week in person. We expect you to prepare the problem sets before attending the tutorials. In addition, please take advantage of our (slightly dated) online learning videos from the Corona semesters:[1]

https://cast.itunes.uni-muenchen.de/vod/playlists/F3kW65uHcY.html (LMUcast)

4.2 Grading

The grading is based 100% on a final two-hour exam; the date will be announced at the beginning of the semester

4.3 Moodle Forum as key information and communication hub

All communication and course material will be exclusively on Moodle. As always, we encourage you to use the Moodle forum to exchange information about the lecture and exercises and answer each other's questions. Furthermore, in the "Course Materials" section on Moodle, we will upload all relevant material such as slides, readings or problem sets for the exercises. The videos will be

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uploaded to LMUcast (see 4.1). The link will also be posted for you under "Course Materials". As soon as a new video is uploaded, we will inform you about it via a Moodle announcement.

You find the Forum under this link. The password is: *goodwill2024*

4.4 Readings

4.4.1 Overview

We will be using materials from different sources. The list below gives an overview of core materials. A wider range of readings is referred to in the Section Guides. We make readings available as PDF files for download on the Moodle course website to the extent it is legal for us to do so. The purpose of the readings is to prepare you for class discussions and tutorials, to help you read up on issues discussed in class, and to assist your exam preparation. People differ in what kind of readings they find most helpful. Therefore, we provide a range of different materials, all of which can be used. We encourage you to calibrate your reading based on your level of background knowledge and as needed to understand the issues laid out in the Section Guides and discussed in class.

4.4.2 Section Guides

All course materials are organized into distinct topic sections (see the list of sections under "Course Structure" below). Here is the link to a Section Guide for each section. These short Section Guides summarize each topic section in the form of an annotated reading list. Each one contains a problem-based introduction, learning objectives for the section, a list of relevant readings, and a summary of the material covered in the section to help you prepare for the final exam. We expect you to have read the relevant Section Guides before coming to class.

4.4.3 Textbooks

4.4.3.1 Mandatory textbooks

Pellens/Fülbier/Gassen/Sellhorn, Internationale Rechnungslegung, 11th edition, Schäffer-Poeschel 2021 (German). **Link to library**

This textbook is one of the leading IFRS texts in the German language area. It provides in-depth coverage of all important IFRS requirements and provides a history of international financial accounting from a specifically German perspective. All IFRS recognition and measurement rules are compared to those according to the German Commercial Code. The book features a large number of illustrative examples, exercises, and problems. ***We will provide German and English translations of the required chapters free of charge on Moodle.***

Picker/Clark/Dunn/Kolitz/Livne/Loftus/van der Tas, Applying International Financial Reporting Standards, 4th edition, Wiley 2016 (English). **Link to library**

This authoritative international textbook focuses on interpreting, analyzing, and illustrating the financial reporting requirements under IFRS. Each chapter contains illustrative examples that explain concepts to ensure that users gain a deep understanding of the reporting requirements and meet the knowledge expectations of the accounting profession. Fact sheets summarizing the scope and key reporting requirements associated with each standard help with review and exam preparation.

4.4.3.2 Additional textbooks

Harrison/Horngren/Thomas/Tietz/Suward, Financial Accounting (International Financial Reporting Standards, Chapter 8 and 11,11th edition, Pearson Education 2018 (English). ***We will provide the required chapters free of charge on Moodle.*** **Link to library**

Baetge/Kirsch/Thiele Konzernbilanzen, 14. Auflage, IDW 2021 (German). **Link to library**

4.5 Other relevant material

4.5.1 IFRS texts

This course is based on the IFRS pronouncements that regulate the accounting for M&A transactions. The standards are generally accessible in the following ways:

- IASB website (need to register): https://www.ifrs.org/issued-standards/list-of-standards/
- Several text editions, some of them bilingual, such as: International Financial Reporting Standards (IFRS) 2023: English & German Edition. 17th edition, Wiley-VCH; and
- The website hosting the Official EU-endorsed IFRS: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02008R1126-20200101&from=EN

4.5.2 Press clippings

We will discuss articles from the financial press, and we are happy to consider your suggestions.

4.5.3 Research Papers

We will cover scientific studies dealing with different aspects of the accounting for M&A transactions in the Section Guides, and post the respective papers on the Moodle course website.

4.5.4 Useful websites

- International Accounting Standards Board (IASB): www.ifrs.org
- German Accounting Standards Committee (GASC): www.drsc.de
- U.S. Securities and Exchange Commission: www.sec.gov
- Current news on (international) financial accounting developments on Deloitte's websites at www.iasplus.com (English) or www.iasplus.de (German).
- Newsletters from CFO magazine (www.cfo.com; English) and GASC (www.drsc.de; German).

5. Instruction formats and requirements

The course consists of lectures, tutorials and a final exam.

- During the **lectures**, material will be presented and discussed in person. Active participation is strongly encouraged. Studying the Section Guides and the material referenced therein will enable you to follow along and participate.
- **Tutorials** will re-cap the lecture content and apply it in exam-type exercises and small case studies. If you have questions, please post them into our Moodle forum; they will then be taken up in the tutorial session.
- The **final exam** will take place on July, the **25th from 10 a.m. - 01 p.m (room: Luisenstr. 37, C 106)**. The scope of the course, and therefore also of the exam, is set by the Section Guides and the respective readings. The slides and in-class discussions will be used to illustrate these contents. You are therefore strongly encouraged to

carefully read the Section Guides and referenced materials as valuable resources. You will also benefit from attending the live sessions. The time dedicated to a topic tends to be directly proportional to its importance - including for the exam. Thus, keep your lecture notes in good order.

6. Course Structure

Monday **Lecture**: 10.15 to 11.45 am, Lehrturm W201, Professor Huber Platz 2

Thursday **Tutorial**: 10.15 to 11.45 am, A120, Geschwister Scholl Platz 1
(Exception: Thursday, 27th of June at K201 - Historicum)

(Exception: Thursday, 4th of July at R203 - Schellingstraße 3)

Week	**Lecture session**	**Tutorial session**	**Lecture topics** (see Section Guides for details)	**Lecture date**	**Tutorial date**	**Problem set covered in the tutorial**
15 Apr 2024	1		**Introduction and Motivation** **Understanding M&A Transactions (1/2)**	15 April 2024		
22 Apr 2024	2	1	**Understanding M&A Transactions (2/2)**	25 April 2024 (***Thursday***)	22 April 2024 (***Monday***)	PS 1
29 Apr 2024	3	2	**Accounting: Conceptual and Institutional Background**	29 April 2024	02 Mai 2024	PS 2
06 May 2024	4		**Accounting for Acquisitions (1/2)**	06 May 2024	no tutorial (Himmelfahrt)	
13 May 2024	5	3	*Guest lecture EY:* **Purchase Price Allocation & Pre-Deal M&A**	13 May 2024	16 May 2024	PS 3 + PS 4
20 May 2024		4	no lecture (holiday)		23 May 2024	Case Study

27 May 2024	6		*Guest lecture PwC:* **Joint Arrangements, Associates and Financial Instruments**	27 May 2024	no tutorial (Fronleichnam)	
03 Jun 2024	7	5	**Accounting for Acquisitions (2/2)**	06 Jun 2024 (***Thursday***)	03.06.2024 (***Monday***)	PS 5 + PS 6
10 Jun 2024	8	6	**Preparing Consolidated Financial Statements (1/3)**	10 Jun 2024	13 Jun 2024	PS 7
17 Jun 2024	9	7	**Preparing Consolidated Financial Statements (2/3)**	17 Jun 2024	20 Jun 2024	PS 8 + PS 9
24 Jun 2024	10	8	**Preparing Consolidated Financial Statements (3/3)**	24 Jun 2024	27 Jun 2024 **room: K201- Historicum**	PS 10 + PS 11
01 Jul 2024	11	9	**Analyzing the Financial Statements of Combined Entities**	01 July 2024	04 July 2024 **room: R 203 - Schellingstraße 3**	PS 12 + PS 13
08 Jul 2024	12	10	*Guest lecture BMW:* **Step-up Acquisition of Chinese Joint Venture**	08 July 2024	11 July 2024	PS 14
15 Jul 2024	13	11	**Research on M&A Transactions** **Recent developments** **Exam review**	15 July 2024	18 July 2024	Review Session

				25 Jul 2024		**FINAL EXAM** 10 a.m - 12 a.m. Luisenstr. 37, C 106

Section Guides

to

Accounting for M&A Transactions

1. Understanding M&A Transactions

M&A transactions pervade the business news. After several years of dampened enthusiasm, central banks' flooding of financial markets with cheap credit has recently led to a marked increase in M&A activity. While not all M&A deals are headline material, the largest ones have met with immense interest over the years. For example, the 1999 acquisition of Mannesmann AG by Vodafone Group for $202bn (Wikipedia) took place during the dotcom bubble and was the largest business combination of all times. The largest deal in 2014 was Comcast Corp's acquisition of Time Warner, estimated to be worth around $42 billion (according to Thomson Reuters). Overall, M&A transactions are one of the most interesting topics in management, corporate finance and (not least) financial reporting, due to the immense resources as well as multi-faceted challenges involved.

Learning Objectives

- Gain some familiarity with the historical development of M&A activity;
- Be able to describe and classify the most common types of M&A transactions and use associated key terms correctly;
- Understand the players in the M&A industry and their incentives;
- Appreciate the determinants and consequences of M&A transactions for the parties involved; and
- Be able to describe the M&A process.

1.1 Taxonomy of corporate transactions

"M&A" is a flashy topic; however, it is full of nuances that require some background knowledge to navigate confidently. In the following, we typically assume that one party, the acquirer (or bidder), initiates an M&A transactions in which it becomes involved with another party, the acquiree (or target).

For the purposes of this course, we categorize M&A transactions in the following ways:

- **Intensity of relationships:** In a very broad understanding, we can describe as M&A transactions the following agreements that create a relationship between the two parties involved.
    - In a **business combination**, an acquirer obtains control of one or more businesses; they often involve one entity (the parent) acquiring another (often incorporated) entity, which then becomes its subsidiary.
    - In a **joint arrangement**, a venturer either holds joint control (together with a partner) over a **joint venture** (which is typically a separate legal entity), or is a party to a **joint operation**. The difference between the two is the following: Whereas in a joint venture, the venturers have rights to the net assets of the arrangement, in a joint operation they have rights to the assets, and obligations for the liabilities, of the (typically unincorporated) arrangement.
    - An investment in an **associate** gives the investor significant influence over that other firm.
    - Finally, the acquisition of **other equity investments** (typically below 20% voting stake) can be counted as M&A transactions in a very broad sense as well, especially if it represents the starting point of a process that results in a majority stake being acquired ultimately.

- **Legal structures:** Focusing on M&A transactions in a narrow sense, a business combination can occur in different legal structures.
    - In a **share deal**, the acquirer purchases a controlling equity stake in the target, thereby becoming its parent, and typically retains the target as a separate legal entity (a subsidiary) within the corporate group.
    - In an **asset deal**, the acquirer purchases the target's assets (with or without assuming its liabilities), such that the target ceases to exist as a legal entity. Similar effects arise when a deal is carried out as a statutory merger, in which the target entity is merged onto the acquirer entity. Asset deals can be limited to a subset of the target's operations. If the set of assets acquired constitutes a business, such a deal also represents a business combination under IFRS.
- **Pre-deal relationships between acquirer and target management:** Depending on the relation between the acquirer and the target's top management, deals are frequently characterized as either **friendly** (i.e., with consent of the target's top management) or **hostile** (i.e., without such consent). If the parties are of more or less comparable size and status, deals will sometimes be marketed as "mergers of equals", as the business leaders involved may want to stress the consensual nature and agreeable circumstances of the deal. A memorable example is the deal that combined Daimler-Benz AG and Chrysler Corp., yielding DaimlerChrysler in 1998.
- **Means of payment:** M&A deals can be further categorized in terms of the means of payment made by the acquirer to the target shareholders. There are **cash acquisitions**, **stock-for-stock acquisitions**, and (most frequently) combinations of the two.
- **Business logic:** In terms of economic reasoning, we distinguish between **vertical**, **horizontal**, and **conglomerate** M&A transactions.
- **Acquirers:** Closely related, we can distinguish different types of investors acting as acquirers, e.g., **industrial firms**, **private equity funds**, or **target management** (in a management buyout).
- **Financing arrangements:** Finally, the financing arrangements that the acquirer puts in place to effect an acquisition are worth mentioning. Most notably, several deals are highly leveraged (**leveraged buyouts**; LBO), and the purchase price is effectively financed through cash flows generated by the target, with little equity investment by the acquirer.

1.2 Economics of M&A transactions

1.2.1 Historical perspective

 Berk and DeMarzo (2019), Ch. 28.1

As described in the introduction, M&A activity recently started to increase after several years of relatively low activity. This matches the historical variation in the M&A market, which has seen several periods of low activity followed by periods of high activity (so-called **merger waves**). Generally, M&A activity is greater in times of economic upswing than in times of economic downturn. The four greatest merger waves have occurred in the 1960s (conglomerate mergers), 1980s (hostile takeovers), 1990s (strategic cross-border mergers), and the 2000s (industry consolidation and private equity).

1.2.2 Parties involved in M&A transactions and their incentives

M&A is an immense industry, with several parties involved. All of these parties have their own incentives. Because the parties frequently deal on behalf of others, multiple agency relationships and associated conflicts of interest arise.

The first conflict of interests arises between the **owners and managers of acquirers**. For example, whereas acquirer shareholders seek a satisfactory return on investment, the motives of acquirer managers may include empire-building, excessive diversification, or leading the 'quiet life'.

A similar conflict of interests potentially exists between the **target's owners and managers**. Whereas owners may be interested in pursuing an attractive deal proposal from a potential acquirer, target management may be opposed to the deal because it is worried about job security in the combined firm. Therefore, target management might have installed takeover defenses that secure its position.

Other interested parties include a **multitude of M&A advisors** (e.g., investment banks, *accountants*, tax consultants, law firms, industry experts, etc.), all of which are interested in earning fees from the acquirer. Finally yet importantly, **government agencies** will also monitor M&A transactions, including to assess any tax implications of the deal as well as the market power of the newly combined entity and potential anti-trust concerns.

1.2.3 Reasons for entering into M&A transactions

- *Berk and DeMarzo (2019), Ch. 28.6*

M&A transactions are costly endeavors that can tie up enormous resources in the firms involved. Why do firms enter these maneuvers?

Abstracting from the potential conflicts of interest discussed above, and assuming that acquirer management and shareholders pursue common objectives, the acquirer will typically be motivated by an **expected value increase** from the combination that the target alone and its investors are unable to achieve. These **synergies** can stem from revenue enhancements or cost reductions due to economies of scale and scope, vertical integration, new expertise in strategically important areas, monopoly gains (these being limited by anti-trust regulation), efficiency gains, risk reductions or other benefits from diversification as well as tax savings. Another important and often-cited reason for acquisitions is expected growth in earnings (per share). All of these reasons contribute to explaining the purchase price the acquirer is willing to pay. A substantial part of this course will be devoted to discussing how these benefits can be measured and faithfully represented in the combined entity's financial statements.

Being acquired often implies heightened risk of job loss for target managers, and target shareholders have incentive to maximize the price paid by the acquirer. These considerations lead to common **takeover defense strategies** that target firms have at their disposal to deter bidders or maximize the acquisition price. Many of these have flashy names; they include poison pills, staggered boards, white knights, golden parachutes, and recapitalizations. Some of these measures are specific to the institutional environment in the US. Larger deals that are likely to result in a combined entity with a dominant market position (e.g., Rewe's recent attempt at acquiring Tengelmann stores) will be subject to regulatory approval.

1.2.4 Consequences of M&A transactions

- *Berk and DeMarzo (2019), Ch. 28.2, 28.4, 28.6*

Although acquisitions are pervasive, it is surprisingly uncertain whether acquirer shareholders will benefit from a given deal, especially since acquisition prices exceed targets' pre-deal market values in many cases, and sometimes substantially so. Markets anticipate these premiums,

bidding target share prices up when a deal is announced, or rumors about it start spreading. In contrast, acquirer share prices often go *down*; this reflects the fact that expected synergies often fail to materialize, and that therefore acquisition prices turn out to have been too high *ex post*, especially if several bidders were involved. The notion that successful bidders often end up paying prices that make the acquisition a negative-NPV investment is sometimes referred to as the **'winner's curse'**, which reflects a prisoner's dilemma. This implies that target shareholders often capture much of the value (if any) created in an acquisition.

The tax implications of M&A transactions can be complex, especially in cross-border transactions involving internationally active firms. One main driver is the legal structure of the deal. In an **asset deal** (but not in a share deal), the acquirer will increase the target's net assets acquired to reflect fair values; this generates **tax-deductible depreciation and amortization** expense in subsequent periods. In a **share deal**, tax payments by target shareholders are based on any **capital gain from selling their shares**. If the acquisition price is paid in cash, these payments will typically be due immediately, whereas they are deferred when target shareholders are paid in the acquirer's (or the newly combined entity's) shares.

1.3 M&A Process

➢ *Berk and DeMarzo (2019), Ch. 28.4*

Although M&A processes vary in length, they share a typical sequence that involves a number of common elements in the pre-deal and post-deal phases.

Before a deal, the acquirer will formulate an **acquisition strategy** and conduct a systematic search for potential candidates. Once a target is identified, the **due diligence process** will commence, during which the target is valued and potential risks are identified. Valuation and forecasting approaches in this context are discussed in the next two subchapter. Two important milestones in this process are the *signing* of the so-called **sales and purchase agreement (SPA)**, as well as the ***closing***, upon which the target shares/net assets are transferred to the acquirer, who then pays the purchase price. The closing date is also important for accounting purposes because it reflects the acquisition date upon which important accounting consequences are centered.

1.3.1 Valuation Basics

Valuation plays a critical role in the M&A process. When deciding upon the maximum price to pay for a target, the acquirer will take the value implications of the transaction into account. These can result from various sources: the stand-alone value of the target, value of possible synergies, and the share of wealth transfers between the acquirer and the incumbent shareholders of the acquiree.

It turns out that there is a certain disconnect between the space and time typically devoted to valuation methods in business school and their significance in the M&A context. Whereas most textbooks focus on fundamental valuation models such as discounted cash flow models, M&A practitioners seem to prefer pricing techniques based on comparative-company multiples. We will review both sets of approaches in this course.

Learning Objectives

After studying this section, you should:

- Appreciate and clearly separate different notions of "value";
- Recognize different approaches to valuing a business; and
- Be able to critically discuss these approaches and the situations in which each is appropriate.

1.3.1.1 What is „value“?

‘Value’ is a multifaceted phenomenon; it is also not easily observed. This becomes strikingly apparent in the M&A context. For example, firms change hands because parties can disagree over value. The predominant view is that value is ‘in the eye of the beholder’, i.e., it is context-specific. There is no one ‘correct’ value. Consequently, there also is not one ‘correct’ valuation approach. Rather, ‘value’ is a term used by humans to describe properties of a business or another asset, and valuation models are ways to describe value. It follows that valuation approaches will reflect the objectives, preferences, and assumptions of those conducting the valuation. As the results of valuations (e.g., growth expectations) will typically have to be communicated to other parties, these assumptions and their effects on value will sometimes need to be made explicit. In any case, the valuer needs to be acutely aware of these assumptions.

In this course, three distinct notions of value play prominent roles, and we need to keep them separate:

- **Book values** (in some contexts called ‘carrying amounts’) are those values at which firms or individual assets and liabilities are carried in the financial statements under accounting conventions and regulations, such as IFRS, German GAAP, tax law, or insolvency law.
- **Market value** (also called ‘price’) is the value of a firm, asset or liability in a given market, such as a stock exchange or other organized, active market in which supply and demand meet. Market value will typically be related to book value, but the magnitudes can differ substantially.
- **Fundamental value** (also called ‘intrinsic’ value) is the value of a firm, asset or liability as assessed using fundamental valuation techniques such as discounted cash flow models. Think Warren Buffet.

All three notions of value are related, but they can deviate from each other for extended periods of time. Fundamental investors take positions under the assumption that market value (price) will converge towards fundamental value (‘intrinsic’ value), but this can take time, or may never happen. In this course, an underlying assumption is that book value (or rather financial reporting as a whole) is useful in determining fundamental value, which can then be employed to challenge a price and ‘beat the market’.

1.3.1.2 Valuation Approaches

- *Lundholm and Sloan (2019), Ch. 10*
- *Hooke (2015), Ch. 13, 15*

Valuation approaches can be distinguished into the following four categories:

- **Discounted cash flow** approaches use forecasted financial statements and cost of capital rates to derive the present value of future cash flow. Several versions exist, which differ in whether they value the firm’s equity directly (equity approaches), or value its unlevered operations (i.e., equity and debt) and then deduct the value of debt to arrive at equity value (entity approaches). Approaches also differ in the way in which the tax shield of debt is reflected in the valuation.
- **Asset-based approaches** assume that the firm’s assets and liabilities in place primarily determine value, with accounting carrying amounts providing a good indication. In bankruptcy settings, for some natural resources firms, and for very mature firms that rely largely on tangible productive assets, book value can provide a meaningful first impression of value.

- **Mixed-method approaches** recognize that book values typically do not fully reflect value, but that book value provides a reasonable, solid lower bound on value. The value differential between fundamental value and book value is then assessed by estimating economic factors not captured by assets in place, such as growth opportunities from sustained competitive advantage.
- **Market-based approaches** (also called comparative company multiples) do not assess fundamental value. Rather, they try to approximate a potential price for a firm that has a given set of fundamental characteristics. For this reason, they apply pricing multiples observed for comparable firms to fundamental value drivers of the firm being valued. These fundamental signals, or anchors, include accounting items such as EBITDA, EPS, or cash flow measures, but also non-financial indicators including website hits, users, or customers. Multiples-based approaches require appropriate comparison firms.

1.3.2 Forecasting basics

Having understood the firm's past through financial statement analysis, we are now in a position to forecast the expected future cash flows and other key performance indicators as inputs to the valuation models that will be discussed in the subsequent sections. Good forecasts are the most important ingredient of good valuations, and forecasts are based on our assumptions about how the combined entity's business will unfold under different scenarios, with multiple factors interacting in complex ways.

1.3.2.1 What are we forecasting, and why?

We know that cash flows alone are a poor basis for forecasting themselves, because they measure value distributed rather than value created. Consider cash flows paid to owners, which we referred to as *net dividend* (= net cash flow to/from equity-holders) above. Dividends represent management's decision on how much of the firm's value to *distribute* to shareholders, and they can be a poor measure of the value *created* during the period. We have argued above that earnings is a better indicator of value created, and that earnings and dividends differ by that portion of earnings that is retained in the firm. Consider also that the balance sheet contains information about the firm's future earnings potential, as well as about its future dividend-paying potential (i.e., the level of retained earnings and cash available). All of this suggests that cash flows are difficult to forecast in isolation, and that information in earnings and balance sheets can help.
We have also seen that the financial statements, i.e., the balance sheet and income statement, provide a description of the firm's business model in terms of accounting numbers. This means that our expectations about how the firm's business (along with its cash flows and associated dividend-paying potential) will evolve in the future can be usefully organized in the structure that the financial statements provide. Importantly, this structure accommodates the considerable complexity and interdependencies that affect how the firm will evolve.
Therefore, we adopt here an approach that derives cash flow-based valuation model inputs from forecasts of financial statements, so-called 'pro forma financial statements'.

1.3.2.2 Pillars of firm value

Two key drivers of firm value are profitability and growth.

- From the perspective of shareholders, profitability is typically expressed in terms of return on equity (ROE).
- Growth measures the change in the magnitude of invested capital that the firm can deploy to earn that return. Whereas in a steady-state situation, growth rates in

earnings, cash flows, equity and assets are determined by the rate of sales growth, growth rates will vary during unsteady periods.

Value creation hinges on achieving high growth, but that growth is not an end in itself: It simultaneously needs to be profitable. There is another connection between the growth and profitability: The *sustainable growth rate* (SGR) describes the rate at which the firm can grow without having to raise additional capital externally, with SGR = ROE x (1- dividend payout ratio). This is intuitive, as cash paid out in dividends will limit the firm's ability to reinvest and grow faster. Firms going through phases of strong growth will therefore typically limit their dividend distributions. Note that, empirically, individual firms will occasionally experience extreme values of ROE and/or growth. However, these values will typically revert to average values very quickly. This phenomenon is called *mean reversion*, and it should make us very skeptical of projections that predict several periods of sustained high growth and/or profitability. After all, most firms are not *Apple*.

1.3.2.3 Structured forecasting

Overview

Financial statement analysis does not necessarily culminate in forecasting and valuation – this depends on our objective. However, valuation necessarily requires sound analysis and forecasting. In what follows, we will focus on our firm-specific analysis conducted in the previous sections to make forecasts not only of ROE and growth, but to forecasts of valuation model inputs from forecasts of the financial statements as a whole.

Developing good forecasts hinges on a systematic, integrated, structured approach. That is, we use the financial statements as a structure to organize our assumptions, deriving forecasted balance sheets, income statements, and cash flow statements. We start with forecasted sales growth, and then use financial ratios from our analysis of the past financial statements as a foundation for forecasting future financial statements (also called 'pro forma' financial statements) under appropriate assumptions.

This process will involve reformulating and simplifying the financial statements, as well as making adjustments to obtain data that is an appropriate basis for forecasting. A full set of forecasted 'pro forma' financial statements provides key inputs to any valuation model.

Approach

Starting with the forecast of next-period sales, we move down the income statement or balance sheet, forecasting the individual line items by applying financial ratio analysis 'in reverse'. Assuming we start with the income statement (which conforms to the function-of-expense method; *UKV*), the next line item to forecast is next-period cost of sales, or cost of goods sold (COGS). Knowing that sales less COGS yields gross profit, one way to forecast COGS is by forecasting next-period *gross margin* (i.e., gross profit divided by sales), calculating gross profit, and backing out COGS. Our forecast of the gross margin will consider the past development of gross margin, as well as our assumptions about the firm's future cost structure. Specifically, to the extent that COGS primarily contains variable costs, it should grow at approximately the same rate as sales. However, if COGS contains substantial fixed costs, these are not expected to rise proportionately. The case in which sales grow more quickly than COGS can reflect economies of scale or scope.

We will proceed in this way until we come to a point where information from the other financial statement is required. For example, predicting next-period COGS in detail requires us to understand the degree to which depreciation and amortization are part of COGS, and how these specific expenses will behave when sales grow as predicted. In order to answer that question, we will have to shift our focus to the balance sheet, as the levels of PP&E and intangibles, respectively, as well as their respective useful lives determine next-period depreciation and amortization. Forecasting next-period PP&E and intangibles will involve assessing the levels of these assets that are needed to generate the projected sales volume. For example, if we forecast a 10% sales growth for McDonald's for next year, we will have to consider the type and level of

investments needed to achieve that growth. Will McDonald's open new stores, will it use the existing ones more efficiently, or will it acquire and redeploy a competitor's stores? The answers to these questions will ultimately manifest in an assumed relation between the forecasted sales volume and the forecasted levels of assets needed to generate it. Recall that this relation is captured by a financial ratio we referred to as *asset turnover*. Asset turnovers can be calculated for different asset classes; they describe the amount of the specific type of asset that is needed to support a given level of sales.

In this manner, we will alternate between the balance sheet and income statement, using predicted values of financial ratios such as mainly *margins*, *turnovers*, and notions of *leverage*, to forecast each of the line items of the balance sheet and income statement. As we come to the end of that process, we will have to leave *one* balance sheet position open, which will serve as the 'plug' that makes the balance sheet balance. In our approach, this is the equity position. That is, we actively project all asset and liability positions, as well as the income statement items down to the net income line. Then we will make a dividend payout assumption. These steps determine the change in retained earnings; the remaining equity position (i.e., subscribed capital and capital reserves) will then serve as the plug that adjusts automatically to make the balance sheet balance.

This structured forecasting approach is highly flexible and instructive, as it explicates the interactions among the financial statement positions, which reflect the complexity of real-world decisions. It is best studied in Excel.

Implementation

Applying the structured forecasting approach in practice requires a number of decisions:

- Quarterly versus annual forecasting: To avoid unnecessary complexity, it is commonly recommended to forecast on an annual basis. However, quarterly financial information can help detect seasonality and thereby help improve forecasts.
- Forecast horizon: The forecast horizon is the number of years over which we have sufficient information (or confidence) to make specific forecasts. It ends when we reach a point where we can no longer do better than make simplified assumptions. Under these assumptions, we view the firm as operating in a steady *state*, which is characterized by a constant growth rate in sales, and by all balance sheet and income statement items growing at that same rate. This implies constant margins, turnovers, and leverage, and cash distributions to shareholders also growing at the same rate as sales. For more mature firms, we can use longer forecast horizons than for start-ups. A typical range is 3-5 years.
- Terminal value assumptions: Terminal value assumptions are a large determinant of value, as they reflect our assumptions about what will happen to the firm during the years after the forecast horizon (e.g., year 5) through infinity. In steady state, the firm's sales should not be assumed to grow faster than the rest of the economy. (However, they might grow more *slowly* if we assume the firm's products to eventually become obsolete.) Further, margins, turnovers, and leverage ratios should typically combine to yield a forecasted ROE that is equal to the cost of equity capital rate. This is intuitive, as competitive forces will erode the firm's competitive advantage in the long run, forcing it to earn no more than the required return (i.e., its cost of equity capital). However, accounting measurement error may permanently distort ROE as a measure of the economic rate of return. Lundholm/O'Keefe (2001) explain in detail how to implement sound terminal value assumptions in an Excel-based valuation model. They recommend that the valuation model input parameters be inferred from the last explicitly forecasted period, where net income and equity both grow at the long-term growth rate. This will yield the appropriate starting points for calculating terminal value.
- Persistence: Financial statements are the result of accounting rules and should describe the performance of a firm as realistically as possible. However, accounting conservatism (losses are reported more quickly than gains) and unusual and/or

infrequent “one-time” events can “bias” the true and fair view of the financial statements of a firm. These biases and time series properties need to be taken into account when forecasting future balance sheets and income statements.

Furthermore, a more or less complex model can underpin each of the balance sheet and income statement items that we need to forecast. For example, the sales forecast is the most important number we have to predict, and it deserves large portions of the time we invest into the forecasting task. Sales, of course, is the number of units sold times price per unit, so it has a volume and a price component. The price component alone reflects several factors, including our bargaining position relative to the customer, but might also be affected by foreign-currency effects in internationally active firms. In large groups with multiple product lines and geographic segments, the task of forecasting sales is truly daunting, and this is to some extent true for all balance sheet and income statement items. This complexity again calls for a systematic approach. For example, it is common to employ a top-down approach that predicts firm-level sales by first considering macroeconomic and industry-wide developments.

Chapter 8 in LS discusses these forecasting details. Ultimately, all balance sheet and income statement items are more or less strongly related to the growth in the magnitude of the firm’s operations, which of course is reflected primarily in the sales forecast. This is especially true as the firm approaches *steady state*, i.e., a phase of sustainable growth and constant relations among the balance sheet and income statement items.

Cash flow analysis

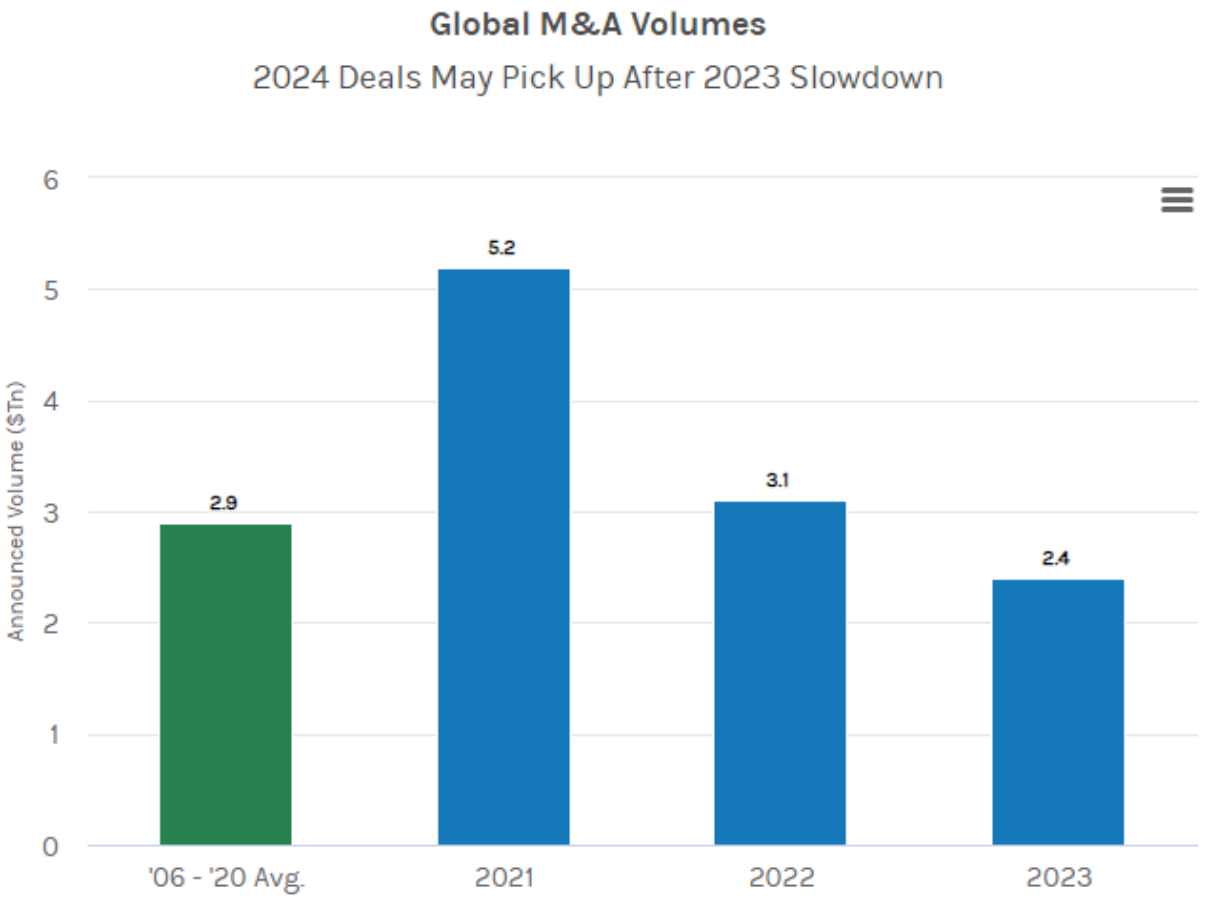
Cash is the ultimate goal of the company‘s activities. Forecasting future income statements and balance sheets yield forecasted cash flow statements as well. However, you should check your assumptions for economic sense. You should understand the cash consequences of the firm‘s operating, investing and financing activities. Sometimes, your assumptions force you to circle back. Evaluating the cash flow from operations, the cash flow from investing, and the cash flow from financing in detail gives you hints whether your assumptions to forecast income statement items and balance sheet items make sense.

1.4 Evidence on the M&A market

Merger and Acquisition (M&A) activities are pivotal components of corporate strategy, facilitating growth, consolidation, and diversification in various industries. Analyzing evidence from the M&A market provides valuable insights into the dynamics, trends, and implications of these transactions. In this chapter, we delve into recent statistics and key findings to elucidate the landscape of M&A activities, encompassing deal volumes, notable transactions, high-goodwill deals, and market reactions of both targets and acquirers.

1.4.1 Deal Volumes:

In recent years, global M&A activity was influenced by economic uncertainties and geopolitical factors. Deal volumes increased after the end of the COVID-19 pandemic but decreased since. According to data from leading financial research firms, total deal volumes in 2023 were slightly below the 2006 -2020 average



Source: Refinitiv as of January 2, 2024. Includes global announced transactions, each with an aggregate value of $100MM or more. Includes transactions with estimated values. Excludes terminated transactions. Future terminations of pending transactions will reduce totals shown.

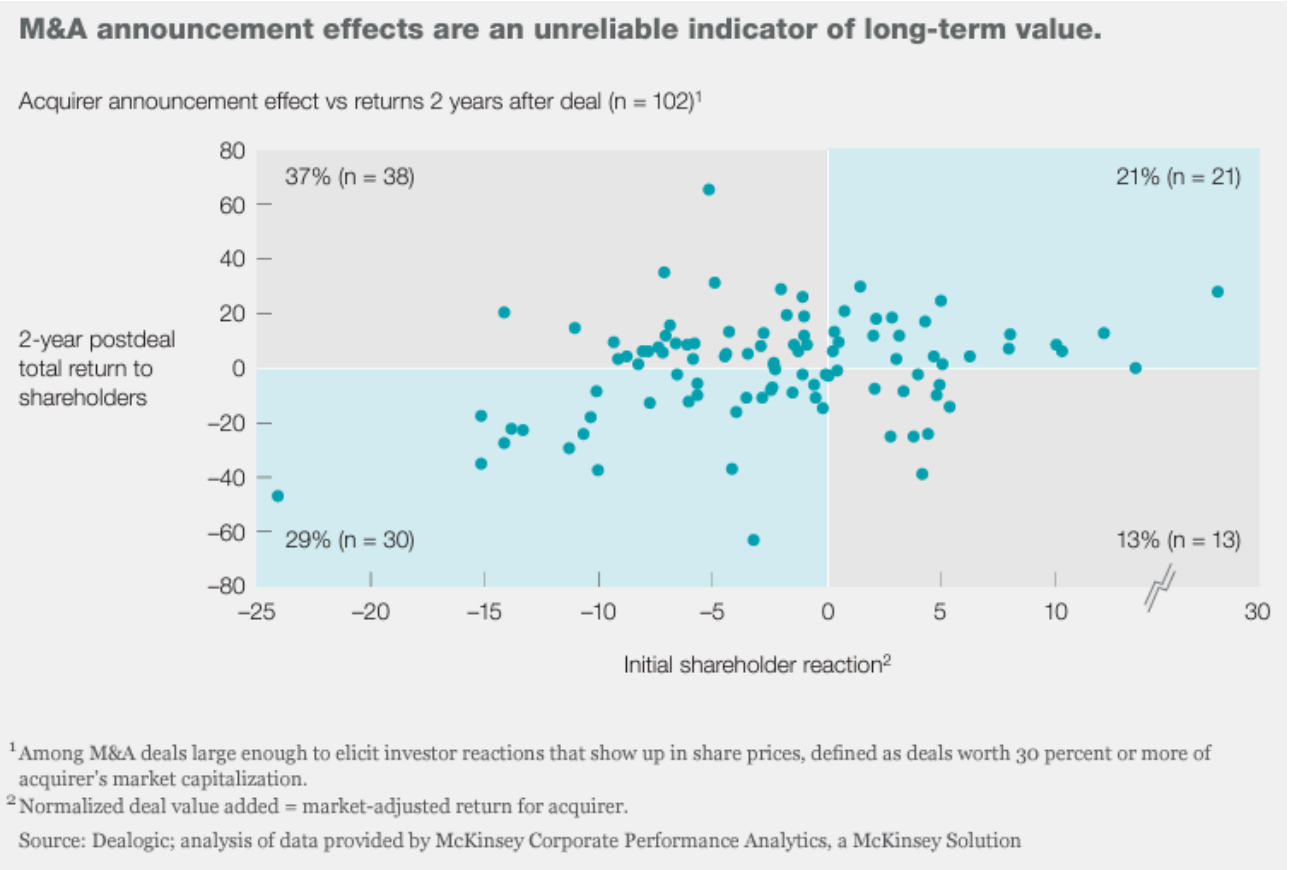
1.4.2 Market Reactions:

The announcement of M&A deals typically elicits varied market reactions from stakeholders, including shareholders of both the acquiring and target companies, as well as industry analysts and regulators. Studies examining market reactions have revealed nuanced insights into the perceived value and implications of M&A transactions.

Upon deal announcements, targets often experience substantial stock price movements, reflecting market expectations, synergies, and perceived deal premiums. Similarly, acquirers may encounter volatility in their stock prices, influenced by factors such as the perceived strategic fit, integration challenges, and financing arrangements.

Moreover, it's important to note that while the initial market reactions to M&A announcements provide valuable insights, they may not always accurately reflect the long-term success or failure of the transaction. Studies have shown that there can be a potential divergence between the immediate shareholder reaction and the ultimate performance of the merged entity. Factors such as integration execution, realization of synergies, changes in market conditions, and broader economic trends can significantly influence the long-term outcomes of M&A deals. Therefore, while market reactions offer valuable signals, investors and stakeholders must assess the strategic

rationale and execution capabilities behind the transaction to gauge its true impact on shareholder value over time.



1.5 ESG and M&A

The integration of climate change considerations into mergers and acquisitions (M&A) strategies extends beyond mere environmental concerns to profoundly impact valuation and forecasting. Companies engaging in M&A transactions must account for climate-related risks and opportunities, as they directly influence asset valuation and future performance projections. Assets vulnerable to climate risks, such as those in industries susceptible to regulatory changes or physical impacts of climate change, may experience discounted valuations. Conversely, companies with strong sustainability practices or innovative climate solutions may command premiums, reflecting their perceived resilience and growth potential in a transitioning economy. As a result, climate change factors have become integral components of due diligence processes, shaping the valuation methodologies and forecasts that underpin M&A decision-making. In this dynamic landscape, accurate assessment and integration of climate-related considerations are essential for ensuring sound investment decisions and long-term value creation.

1.5.1 Example from current research

➢ Sautner, Z., van Lent, L., Vilkov, G. & Zhang, R. (2023) Pricing Climate Change Exposure. Management Science 69(12), pp.7540-7561.

The study examines the relationship between firm-level climate change exposure and risk premiums, employing different methodologies to gauge investor preferences. While the realized risk premium for climate change exposure initially appears insignificant, investors anticipate

earning a premium when acquiring stocks with higher exposure. Analysis of temporal dynamics reveals fluctuations, with a post-2009 uptrend followed by varying patterns. Investors perceived high-exposure stocks as volatile with elevated crash risk between 2011 and 2014, leading to increased risk premiums. However, a shift in perception post-2015 associated smaller variance and higher opportunities with such stocks, reducing risk premiums. Economic channels influencing risk quantities include green innovation, adoption of climate change adaptation plans, flows into ESG funds, and oil prices. These insights contribute to understanding climate finance dynamics and investor attitudes towards climate-related risks and ESG considerations.

2. Accounting: Conceptual and institutional background

2.1 German GAAP and international GAAP

Financial reporting standards vary across jurisdictions, with Germany following its own Generally Accepted Accounting Principles (GAAP) while also adopting International Financial Reporting Standards (IFRS) for certain reporting entities. Understanding the nuances between German GAAP and International GAAP is essential for comprehending the financial reporting implications of M&A transactions.

2.1.1 German GAAP:

German GAAP, largely governed by the German Commercial Code, emphasizes principles such as prudence and caution in financial reporting. The objectives of financial reporting under German GAAP align with providing stakeholders with a true and fair view of the company's financial position and performance.

Financial statements prepared under German GAAP typically include:

1. Balance Sheet (Bilanz): Presents the company's assets, liabilities, and equity as of a specific date.
2. Income Statement (Gewinn- und Verlustrechnung): Details the company's revenues, expenses, gains, and losses over a specific period.
3. Notes (Anhang): Provides additional explanatory information and disclosures required by law.
4. Annual reports of publicly traded German firms often consist of the financial statements prepared under IFRS, ensuring compliance with international standards.

2.1.2 International GAAP (IFRS):

IFRS, developed by the International Accounting Standards Board (IASB), aims to provide decision-useful information primarily for capital providers. The objectives of financial reporting under IFRS focus on portraying levels and changes over time in financial position, performance, and cash flows.

Key components of financial statements prepared under IFRS include:

1. Statement of Financial Position (Balance Sheet): Presents the company's assets, liabilities, and equity.
2. Statement of Profit and Loss (Income Statement): Details the company's revenues, expenses, gains, and losses.
3. Statement of Comprehensive Income: Includes items not recognized in the income statement, such as gains and losses on revaluation of assets.
4. Statement of Changes in Equity: Shows changes in equity during the reporting period.
5. Statement of Cash Flows: Highlights cash inflows and outflows from operating, investing, and financing activities.
6. Notes to the Financial Statements: Provides additional disclosures and explanatory information.

IFRS emphasizes qualitative characteristics such as relevance and faithful representation to ensure the information is decision-useful for investors and other stakeholders. Moreover, IFRS financial statements are prepared on the assumption of a going concern, adhering to accrual accounting principles.

2.1.3 Comparison and Implications:

While both German GAAP and IFRS aim to provide stakeholders with relevant and reliable financial information, differences exist in their application and reporting requirements. Understanding these disparities is crucial, especially in M&A transactions where financial statements play a pivotal role in valuation and due diligence processes.

Companies operating internationally or seeking global investments often opt for IFRS to enhance comparability and transparency. However, for domestic reporting and compliance, adherence to German GAAP remains essential, particularly for firms listed on German stock exchanges.

2.1.4 Consolidated versus Separate Financial Statements

For several reasons, it is important to distinguish between consolidated financial statements (also referred to as the group accounts) and separate financial statements (also referred to as unconsolidated, legal-entity, or parent-company financial statements). Whereas the latter are required for most legal entities under German commercial law ('HGB') and tax law, the latter are prepared only by parent companies. In a sense, much of this course deals with converting several firms' legal-entity financial statements into a set of consolidated financial statements.

For example, the parent-company balance sheet of Volkswagen AG display investments in Volkswagen AG's subsidiaries (i.e., firms that Volkswagen AG controls, such as Audi AG, Scania AB, or SEAT S.A.) as financial assets. In contrast, the consolidated balance sheet of Volkswagen AG contains all of the assets and liabilities of these subsidiaries, its income statement contains all of their income and expense, and its cash flow statement contains all of their cash inflows and cash outflows.

This is true even where Volkswagen AG controls a firm without holding 100% of its voting shares. For example, Volkswagen AG held 75.3% in MAN SE's equity in 2014 (See Volkswagen Group, Annual Report 2014, p. 53). This means that there were other MAN shareholders, called non-controlling interests, holding the remaining 24.7%. Although legally they were not part of Volkswagen Group, for accounting purposes they were, because the consolidated financial statements show 100% of all accounting items of subsidiaries. However, the amounts on the balance sheet and income statement that relate to the non-controlling shareholders were shown separately from those attributable to the shareholders of Volkswagen AG.

Why are consolidated financial statements required? In a group of firms ("Konzern"), legal-entity financial statements are not sufficient for assessing the parent's or the subsidiaries' financial positions. For example, if a subsidiary is heavily financed with debt, this high leverage may not be apparent from the parent's legal-entity financial statements alone, if the parent has lower leverage. Only the consolidated financial statements will make transparent that the group as a whole relies heavily on debt.

2.2 Legal-entity and consolidated financial statements

2.2.1 Group accounting theories

This section starts the discussion on accounting for business combinations. Recall that a business combination is a transaction in which a parent obtains control of another party, the subsidiary. The key question in this context is how the parent's financial statements should reflect the new subsidiary. Should the parent's balance sheet show the subsidiary as a single (net) asset, and should its income statement display the income that the subsidiary generates as a single (net) income item? Alternatively, should the parent's financial statements recognize the subsidiary's assets, liabilities, income and expense items on a gross basis, along with their own? What happens if the parent has not acquired *all* of the subsidiaries shares, but a sufficient number to obtain control? How, if at all, should the parent's financial statements reflect the remaining equity

stake held by the non-controlling shareholders? If so, are these to be displayed as shareholders or lenders? Should all subsidiaries be shown, or only the domestic ones, or only those that the parent intends to hold in the long term?

Learning Objectives

After studying this section, you should:

- Be able to argue different lines of reasoning regarding the concepts underlying the consolidated financial statements; and
- Understand how different methods of accounting for M&A transactions follow from them.

Summary of Section Content

- *Pellens et al. (2021), Ch. 21*
- *Picker et al. (2016), Ch. 23.1*

2.2.1.1 Theoretical Underpinnings of Consolidated Reporting

- **Parent company theory**: According to parent company theory, the business group is not an economic unit in itself, but rather corresponds to the parent company and its ownership interest in individual subsidiaries. Where a parent's stake in its subsidiary is less than 100%, only the fractional ownership interest is part of the business group. In its most extreme form, the parent company concept views the subsidiary as a financial investment of the parent. Thus, the natural solution is to reflect it as a single (financial) asset on the parent's books. Alternative measurement approaches include carrying it at fair value, at historical cost subject to impairment testing, or under the equity method of accounting. In a more moderate interpretation of parent company theory, the consolidated statements are a somewhat extended version of the parent company's accounts. These consolidated statements also comprise the assets, liabilities, income and expense items of the subsidiary. Importantly, non-controlling shareholders are viewed as external debt capital providers; their stake in the subsidiary's equity is not included in the consolidated equity of the business group.
- **Entity theory**: However, if our perspective is that the parent's control over the subsidiary – at least economically – creates a new entity, an economic compound, a group of firms ('Konzern'), then the consolidated statements must represent the financial realities of this new group. These 'group accounts' combine the financial statements of the parent and the subsidiary with each other. They consolidate intragroup balances and transactions because *within* one entity, there can be no equity investments, loans or sales transactions. All that matters, and should be reflected in the group accounts, is transactions and relationships with parties outside of the group. The entity theory is consistent with fully including in the consolidated financial statements all of the assets, liabilities, income and expense items of all subsidiaries on a gross basis (*Vollkonsolidierung*), along with the parent's. This is true even where the parent's controlling equity stake in a given subsidiary is less than 100%. That is, non-controlling shareholders are viewed as equityholders in the consolidated group, although the parent company's shareholders have no legal claim on that portion of a subsidiary's equity or profit that belongs to these outside owners.

Usually, an accounting approach to capturing investments in subsidiaries will not be neither *exclusively* determined by one of the two theoretical viewpoints, but rather display features of both points of view. Yet, the entity theory view somewhat dominates financial reporting today; as a result, business combinations are reflected in a **set of consolidated financial statements**

('Konzernabschluss') that parents are required to prepare, and that captures the parent and its subsidiaries.

If you are interested in parent company theory and entity theory in more detail, please refer to Beckman (1995). The article provides a very good overview of the economics behind non-controlling interests, and their implications for the accounting treatment of non-controlling interests.

2.2.1.2 Approaches to Capturing Investments in Subsidiaries

- *Nurnberg and Sweeney (2007), pp. 257-265*

However, the entity theory is consistent with several possible ways of capturing M&A transactions in financial statements, and traces of parent-company theory reasoning still influence current IFRS requirements. In what follows, we outline these alternatives and the extent to which they are consistent with the entity and parent-company theories.

If a business combination is interpreted as a merger of two equal parties joining forces, the notion of a parent 'acquiring' and subsequently 'controlling' a subsidiary are misguided. In these cases, an accounting method is required that adequately captures the fact that the two parties are equal partners embarking on a common venture together. The most 'radical' way to do this is the **fresh-start method**, under which both firms' assets and liabilities are revalued to their fair values, including any goodwill reflected in the consideration exchanged between the two parties' former owners. This accounting depiction is consistent with the idea that both parties are 'acquired' by a newly formed entity that combines both their operations. Due to this revaluation, the combined entity's asset bases are typically much larger than the previous asset bases of the parties involved, making it difficult for the new entity to generate an adequate return on the book value of assets. Generating such a return is much easier under the alternative **pooling-of-interests method**, which carries over the original book values from the combining parties' previous financial statements. Therefore, no fair value increments or goodwill are recognized, leading to a lower asset base of the new entity. Whereas the pooling-of-interests method used to be applicable under German GAAP, IFRS and U.S. GAAP (e.g., it was used in the combination of Daimler-Bent AG and Chrysler Corp. that formed DaimlerChrysler in 1998), none of the methods in currently allowed under either set of financial reporting standards. Among other reasons, the IASB mandates the acquisition method in order to enhance comparability, and to avoid having different methods available for economically similar business combinations (see further IFRS 13 BC22–57).

Under current German GAAP, IFRS and U.S. GAAP, any business combination is viewed (and reported) as an acquisition of a subsidiary by a parent. Recall that under the entity theory, any such acquisition results in an extension of the group, with the controlled subsidiary being fully included regardless of the parent's equity stake. As a result of this acquisition process, only the subsidiary's assets and liabilities are revalued, as the parents are not changing hands. The **full goodwill method** is the most extreme way of achieving this. Not only does it revalue 100% of the subsidiary's assets and liabilities to fair value, it also recognizes any goodwill that relates to the equity stake held by non-controlling shareholders of the subsidiary.

If we argue that any non-controlling interests' share in the subsidiary's assets and liabilities has not been subject to acquisition (as it legally indeed has not been), recognizing any goodwill related to it does not properly reflect the underlying realities of the deal, as no purchase price has been paid for it. Instead, revaluation is limited to (100%) of the subsidiary's assets and liabilities, which the parent now controls due to its acquisition of a controlling stake. This reasoning, which reflects elements of parent-company theory, underlies the **acquisition method** that is currently required under German GAAP, IFRS and U.S. GAAP. (A former version of it, in Germany called *Buchwertmethode* and no longer permitted, abstained from revaluing the non-controlling

shareholders' portion of the subsidiary's assets and liabilities, carrying these over at book values. In effect, only the parent's portion – the one that was actually acquired – was revalued.)

Consistent with entity theory, the equity stakes held by non-controlling shareholders are displayed separately within the group's equity under IFRS. In contrast, parent-company theory would imply that these non-controlling interest be viewed (and recognized) as debt capital provided to the group by outsiders, or at least as a separately displayed category between equity and debt.

2.3 Control and Scope of Consolidation

Navigating the complexities of accounting for business combinations stands as one of the most debated subjects within the realm of International Financial Reporting Standards (IFRS). The intricacies surrounding this matter frequently surface in enforcement actions instigated by regulatory bodies such as the German Financial Reporting Enforcement Panel (FREP), known as Deutsche Prüfstelle für Rechnungslegung (DPR), alongside other European enforcement agencies operating under the auspices of ESMA, the European Securities Markets Authority.

Since 2013, the landscape of IFRS has witnessed the implementation of new mandates dictating the determination of how parent companies acquire control over subsidiaries, as well as delineating the scope of subsidiaries subject to consolidation. These regulations have been catalyzed, at least in part, by the utilization of specialized entities, particularly prevalent among certain sectors like banking. These entities, known as special-purpose entities, were deliberately left unconsolidated, enabling companies to obscure debt and associated risks from their balance sheets, thereby presenting a facade of lower leverage.

In this section, we delve into an exploration of these requirements, dissecting the mechanisms by which parent entities establish control over subsidiaries and elucidating the parameters governing the scope of consolidation. Through this examination, we aim to unravel the intricacies surrounding business combinations and consolidate a comprehensive understanding of their accounting implications under IFRS.

Learning Objectives

After studying this section, you should:

- Understand, and be able to apply, the requirements for determining how parents obtain control of subsidiaries, and the scope of subsidiaries to be consolidated.

2.3.1 Summary of Section Content

2.3.1.1 Sequence of steps in preparing group accounts

- *Pellens et al. (2021), Ch. 21.3.1*
- *Picker et al. (2016), Ch. 21.1 – 21.3.*

The following steps – discussed in this course – are essential in preparing a set of consolidated financial statements:

- Assess whether firm faces a legal requirement to prepare consolidated financial statements;
- Determine the scope of subsidiaries to be consolidated;
- Standardize the subsidiaries' financial statements in terms of recognition, measurement, currency, and accounting period;
- Add the standardized statements line by line;
- Consolidate any intragroup transactions and balances.

2.3.1.2 Requirement to prepare consolidated financial statements

Under German commercial law (§ 290 HGB), a firm is required to prepare consolidated financial statements when it is a parent, i.e., when it controls at least one subsidiary. Certain exceptions apply, for example when a parent is itself a subsidiary to a superordinate parent, and is not publicly traded.

In this course, we focus on publicly listed firms, which in the EU are required to prepare their consolidated financial statements under IFRS (for German firms: § 315a German Commercial Code; *HGB*). Non-publicly listed German parent firms can choose to prepare their consolidated financial statements under either IFRS or HGB. Other EU member states vary in that IFRS consolidated financial statements for non-publicly listed parent firms are either required, permitted, or prohibited.

2.3.1.3 Scope of subsidiaries to be consolidated

Under IFRS, firms apply IFRS 10 *Consolidated Financial Statements* to determine which other firms they have to consolidate. Consolidated financial statements under IFRS 10 principally follow the entity theory; they are the financial statements of a group in which the assets, liabilities, equity, income, expenses and cash flows of the parent and its subsidiaries are presented as those of a single economic entity (IFRS 10.A). Parent firms fully consolidate all of their subsidiaries, regardless of their countries of domicile, where a subsidiary is an entity controlled by another entity, the parent. The parent principally consolidates *all* of its subsidiaries, subject to the following exceptions:

- Subsidiaries acquired with a view to resale are subject to the special measurement and presentation requirements under IFRS 5 *Non-current Assets Held for Sale and Discontinued Operations*;
- Subsidiaries that in aggregate, are immaterial, need not be consolidated according to IAS 1 *Presentation of Financial Statements*; and
- So-called investment entities (e.g., investment funds) do not consolidate their subsidiaries; instead, investment entities measure an investment in a subsidiary at fair value through profit or loss in accordance with IFRS 9 in their separate financial statements. This represents a deviation from the entity theory.

The key concept in IFRS 10 is the concept of *control*. According to IFRS 10.6 and IFRS 10.A, control exists when the parent is exposed, or has rights, to variable returns from its involvement with the parent and has the ability to affect those returns through its power over the subsidiary. This definition shows that control rests on three pillars:

- **Power**: “An investor has power over an investee when the investor has existing rights that give it the current ability to direct the relevant activities, i.e. the activities that significantly affect the investee’s returns” (IFRS 10.10).
- **Exposure**, or rights to, variable returns: “An investor is exposed, or has rights, to variable returns from its involvement with the investee when the investor’s returns from its involvement have the potential to vary as a result of the investee’s performance. The investor’s returns can be only positive, only negative or both positive and negative” (IFRS 10.11). For example, profits or dividends represent such variable returns. “Although only one investor can control an investee, more than one party can share in the returns of an investee. For example, holders of non-controlling interests can share in the profits or distributions of an investee” (IFRS 10.12).
- **Ability to use power** to affect variable returns: “An investor controls an investee if the investor not only has power over the investee and exposure or rights to variable returns from its involvement with the investee, but also has the ability to use its power to affect

> the investor's returns from its involvement with the investee" (IFRS 10.17). An investor with decision-making rights over an investee needs to determine whether it is a principal or merely an agent with delegated decision-making rights (IFRS 10.18).

As the control concept suggests, subsidiaries potentially include those that are controlled through means other than a majority of the voting shares. These '**special-purpose entities**' (SPE) include entities specifically set up by the parent to effect certain transactions, such as research and development (R&D) projects, leasing arrangements, of asset-backed securities transactions – where the parent intends to shield its financial statements from the financial reporting effects of these transactions by not consolidating these SPEs. Whereas the previous IFRS requirements (IAS 27 and SIC-12) allowed certain structures effectively controlled by the parent to remain unconsolidated, the control concept in IFRS 10 is intended to be more inclusive, avoiding these cases.

3. Accounting for acquisitions

Consistent with the notion that all business combinations, regardless of 'label', economically represent acquisitions, IFRS 3 prescribes that they be accounted for under the so-called **acquisition method**. This section discusses the main elements of this method. At its core, it deals with the so-called 'purchase price allocation', a process in which the acquirer measures the purchase consideration paid, and allocates it to the assets acquired, liabilities assumed, yielding any remaining goodwill or bargain purchase gain. For an example, refer to the purchase price allocation for Porsche in the Volkswagen Group Annual Report for 2012 (p. 263; https://www.volkswagenag.com/ir/Y_2012_e.pdf).

Learning Objectives

After studying this section, you should:

- Be able to identify a business combination; and
- Understand, and be able to apply, the requirements for the acquisition method of accounting for business combinations.

Summary of Section Content

- *Pellens et al. (2021), Ch. 21.3.3.3*
- *Picker et al. (2016), Ch. 14.1-14.5, 23.1-23.2*

3.1 Identifying the acquirer

3.1.1 Identifying a business combination

"A transaction or other event in which an acquirer obtains control of one or more businesses" is referred to as a **business combination** (IFRS 3.A). A **business** is "an integrated set of activities and assets that is capable of being conducted and managed for the purpose of providing a return in the form of dividends, lower costs or other economic benefits directly to investors or other owners, members or participants" (IFRS 3.A). The business acquired often, but not necessarily, consists of an incorporated subsidiary.

3.1.2 Sequence of acquisition method steps

Applying the acquisition method to a business combination involves the following steps:

- Identifying the acquirer;
- Determining the acquisition date;
- Recognizing and measuring the identifiable assets acquired and liabilities assumed; and
- Recognizing and measuring goodwill or a gain from a bargain purchase, as well as any non-controlling interest in the acquiree.

3.1.3 Identifying the acquirer

As discussed previously, business combinations according to IFRS 3 include transactions sometimes referred to as 'true mergers' or 'mergers of equals' (IFRS 3.A). In these and other 'non-standard' transactions, it is not obvious who is the **acquirer** and who is the **acquiree**. Recall that the acquirer is the party that obtains control, according to IFRS 10, of the other. As this is sometimes non-trivial to determine, IFRS 3.B14-B18 provides additional guidance. For example, in a business combination effected primarily by transferring cash (by exchanging equity interests), the acquirer is usually the entity that transfers the cash (that issues its equity interests). One exception is a so-called '**reverse acquisition**', in which a larger entity 'allows itself to be acquired' by a

smaller entity. Effectively, then, the legal acquiree economically is the acquirer, and is treated as such in the financial reporting depiction of the deal (IFRS 3.B19-B27). Reverse acquisitions, for example, used to represent a major way for Chinese companies to obtain stock listings in the US without having to undergo an IPO process.

3.2 Determining the acquisition date

Accounting for a business combination requires the acquirer to identify the **acquisition date**, which triggers important financial reporting consequences. This is "the date on which the acquirer obtains control of the acquiree" (IFRS 3.A). That date "is generally the date on which the acquirer legally transfers the consideration, acquires the assets and assumes the liabilities of the acquiree—the closing date. However, the acquirer might obtain control on a date that is either earlier or later than the closing date" (IFRS 3.9).

3.3 Purchase price allocation

3.3.1 Recognizing assets acquired and liabilities assumed

Since a business combination economically represents an acquisition, IFRS 3 prescribes as a general recognition principle that the acquirer recognize all of the acquiree's identifiable assets acquired, and all of the acquiree's liabilities assumed (IFRS 3.10) – regardless of whether these assets and liabilities were recognized on the acquiree's books before the transaction (IFRS 3.13). For example, when Volkswagen acquired Porsche in 2012, it recognized the Porsche brand name as an intangible asset, although that brand name was not previously recognized on Porsche's balance sheet.

To qualify for recognition, the assets acquired and liabilities assumed must meet the definitions of assets and liabilities in the *Conceptual Framework* at the acquisition date; they must also be identifiable. "An asset is identifiable if it either: (a) is separable, i.e. capable of being separated or divided from the entity and sold, transferred, licensed, rented or exchanged, either individually or together with a related contract, identifiable asset or liability, regardless of whether the entity intends to do so; or (b) arises from contractual or other legal rights, regardless of whether those rights are transferable or separable from the entity or from other rights and obligations" (IFRS 3.A).

In line with the entity theory, the acquirer also recognizes any non-controlling interests in the acquiree (see more below).

IFRS 3 specifies several exceptions to the recognition principle (IFRS 3.22-31). For example, the acquirer recognizes "a contingent liability assumed in a business combination if it is a present obligation that arises from past events and its fair value can be measured reliably" (IFRS 3.23). These contingent liabilities are not recognized outside of a business combination (IAS 37 *Provisions, Contingent Liabilities and Contingent Assets*).

3.3.2 Measuring assets acquired and liabilities assumed

As a general measurement principle, IFRS 3.18 prescribes that the acquirer measures "the identifiable assets acquired and the liabilities assumed at their **acquisition-date fair values**." IFRS 3.24–31 specify limited exceptions to this measurement principle. These relate, for example, to income tax items (measured under IAS 12 *Income Taxes*) or employee benefits (measured under IAS 19 *Employee Benefits*).

3.3.3 Income tax effects

As a result of the above recognition and revaluation procedures during the 'purchase price allocation', the resulting carrying amounts for the acquiree's assets and liabilities in the parent's consolidated financial statements will tend to deviate from those in the subsidiary's pre-deal tax

accounts. Many of these differences give rise to **deferred taxes**, which are determined according to IAS 12.

3.3.4 Goodwill, bargain purchase, and non-controlling interests

The next key element for the acquirer to determine is the **consideration paid**. This is rarely trivial, as the consideration paid to the target's former owners typically consists of a combination of cash, equity and other forms of consideration. The consideration is "**measured at fair value**, which shall be calculated as the sum of the acquisition-date fair values of the assets transferred by the acquirer, the liabilities incurred by the acquirer to former owners of the acquiree and the equity interests issued by the acquirer" (IFRS 3.37).

Importantly, **contingent consideration** is sometimes used to share risks between the acquirer and the target's former owners. This includes earn-out clauses where the seller must 'earn' part of the consideration based on the performance of the target subsequent to the deal. In this case, part of the consideration is paid only after closing, and the amount of payment is based on the target achieving certain financial goals. The acquirer recognizes the **acquisition-date fair value** of contingent consideration as part of the consideration transferred in exchange for the acquiree (IFRS 3.39). An obligation to pay contingent consideration is classified as either a financial liability or as equity (IFRS 3.40).

Goodwill is calculated as the excess of (1) the consideration transferred, (2) the amount of any non-controlling interests in the acquiree, and (3) the fair value of any previously held equity interest in the acquiree over the net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed, as described above (IFRS 3.32). In the simplest case, this is the purchase price paid for 100% of the target less the fair value of the target's net assets. As such, goodwill represents any excess value that the buyer is willing to pay over and above the fair value of the identifiable net assets acquired. Reasons given for such an acquisition premium typically include expected synergies from combining the two businesses (refer to section 1). Frequently, however, goodwills are so large that one cannot help but wonder whether acquirer management overpaid. Goodwill is exempted from deferred tax requirements (IAS 12.15, IAS 12.21).

A case where the above calculation yields a negative amount (i.e., in the simplest case, when the purchase price is less than the fair value of the target's net assets) is referred to as a **bargain purchase** or 'lucky buy' (IFRS 3.34). If the negative amount remains after a reassessment, IFRS 3.34 requires that it be recognized in acquirer profit or loss on the acquisition date.

As discussed above, **non-controlling interests** represent the equity stake in the target held by shareholders other than the parent. IFRS 3.19 offers parent firms a transaction-by-transaction accounting choice for measuring non-controlling interests:

- Under the **partial goodwill method**, the non-controlling interest is measured at the non-controlling shareholders' proportionate share in the recognized amounts of the acquiree's identifiable net assets. The method takes its name from the fact that any goodwill arising in the business combination is limited to that part relating to the equity stake acquired by the parent.
- In contrast, the **full goodwill method** requires that the non-controlling interest be measured at fair value; i.e., it includes any goodwill attributable to the equity stake that belongs to the non-controlling shareholders.

3.4 Pre-deal PP&A

Pre-deal PP&A plays a pivotal role in the success of mergers and acquisitions (M&A) transactions by laying the groundwork for informed decision-making and strategic alignment. This phase involves comprehensive assessment and analysis of potential target companies, market dynamics, and strategic fit. Pre-deal PP&A encompasses due diligence activities to evaluate the financial, operational, and legal aspects of target firms, aiming to uncover risks, synergies, and value drivers. Additionally, it involves rigorous financial modeling and scenario analysis to forecast the potential impact of the transaction on the acquirer's financial performance and shareholder value. By conducting thorough pre-deal PP&A, acquirers can mitigate risks, identify opportunities, and optimize deal structures, setting the stage for successful M&A execution and value creation.

3.5 “Window-dressing” in M&A accounting

"Window-dressing" in M&A accounting refers to the practice of manipulating financial statements or disclosures to present a more favorable picture of a company's financial position or performance during the M&A process. This may involve selectively timing certain transactions or adjustments to artificially inflate earnings, assets, or other key metrics to enhance the perceived value of the company being acquired. Such practices can mislead acquirers and investors, distorting their assessment of the target company's true financial health and potential risks. While window-dressing tactics may temporarily boost attractiveness during negotiations, they often lead to long-term negative consequences, such as post-merger integration challenges or legal ramifications. Therefore, it is essential for acquirers to conduct thorough due diligence and exercise caution to detect and mitigate the risks associated with window-dressing in M&A accounting.

4. Joint Arrangements, Associates and Financial Instruments

In this course, we have discussed M&A transactions broadly to encompass business combinations as well as other far-reaching deals. Such deals include the acquisitions of substantial stakes in joint ventures (witness, for example, Volkswagen's Chinese operations) and associates (such as Volkswagen's investment in Porsche before it took a controlling stake), as well as smaller equity stakes held for a variety of purposes. All of these transactions have their own unique financial statement implications and related challenges. For example, whereas investments in joint ventures and associates are accounted for using the equity method, smaller equity investments are typically carried at fair value and revalued at each reporting date.

Learning Objectives

After studying this section, you should:

- Understand, and be able to apply, the accounting requirements for investments in joint ventures and associates; and
- Appreciate the financial reporting issues related to other types of equity investments.

Summary of Section Content

- *Pellens et al. (2021), Ch. 17, 22*
- *Picker et al. (2016), Ch. 21.1 – 21.3.*

4.1 Joint Arrangements

- *IFRS 11, Illustrative Examples (in particular, no. 2 and 5)*

Guidance related to the accounting for joint arrangements is given in IFRS 11 *Joint Arrangements*. Joint arrangements (i.e., arrangements of which two or more parties have joint control; IFRS 11.A, IFRS 11.4) come in two forms:

- A **joint operation** is a "joint arrangement whereby the parties that have joint control of the arrangement have rights to the assets, and obligations for the liabilities, relating to the arrangement" (IFRS 11.A, IFRS 11.15). Joint operations typically (but not necessarily) are joint arrangements that are not carried through a separate legal entity or similar structure.
- A **joint venture** is a "joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement" (IFRS 11.A, IFRS 11.16). Joint ventures are always structured through a separate vehicle.

These two types of joint arrangements are distinguished based on the rights and obligations of the parties to the arrangement (IFRS 11.14), which can be a non-trivial task that often requires judgment.

Similar to the notion of control in the context of parent-subsidiary relationships, **joint control** is a key concept for the reporting of an investor's involvement in a joint arrangement. Joint control is the "contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require the unanimous consent of the parties sharing control" (IFRS 11.A, IFRS 11.7).

4.2 Associates

According to IAS 28 *Investments in Associates and Joint Ventures*, an **associate** is "an entity over which the investor has significant influence" (IAS 28.3).

Significant influence is “the power to participate in the financial and operating policy decisions of the investee but is not control or joint control of those policies” (IAS 28.3). Significant influence is assumed to exist if the investor “holds, directly or indirectly (e.g. through subsidiaries), 20 per cent or more of the voting power of the investee” (IAS 28.5). However, such a voting stake is neither a necessary requirement nor does lack of it imply that significant influence does not exist.

4.3 Accounting for joint arrangements and associates

Whereas joint ventures and associates are accounted for under the equity method in the investor’s consolidated financial statements, joint operations are subject to proportionate consolidation.

- Under the **equity method** (IAS 28.10-43), the investor initially recognizes its investment at cost as a separate balance sheet item, typically labeled “investments accounted for using the equity method”. In subsequent periods, it adjusts the carrying amount to reflect its share in any changes in the investee’s book value of equity. For example, when the investee makes a profit, the investor will increase the investment’s carrying by its share in that profit, with a corresponding gain appearing in a separate line (typically labeled “share of the profit or loss of associates and joint ventures accounted for using the equity method”) in the income statement. If the investee subsequently distributed (part of) this profit as a dividend, the investee will recognize its share in the cash received, and reduce the carrying amount of the investment by the corresponding amount. The investor’s share in any other changes in the investee’s book value of equity are correspondingly captured in the investor’s consolidated financial statements.
- Accounting for a joint operation requires the investor to recognize its assets and liabilities (including any items held jointly) as well as revenue and expense related to the joint operation. If the joint operation is a separate entity, this approach is referred to as **proportionate consolidation**, a form of consolidation that is consistent with an extreme parent-company theory view (refer to section 5). For example, full consolidation of a 50% equity stake would involve including 100% of the investee’s assets, liabilities, revenue, and expense items in the investor’s consolidated financial statements, and reporting a 50% non-controlling interest (possibly including a goodwill element) within consolidated equity. In contrast, proportionate consolidation includes 50% of the investee’s assets, liabilities, revenue, and expense items in the investor’s consolidated financial statements, with no non-controlling interest being reported.

In the investor’s separate IFRS financial statements, if any, investments in joint ventures and associates are accounted for either at cost, or in accordance with IFRS 9 *Financial Instruments* (IFRS 10.10; see below).

When an investment carried at cost is classified as held for sale, IFRS 5 *Non-current Assets Held for Sale and Discontinued Operations* applies. The measurement of investments accounted for in accordance with IFRS 9 is not changed in such circumstances (IFRS 10.10).

4.4 Financial instruments

Equity investments not classified as either subsidiaries, joint ventures, or associates are accounted for in accordance with IFRS 9. Under **IFRS 9**, equity investments are remeasured to fair value, with recognition of the corresponding gains or losses again depending on the firm’s investment strategy and intentions. Specifically, an investor can elect OCI treatment for an equity investment that is neither held for trading nor contingent consideration recognized by an acquirer in a business combination to which IFRS 3 applies (refer to section 4).

5. Preparing Consolidated Financial Statements

Introduction

The separate legal entities of parent and subsidiary likely have manifold economic relationships (including equity investments, lending agreements, and income-generating transactions) with each other. Therefore, an important step in completing the accounting for business combinations is the elimination of the resulting intragroup balances and transactions – referred to as 'consolidation'. Consolidation procedures make sure that the consolidated financial statements represent the combined firms as one 'economic entity', which captures only those items and balances that stem from transactions with parties outside of the consolidated group. But before consolidation can ensue, the separate financial statements of parent and subsidiary need to be made uniform to some degree.

After studying this section, you should:

- Know the steps required to standardize the parent's and subsidiary's financial statements; and
- Understand, and be able to apply, the requirements for consolidating any intragroup balances and transactions.

Summary of Section Content

- *Pellens et al. (2021), Ch. 21.3.1, 21.3.2, 21.3.3.1, 21.3.4*
- *Picker et al. (2016), 21.1-21.4, 22.1-22.3, 22.5*

5.1 Preliminary steps and foreign currency translation

Before consolidation itself can ensue, the following steps must be undertaken:

- **Uniform accounting policies** (IFRS 10.B87): "If a member of the group uses accounting policies other than those adopted in the consolidated financial statements for like transactions and events in similar circumstances, appropriate adjustments are made … to **ensure conformity** with the group's accounting policies."
- **Reporting date** (IFRS 10.B92-B93): "The financial statements of the parent and its subsidiaries used in the preparation of the consolidated financial statements shall have the **same reporting date**. When the end of the reporting period of the parent is different from that of a subsidiary, the subsidiary prepares, for consolidation purposes, additional financial information as of the same date as the financial statements of the parent to enable the parent to consolidate the financial information of the subsidiary, unless it is impracticable to do so." "If it is impracticable to do so, the parent shall consolidate the financial information of the subsidiary using the most recent financial statements of the subsidiary adjusted for the effects of significant transactions or events that occur between the date of those financial statements and the date of the consolidated financial statements. In any case, the difference between the date of the subsidiary's financial statements and that of the consolidated financial statements shall be no more than three months, and the length of the reporting periods and any difference between the dates of the financial statements shall be the same from period to period."
- **Foreign currency translation**: According to IAS 21 *The Effects of Changes in Foreign Exchange Rates*, the financial statements of consolidated foreign operations must first be measured in (or translated into) their respective **functional currencies** (e.g., the US Dollar for a US subsidiary) and then translated into the **presentation currency** of the consolidated financial statements (the Euro) before consolidation can ensue. A foreign

operation's functional currency is "the currency of the primary economic environment in which the entity operates" (IAS 21.8). "The primary economic environment in which an entity operates is normally the one in which it primarily generates and expends cash" (IAS 21.9).

- If the activities of the foreign operation are carried out as an **extension of the parent**, its functional currency is typically considered to be that of the parent. In this case, all of the transactions carried out in the foreign operation's local (presentation) currency are considered foreign currency transactions. They are translated into the parent's currency *before* the standardization of accounting policies and the revaluation of assets and liabilities (including the calculation of any goodwill or bargain purchase) takes place. The translation method used is referred to as the **temporal method** (*Zeitbezugsmethode*, re-measurement method). It is based on the idea that all of the foreign operation's transactions should be measured as if they had been carried out in the parent's functional currency. Under this method, foreign currency translation is conceived of as an act of original measurement, not merely translation. Consequently, any foreign exchange gains or losses affect profit or loss.
- In contrast, if the activities of the foreign operation are carried out with a **significant degree of autonomy**, and these activities are primarily located in a currency area different from that of the parent's, its functional currency will typically deviate from that of the parent. In that case, foreign operation's transaction have originally been recorded in the 'correct' functional currency, and the translation into the presentation currency is an act of mechanical translation. It takes place *after* the standardization of accounting policies and the revaluation of assets and liabilities (including the calculation of any goodwill or bargain purchase) has already been carried out. The translation method used is referred to as the **modified closing rate method** (*modifizierte Stichtagskursmethode*). Any foreign exchange gains or losses are booked into equity via other comprehensive income.

  - *Pellens et al. (2021), Ch. 20*
  - *Picker et al. (2016), Ch. 24*

- **Combining like items**: As the final step before consolidation, the parent's financial statements are combined with the revalued, standardized and translated financial statements of the subsidiaries in a line-by-line addition of similar items (IFRS 10.B86 (a)).

5.2 Consolidation of equity

Consolidation of equity relates to offsetting (eliminating) the carrying amount of the parent's investment in a subsidiary and the parent's portion of equity of the subsidiary; in this step, goodwill or a gain on bargain purchase arise (IFRS 10.B86 (b)) arise, and any non-controlling interests are recognized. In this course, we will go through multiple case examples in order to understand consolidation of equity under different scenarios relating to purchase price, revaluation increments, percentage stakes acquired, and deferred taxes.

5.3 Other consolidation steps

5.3.1 Consolidation of liabilities

Consolidation of liabilities is necessary to eliminate any intragroup lending agreements or provisions.

5.3.2 Other consolidation procedures

According to IFRS 10.B86 (c), other consolidation procedures include the elimination in full of any other intragroup assets and liabilities, equity, income, expenses and cash flows relating to transactions between entities of the group. Profits or losses resulting from intragroup transactions that are recognized in assets, such as inventory and fixed assets, are eliminated in full.

5.4 Subsequent Accounting

M&A transactions affect the acquirer's financial statements not only at the acquisition date. Rather, they have complex long-term consequences that are important for interested parties to understand and anticipate. Prominently, any goodwill arising from an acquisition will be held on the consolidated balance sheet and reviewed for impairment on a regular basis. Goodwill impairment tests contain discretionary elements that we need to be aware of. Another long-term repercussion of acquisition accounting stems from fair value increments and acquired intangible assets that were not previously recognized on the target's book. Both can lead to additional depreciation and amortization amounts in post-deal periods. Understanding these effects is critical for evaluating the financial statement consequences of M&A transactions, including effects on earnings per share (EPS).

Learning Objectives

After studying this section, you should:

- Understand subsequent consolidation techniques;
- Be able to apply subsequent reporting requirements for goodwill as well as for fair value increments, newly recognized identifiable intangible assets, and non-controlling interests;
- Appreciate the discretionary elements inherent in these requirements.

Summary of Section Content

- *Pellens et al. (2021), Ch. 21.3.3.4*
- *Picker et al. (2016), Ch. 15.1-15.6, 21.5, 23.3*

5.4.1 Subsequent consolidation

As discussed in section 2, consolidated financial statements are compiled from the separate financial statements of the individual legal entities comprising the consolidated group, with intragroup transaction and balances stripped out. As the group companies originally report in their separate financial statements, these aggregation and consolidation procedures have to be repeated at every reporting date. This process is called subsequent consolidation; it includes subsequent accounting for any consolidation goodwill as well as fair value increments, newly acquired identifiable intangible assets, and non-controlling interests, as discussed in the following subsections.

5.4.2 Subsequent accounting for goodwill

At the acquisition date, goodwill is recognized as an intangible asset. Subsequent reporting occurs under IAS 36 *Impairment of Assets*. As an unidentifiable intangible asset that has no definite useful life, goodwill is tested for **impairment** annually as well as whenever there is an indication of impairment (IAS 36.9-10). Impairment exists when an asset's carrying amount exceeds its recoverable amount (IAS 36.8).

Goodwill is an asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognized (IAS 36.81). As such, it does not generate cash flows independently of other assets or groups of assets, and can therefore not be tested for impairment individually. Consequently, goodwill is allocated to the group's **cash-generating units (CGU)** that are expected to benefit from the synergies generated by the business combination, and subsequently tested for impairment at that level. A CGU is defined as "the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets" (IAS 36.6).

The impairment test requires comparing a CGU's carrying amount to its recoverable amount, which is the higher of its value in use and its fair value less costs of disposal (IAS 36.6). When the carrying amount falls short of the recoverable amount, an impairment loss is recognized in profit or loss. It is allocated to any CGU goodwill first; any remaining amount is then allocated to the CGU's other assets (within the scope of IAS 36) *pro rata* on the basis of the carrying amount of each asset in the CGU. Impairment losses allocated to goodwill are not subsequently reversed.

Firms have substantial discretion in determining any goodwill impairment; this is because the recoverable amount of a CGU is typically determined on the basis of discounted future expected cash flows. Some observers comment that firms have incentives to avoid recording goodwill impairment, and will exercise this discretion strategically.

5.4.3 Subsequent accounting for fair value increments and identifiable intangible assets

Whereas any future profit effects from subsequent goodwill accounting are difficult to anticipate, those arising from the subsequent accounting for fair value increments and identifiable intangible assets are much more predictable. In fact, those revalued items and newly recognized intangibles with finite useful lives will generate additional **depreciation** and **amortization** amounts or other forms of expense. Depending on the case, these will affect different subtotals of the income statement; furthermore, they may or may not be alleviated by compensating deferred tax effects.

- Current assets: Revalued inventories will typically be incorporated into the cost of sales within the subsequent 12 months, affecting the income statement above the EBITDA line.
- Non-current assets: Revalued assets subject to depreciation and amortization produce additional expense that affects EBIT and lower subtotals, but not EBITDA. Other assets, including goodwill can generate unpredictable impairment losses.

5.4.4 Subsequent accounting for non-controlling interests

The above effects are also mirrored proportionately in the non-controlling-interests positions on the balance sheet and income statement, as non-controlling interests receive a proportionate share of the above expense and income items. Only under the full goodwill method, however, do the non-controlling-interests positions reflect any goodwill impairment.

5.5 Step Acquisitions and Disposals

M&A transactions are rarely achieved in one go. In many cases, parent firms build positions slowly up to a point where control is obtained over the subsidiary. This strategy is referred to as a step acquisition, or a business combination achieved in stages. In addition, parent firms sometimes purchase any remaining non-controlling interests to avail themselves of 100% of the subsidiaries shares. This leads to a change in the proportion held by non-controlling interests. An example is Volkswagen AG's recent buyout of the remaining shareholders of MAN, the German truck maker and engineering company. Furthermore, groups frequently sell off divisions, often in an attempt to focus on the core business. All these corporate events are reflected in the consolidated financial statements, as discussed in this section.

Learning Objectives

After studying this section, you should:

- Understand, and be able to apply, the requirements for step acquisitions, as well as purchases of additional shares after the acquisition date, i.e., after control has been obtained; and
- Appreciate the accounting implications of disposals leading to loss of control of a formerly consolidated subsidiary.

Summary of Section Content

Pellens et al. (2021), Ch. 21.3.3.5

5.5.1 Step acquisitions

In a step acquisition, the parent typically obtains control through more than one purchase of the subsidiary's shares.

The following cases can arise:

- Parent previously held an equity investment below 20%: The previous investment is revalued to fair value through consolidated profit or loss on the acquisition date; it becomes part of the basis for determining goodwill (IFRS 3.42; refer to section 2). Effectively, the accounting assumes that the parent *sold* the previously held investment and then proceeded to buying the controlling investment in one amount.
- Parent's previous investment accounted for under the equity method (refer to section 8) as an investment in an associate or joint venture: The accounting effects are analogous to the previous case (IAS 28.22 (a)).

Importantly, in all of these cases, the acquisition date remains the key point in time that triggers the important financial reporting consequences under acquisition method accounting.

5.5.2 Changes in the proportion held by non-controlling interests

When a parent increases or decreases its share in an already consolidated subsidiary, and there is no change in control, the subsidiary's assets and liabilities as well as any goodwill are unaffected (recall that these accounting effects arise at the acquisition date). Rather, these transactions only affect the distribution of the subsidiary's equity between the parent-company and non-controlling shareholders, which is reflected in the non-controlling interests position on the balance sheet (IFRS 10.B96). Consequently, there is no profit or loss effect. In the extreme case of the parent increasing its stake to 100%, the non-controlling interests position is completely derecognized.

Consider this for the case of the parent acquiring additional shares in the subsidiary: If the transaction takes place at a fair value that differs from the carrying amount of the equity stake changing hands, that difference is recognized in the parent company's capital reserves. If the purchase price paid to the non-controlling interests exceeds (falls short of) the carrying amount, this reduces (increases) the parent company's capital reserves, which is equivalent to the accounting depiction of a share repurchase, i.e., capital being paid back to shareholders (share issuance, i.e., additional capital being raised from shareholders).

5.5.3 Disposals

A disposal takes place when the parent loses control of a consolidated subsidiary. This is typically the case when shares in the subsidiary are sold to an extent such that the remaining stake falls to 50% or less. Depending on how much, if any, of the equity stake is retained, the following cases are possible:

- Parent sells all of its investment in the subsidiary;
- Parent's retained stake subsequently qualifies as an investment in a joint venture;
- Parent's retained stake subsequently qualifies as an investment in an associate; or
- Parent's retained stake subsequently qualifies as a financial asset subject to IFRS 9.

In all of these cases, the assets and liabilities of the subsidiary, any associated goodwill, as well as the corresponding non-controlling interests position, are derecognized. In turn, the parent recognizes the fair value of any consideration received, as well as any investment retained in the former subsidiary at its fair value at the date when control is lost. Any resulting difference is recognized as a disposal gain or loss in profit or loss attributable to the parent (IFRS 10.B98).

6. Analyzing the Financial Statements of Combined Entities

M&A transactions can affect the combined entity's financial statements and its financial ratios in manifold ways. These effects are important for several stakeholders. For example, managers of the acquiring firm will wonder how the acquisition of a potential target will impact the group's EPS, and hence their bonus payments. Analysts of the business group will take a close look on the long-term effects of the acquisition, and try to disentangle these from "one-off" shocks to the financial statements. Banks having extended a credit line to a firm will carefully examine the amount of leverage put on the new group, and what its covenants will look like. Finally, shareholders trying to assess the fundamental value of the parent company and, related, its dividend capacity, often use financial statements in order to predict future cash flows. They need to understand how the transaction affects the key financial ratios which they use to form such forecast.

In this section, we will explore the mechanisms through which M&A transactions can affect the consolidated financial statements, focusing on their impact on key financial ratios. Then, we will introduce and apply a structured approach in which we use the consolidated financial statements to forecast valuation model inputs. In short, this section concludes the course by bringing together the concepts we have covered so far: How the economics (section 1) and accounting treatment (sections 5 – 11) of M&A transactions affect the financial ratios (section 9) used in corporate valuation.

Learning Objectives

After studying this section, you should:

- Appreciate the financial ratio effects of M&A transactions; and
- Understand, and be able to apply, a structured approach to forecasting consolidated financial statements.

Summary of Section Content

- *Lundholm and Sloan (2019), Ch. 7*
- *Hooke (2015), Ch. 11-12.*

6.1 Financial statement effects of M&A transactions

To some extent, M&A transactions will "mechanically" affect the financial statements. Since it is the underlying idea of consolidated financial statements to reflect the underlying economics of a new, combined entity, they will inevitably differ from the financial statements of the parent company before the transaction. But what items specifically are affected? The points below summarize some key items, and take the acquirer's financial statements before the transaction as a reference point.

- The balance sheet will reflect how the transaction has been financed. If the parent company has issued new stock and/or debt in order to finance the transaction, this will increase total assets of the combined firm. So does the share of the acquiree's equity that is attributable to non-controlling interests. Note that the combined entity's equity is *not* affected by the acquiree's entity; i.e., except for non-controlling interests and newly issued shares, it remains at the level of the acquirer's equity before the transaction. Accordingly, the asset-side of the consolidated balance sheet reflects increases by the extent that the carrying amount of the acquiree's assets, plus fair value adjustments and goodwill, are financed by external funds. That means, in an extreme case where i) the transaction is purely internally financed, say by the acquirer's cash reserves, and ii) the acquiree itself is fully equity financed, the total assets of the combined financial statements will be the same as the acquirer's total assets before the transaction.

- The consolidated income statement is extended by the acquiree's respective positions. In addition, synergies generated from the transaction can be reflected in several positions (e.g., increased sales or decreased costs of goods sold). Moreover, depreciation and amortization charges will additionally increase because of the uncovering of hidden reserves in the acquiree's financial statements. Lastly, the financing of the transaction will also be reflected in the consolidated net interest income.

6.2 Financial ratio effects of M&A transactions

How the financial statements effects outlined above are reflected in the financial ratios is not straight-forward: frequently, both nominator and denominator are affected. For instance, take RNOA (return on net operation assets). How will the ratio of a business group – i.e., the newly combined entity of acquirer and acquiree – differ from a simple weighted average of the acquirer's and the acquiree's ROA?

- In the nominator, we have to calculate the NOI (net operating income) of the business group. This comprises, first, the sum of both firm's NOI (net operating income) as generated on a stand-alone basis. Second, the nominator increases by the amount of NOI that comes from synergies created in the business transaction. At the same time, the NOI of the group is lowered by the additional depreciation charges on hidden reserves that have been uncovered in the transaction.
- The denominator needs to reflect the NOA (net operating assets) of the group. This, again, includes the NOA of the individual firms on a stand-alone basis. In addition, the NOA of the business group increases by the uncovering of hidden reserves and the amount of goodwill recognized in the course of the transaction.

These effects of the transaction on RNOA are closely tied to its valuation implications. Recall that valuation implications can arise from three aspects: the stand-alone value of the acquiree, the synergies arising from the transaction (reflected in the additionally generated NOI), and how the value created by those synergies is split between the acquirer's shareholder and the acquiree's incumbent shareholders. The latter is reflected in how much the acquirer pays for its ownership stake above the stand-alone value of the acquiree – i.e., goodwill. In addition to these economic gains and costs of the transaction, the consolidation process gives rise to accounting effects, i.e., the uncovering of hidden reserves at the acquiree.

6.3 Discretion and financial ratio effects of M&A transactions

When analyzing the consolidated financial statements, it is important to take into account that several aspects of the M&A process require judgment calls from the manager or the financial analyst.

- The structure and underlying economics of the transaction determine its depiction in the consolidated financial statements. For instance, the intensity of the business combination determines the applicable consolidation method (see section 5). After the abolishment of proportionate consolidation for most types of joint ventures, managers may face incentives to structure transactions in a way so that the requirements for full consolidation are fulfilled. This will, e.g., lead to higher sales figures in the consolidated financial statements. Similarly, managers might choose the form of financing with a view to the effects of the transaction on EPS (earnings per share).
- The accounting process further provides discretion to the management. As outlined above, the purchase price allocation triggered in a business combination frequently

gives rise to fair value increments and previously unrecognized intangible assets (such as brands). When making the purchase price allocation, management will therefore take the future repercussions (in form of depreciation, amortization or impairment) for consolidated income into account – and so should analysts and other users of financial statements. In particular, goodwill amounts arising from some transactions are so large that they pose serious threats to consolidated equity if written off. These potential effects are uncertain due to the discretionary nature of the goodwill impairment test (refer to section 4).

- Lastly, analysts of financial statements face the challenge to classify items of the balance sheet and income statement as operating or financial when performing an advanced DuPont analysis. M&A transactions give rise to two items which require the analyst's judgment in making this classification: First, non-controlling interests might be viewed as outside capital providers (parent-company theory) or equity holders of the group (entity theory; see section 5 for details). Secondly, IFRS allows firms to report equity-method investments as either financial or operating items, with the parent's share of equity-method investees' profit or loss presented either within EBIT or below EBIT. This presentation choice also affects key financial ratios.

6.4 Structured Forecasting

Having understood the financial statement implications of M&A transactions, we are now in a position to forecast the expected future cash flows and other key performance indicators as inputs to the valuation models. Good forecasts are the most important ingredient of good valuations, and forecasts are based on our assumptions about how the combined entity's business will unfold under different scenarios, with multiple factors interacting in complex ways.

Developing good forecasts hinges on a systematic, integrated, structured approach. We use the financial statements as a structure to organize our assumptions, deriving forecasted balance sheets, income statements, and cash flow statements. We start with the sales forecast, and then use financial ratios from our analysis of the past financial statements as a foundation for forecasting future financial statements (also called 'pro forma' financial statements) under appropriate assumptions.

This process will involve reformulating and simplifying the financial statements, as well as making adjustments to obtain data that is an appropriate basis for forecasting. A full set of forecasted 'pro forma' financial statements provides key inputs to any valuation model.

7. Research on the Economics and Reporting of M&A

The economics and reporting of mergers and acquisitions, as well as the transaction itself, form a diverse area of research with various arising research questions. The process of identifying research questions of general interest and answering them according to high scientific standards hinges on a structured and systematic approach. Scholars have to carefully formulate their research questions and hypotheses, in order to describe their overall idea and precisely motivate their research design. Based on a detailed review of the related literature, they have to position their project in the existing literature and describe the importance as well as implications for different stakeholders. Finally, they have to come up with a suitable research design, that also includes accessible data sources, to answer their research question and test their hypothesis.

In this section, we will explain the “What-Why-How” approach (Kinney, 2019) in the context of research on mergers and acquisitions and show multiple examples on how to develop your own research ideas in this area. The “What-Why-How” approach is increasingly used in the academic domain to briefly describe the most important elements of an underlying research question. It initially started out as an guideline to help PhD students to identify answerable research questions, but quickly also transitioned into the general academic practice.

Learning Objectives

After studying this section, you should:

- Understand the difference between Empirical vs. Theoretical and Positive vs. Normative research
- Know how to make use of the “What-Why-How” to formulate answerable research questions
- Understand how to develop a methodological approach that helps answering an interesting research question
- Be able to develop and describe an own research idea in the area of M&A

7.1 Summary of Section Content

7.1.1 M&A Research Basics

The methodological underpinnings of most research questions can be ranged in an Empirical-Theoretical, Positive-Normative Matrix. Studies that use an empirical design are based on observed and measured phenomena and rely on data in order to answer pre-formulated research questions and hypotheses. Theoretical research is based on logical exploration of belief systems and assumptions. It uses philosophical ideas and abstract theoretical (formal) structures in order to develop conceptual models, explanations, and structures. Positivistic research questions relate to an underlying deductive approach in which the researcher is completely objective. Knowledge is gained through observations and aimed at explaining and predicting the observed phenomenon. Normative research is about how study findings should be applied to the study population, exemplary by defining an optimal legislation aimed at a certain publicly desirable goal. It is about measuring, assessing and comparing goodness, value, practicality, and functionality of different possible actions to derive recommendations.

Researchers can follow the approach of Kinney (2019) and use three paragraphs of “What?”, “Why?”, and “How?” to describe their projects. The “What?” section includes a description and explanation of the research question while the “Why?” section describes the importance, fit, and relevance to the academic debate as well as for practice. The “How?” section finally explains which type of analysis, data and method is used in order to answer the underlying research question.

7.1.2 Example: Standard-setting Issues in Goodwill Accounting

Mergers and acquisitions often result in large goodwill positions in the acquirers balance sheet. The calculation, recognition and subsequent accounting of this goodwill has been under discussion ever since and is the content of numerous papers in the accounting literature. This chapter covers multiple examples for research on goodwill.

Goodwill has some unique characteristics. Even though it is recognized as an asset on the balance sheet, it receives special treatment regarding its subsequent accounting treatment. Further, the regulation of IFRS 3 leads to a different treatment of positive and negative goodwills. While a positive position is categorized as an asset, a negative goodwill is interpreted as a bargain purchase gain and booked into the P&L statement. The chapter covers these and other issues with goodwill and presents examples on how to conduct research on the standard-setting issues in goodwill accounting.

8. Recent developments in Accounting for M&A Transactions

This last chapter touches upon the most recent developments in Accounting for M&A Transactions from a standard setting perspective. We first introduce the IFRS' due process to illustrate how the standard setting process works. More specifically, we lay out the details of the different steps of e.g. work plan, research phase, agenda decision, exposure draft, and post-implementation review. Afterwards, we are focusing on various recent projects of the IFRS standard setting agenda related to M&A accounting. We briefly introduce you to the project Business Combinations—Disclosures, Goodwill and Impairment, the Post-implementation Review of IFRS 10, IFRS 11 and IFRS 12, the Discussion Paper of Business Combinations under Common Control, as well as the status of Primary Financial Statements.

Learning Objectives

After this section, you should:

- Possess a brief understanding how the IFRS's due process words.
- Know the recent developments in IFRS standard setting related to M&A accounting
    - Business Combinations—Disclosures, Goodwill and Impairment
    - Post-implementation Review of IFRS 10, IFRS 11 and IFRS 12
    - Discussion Paper: Business Combinations under Common Control
    - Exposure Draft and comment letters: General Presentation and Disclosures (Primary Financial Statements)

8.1 Summary of Section Content

8.1.1 IFRS' due process

IFRS are developed through an international consultation process – the so-called due process – which involves interested individuals and organizations from around the world. This process serves as a mechanism to establish and maintain acceptance and legitimacy of the private standard setter's standards. The due process comprises several steps during which interested external parties can voice their opinion in form of comment letters.

- The IASB chooses from among possible new agenda items for its **work plan** by considering the needs of investors. (The IASB conducts agenda consultations to seek input on the strategic direction and balance of its work plan. On 11 August 2015, the IASB requested public input on its future work plan and priorities when it published its Request For Views: 2015 Agenda Consultation; it is seeking comments on this Request for Views by 31 December 2015.) Specifically, it considers relevance and reliability issues with respect to information on a given reporting issue, the availability of existing guidance, the standards in place in the U.S. (convergence), and the availability of resources. Possible agenda items may be suggested by the IASB's staff or outside constituents.
- Once a potential agenda project is identified, a **research phase** constitutes the first stage of the due process. Researchers, dedicated staff of the Board and the Council collaborate on gathering information on the reporting issues in question, as well as developing possible alternative accounting treatments. Subsequently, a discussion paper may be (and in most cases is) published by the IASB with an invitation to the public to comment on the alternative solutions proposed therein.

- The **agenda decision** or project initiation constitutes the next stage. When an unregulated reporting issue and/or alternative solutions are identified in the research phase and the subsequent commenting period, this issue is set onto the IASB's active work plan and an advisory group may be appointed.
- The IASB, several consultative groups and the IFRS Advisory Council analyze and debate the comments received with a commitment to settle on one preferred solution. The subsequent public outreach invites comments on the **exposure draft** published by the IASB, which outlines the internally agreed-upon and preferred regulation of the reporting issue.
- After evaluating the received comment letters on the exposure draft, the IASB modifies the draft and re-exposes it, or publishes it as a **final IFRS**. In terms of sequence and structure, IFRSs typically discuss objective, scope, definitions of key terms, recognition, measurement, (derecognition), disclosure, transition, and effective date. Besides the concrete regulation of the reporting issue in question, the final IFRS also contains the Basis for Conclusion with justification of the final regulation, as well as any amendments to other existing standards. Along with the standard, the IASB also publishes a feedback statement in which it outlines how constituents' feedback has shaped the final standard.

As a **feedback** loop, field studies are conducted in special cases to investigate the actual effects of implementation of the proposed IFRS on selected industries or companies. Once the standard has been applied for a certain period of time, post-implementation reviews (PiRs) are initiated as an institutionalized feedback loop which attempts to examine the wider implementation effects by consulting internal as well as external reviews. PiRs can potentially leads to adjustments of a published standard.

8.1.2 Business Combinations—Disclosures, Goodwill and Impairment

One of the currently most important projects of the IASB is called "Business Combinations—Disclosures, Goodwill and Impairment". The main objective of this standard setting project is to provide users of financial statements with more useful information about the mergers and acquisitions firms make, at a reasonable cost. After publishing a Discussion Paper in March 2020, the IASB collected feedback from their constituents on how firms could disclose better information about business combinations and whether to retain the impairment-only model or reintroduce amortization of goodwill.

After receiving feedback from stakeholders, the IASB prioritized two topics: improving disclosures about business combinations and exploring whether to reintroduce goodwill amortization. With regard to the latter, the IASB responded to critics that impairment losses on goodwill are sometimes recognized too late, long after the events that caused those losses. In response they were considering the reintroduction of periodic amortization of goodwill but ended up with the decision to retain the currently applicable impairment only approach because there was not enough compelling evidence for change. In December 2022, the IASB made decisions on these topics and moved the project to its standard-setting work plan.

8.1.3 Post-implementation Review of IFRS 10, IFRS 11 and IFRS 12

By publishing the Report and Feedback Statement in June 2022, the IASB completed their Post-implementation Review of IFRS 10 *Consolidated Financial Statements*, IFRS 11 *Joint Arrangements*, and IFRS 12 *Disclosure of Interests in Other Entities*. Within this PiR, they

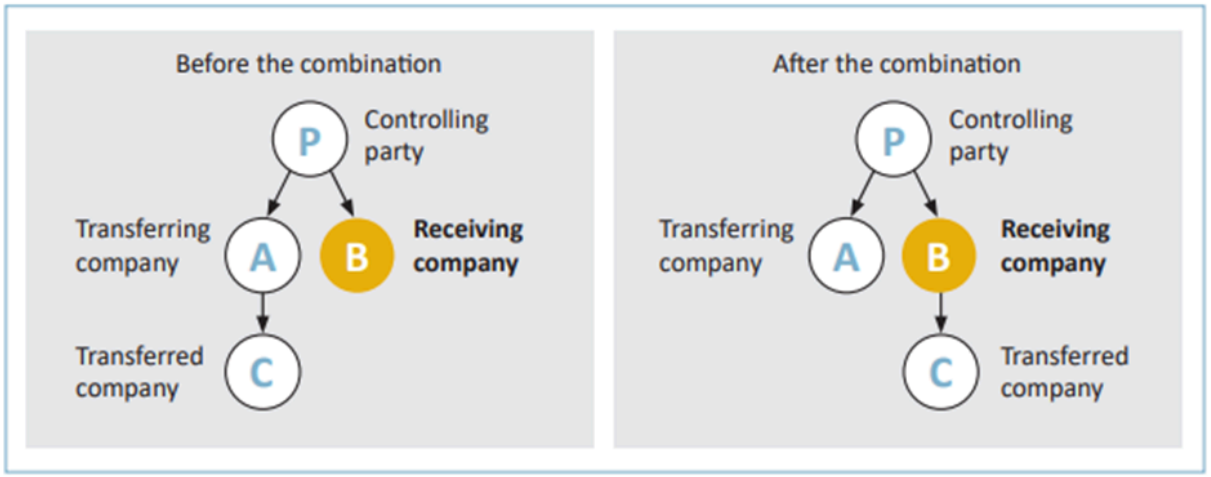
concluded that the mentioned accounting standards are generally working as intended and have improved financial reporting. However, the review identified some areas where improvements could be made in the next agenda consultation but that do not require immediate action of the IASB.

For example, the review identified matters on subsidiaries that are investment entities, transactions that change the relationship between an investor and an investee, transactions that involve 'corporate wrappers'; collaborative arrangements outside the scope of IFRS 11; and additional disclosures about interests in other entities.

8.1.4 Discussion Paper: Business Combinations under Common Control

In November 2020, the IASB published the Discussion Paper "Business Combinations under Common Control" and asked for feedback until September 2021. This discussion paper is focusing on business combinations where a receiving company (B) is acquiring a transferred company (C) from a transferring company (A). Since the transferring and the receiving company are controlled by the same company (P), this situation is out of the scope of IFRS 3 *Business Combinations*, and therefore currently requires the firms to develop their own accounting policies for such transactions. With this project, the IASB is determined to develop reporting requirements for a receiving company, thus reducing diversity in practice and provide users of financial statements with better information about these combinations.

Diagram IN.1—A business combination under common control



The IASB is specifically seeking feedback on several proposed changes related to the accounting for business combinations under common control. These include the project's objective, scope and focus, selection of the measurement method, how to apply the acquisition method, how to apply a book-value method, and disclosure requirements. With respect to the measurement method, the IASB has the preliminary view that the receiving company should apply the acquisition method in line with IFRS 3 if its shares are publicly traded. If companies use the acquisition method for the accounting of a business combination under common control, they should recognize any excess fair value of the identifiable acquired assets and liabilities over the consideration paid as a contribution to equity, not as a bargain purchase gain in the statement of profit or loss. In terms of a single book-value method for IFRS, the IASB is asking the stakeholders for their feedback on various characteristics for this newly developed method. Lastly, the IASB's preliminary view on the reporting requirements is that the receiving company should in principle comply with IFRS 3.

The IASB received plenty of feedback on these preliminary views/questions. Currently the IASB is deciding on the project direction. For further details or intermediate updates, please visit the project website.

8.1.5 Primary Financial Statements

Within the scope of the "Better Communication in Financial Reporting", the IASB intends to propose new requirements for the presentation and disclosure in financial statements. Within their exposure draft, which invited stakeholders to submit comments and feedback until September 2022, the IASB proposed new categories as well as subtotals in the profit and loss statement (see figure below), new disaggregation principles to provide more relevant information, and the disclosure of some management-defined (not IFRS codified) performance measures, to limit changes in the cash flow statements to increase consistency.

Figure 1—Summary of a statement of profit or loss

Revenue	X	Operating
Operating expenses	(X)	
Operating profit or loss	**X**	
Share of profit or loss of integral associates and joint ventures	X	Integral associates and joint ventures
Operating profit or loss and income and expenses from integral associates and joint ventures	**X**	
Share of profit or loss of non-integral associates and joint ventures	X	Investing
Income from investments	X	
Profit or loss before financing and income tax	**X**	
Interest revenue from cash and cash equivalents	X	Financing
Expenses from financing activities	(X)	
Unwinding of discount on pension liabilities and provisions	(X)	
Profit or loss before tax	**X**	

In general, the proposed changes of the project "Primary Financial Statements" was well received by the stakeholders and especially be the users of financial statements. In general, the proposals for categories and subtotals in the statement of profit or loss, as well as the proposals for management performance measures, have received agreement from all respondents. However, Respondents had mixed views and raised concerns about various proposals for improved requirements on disaggregation, with preparers finding some proposals difficult to apply.

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Recap of Relevant Basics

Financial Reporting Basics

Understanding the financial reporting implications of M&A transactions requires a certain background, some of which is summarized in this section. Besides technical knowledge of double-entry book-keeping and the legal requirements of financial reporting in Germany (which we understand you have), we need basic insights into:

- The objectives of financial reporting as well as those of the managers preparing the accounts;
- The different types of financial statements prepared by legal entities versus groups of firms; and
- The scope of annual reports and consolidated financial statements under IFRS.

Some emphasis is then placed on the cash flow statement, which is an important basis for valuation.

Learning Objectives

After studying this section, you should:

- Be able to explain and critically evaluate the objectives of general purpose financial statements;
- Have a sound understanding of the incentives shaping management's reporting choices;
- Understand the objectives, qualitative characteristics, and elements of financial reporting under IFRS; and
- Appreciate the recognition criteria and measurement concepts used under IFRS;
- Know the scope of a typical annual report, including the complete set of IFRS financial statements; and
- Be able to prepare a cash flow statement.

Objectives and Users of Financial Reporting

 Pellens et al. (2021), Ch. 1, pp. 2-8

Financial reporting is a goal-oriented activity. Its basic role is to alleviate problems associated with information asymmetries between the *preparers* (i.e., the firms and its managers) and external *users* of financial reporting. Being *insiders*, preparers typically know more about the firm than do users, who are (or are assumed to be) *outsiders*. Information asymmetries arise because preparers might have little incentive to share their private insider information with these outside stakeholders.

There are two main information asymmetry problems that financial reporting tries to address:

- **Adverse selection** refers to the well-known 'lemons problem' – *ex ante* information asymmetries between well-informed agents (e.g., sellers) and less well-informed principals (e.g., buyers) in markets. Applied to the context of interest in this course, *ex ante* information asymmetries exist between well-informed owners/managers of firms and external stakeholders in these firms in financial and factor markets. If external stakeholders cannot observe the firm's type, or state ('good' or 'bad'), they will assume an average firm when deciding upon the conditions under which to engage in relations with the firm. 'Good' firms will find these conditions unattractive, and will leave the market, leaving only 'bad' firms. Anticipating this, external stakeholders will further lower their offer conditions. As the familiar 'lemons' example shows (Akerlof 1970), the market will break down. In this context, financial reporting (e.g., in the form of externally

audited financial statements) acts as a *bonding* mechanism to reduce these information asymmetries, helping external stakeholders assess firms' types and states.

- **Moral hazard** refers to *ex post* information asymmetries: External stakeholders cannot fully observe how well owners/managers discharge their responsibilities towards them after a contractual relationship has commenced. This creates needs for periodic screening and monitoring activities – again in the possible form of annual or quarterly audited financial statements.

General-purpose financial reporting is directed towards an *ex ante* unlimited number of potential users. These users are assumed to rely on publicly available information for their decision-making needs. Because of these potential uses of financial reporting, we consider financial reporting to have *economic consequences*. The following stylized external stakeholder groups are considered potential users of financial reporting information:

- **Shareholders** (and their intermediaries): Shareholders provide cash to the firm by buying its shares in primary or secondary equity markets. They expect returns in the form of dividends and increases in firm value (e.g., stock price). These returns depend on the firm's prospects in terms of the amount, timing and uncertainty of its future cash flows. Financial reporting provides information intended to help shareholders assess these prospects, reducing shareholders' primary concern: the risk of paying too much. Shareholders may also want to reward managers based on managers' performance, in order to align managers' incentives with their own. Financial reporting helps measure that performance. Some shareholders are less sophisticated than others. In order to help them make these assessments, shareholders may use the services of information intermediaries such as financial analysts, investment advisors, and the financial press.
- **Lenders** (and their intermediaries): Banks and other lenders provide cash to the firm by granting loans, extending trade credit (i.e., allowing the firm to delay payment on purchases), or buying its bonds. They expect returns in the form of risk-adjusted interest payments and repayments of the principal over the duration of the lending agreement. Financial reporting provides information (e.g., liquidity information) that helps lenders and their information intermediaries (e.g., rating agencies) assess the firm's default risk (i.e., the likelihood that the firm will fail to meet its payment obligations under the lending agreement). Lending agreements frequently specify minimum or maximum values of accounting-based financial ratios that firms cannot violate, lest they trigger default. The likelihood of default and the costs in case of default (e.g., bankruptcy costs, renegotiation costs, stricter borrowing conditions) can be aggregated to assess the expected value of default costs.
- **Customers and suppliers** are interested in the firm's prospects, especially when they are (considering to become) parties to long-term contracts with the firm. Such long-term contracts may require contracting parties to make investments specific to their relation with each other. Assessing the net present value of such investments requires information about the contracting partners' financial stability and profitability. Again, financial reporting provides information that is useful for this purpose.
- **Employees/unions** care about the firm's financial stability in order to assess job security, as well as the firm's future profitability and liquidity, which determine its potential for increasing future wage and salary payments.
- **Tax authorities and other regulators** need to assess the firm's ability to make current and future tax payments; they are also interested in the firm's (future) profitability in order to assess the need for regulating the firm's (or industry's) activities.
- **Peer firms and the public** are interested in the firm's performance as a competitor and 'corporate citizen', respectively.

Given these user groups and their decision-making needs, we can now be more specific about the purposes of financial reporting. Specifically, these purposes can be classified as follows:

- **Stewardship/contracting:** Reporting on the firm's *past* in order to provide accountability by allowing users to assess management's stewardship of the resources entrusted to it, and to quantify claims under accounting-based contracts such as bonus plans or lending agreements.
- **Valuation:** Reporting information that is useful in assessing the firm's future prospects in terms of the amount, timing and uncertainty of its future cash flows.

Importantly, these two purposes are not identical; they may even be in *conflict* with each other.

Managers' Financial Reporting Incentives

 Pellens et al. (2021), Ch. 1, pp. 2-8

Financial reports are prepared by the firm's managers. These managers have incentives of their own, and they know that the information they report is observed by the users of financial statements, and therefore has **economic consequences**. Anticipating these economic consequences, managers rationally use their reporting discretion to foster their private objectives, an activity referred to as '**earnings management**'. For example, if managers have an equity stake in the firm and assume that capital markets use the financial statements to value the firm, they have incentive to portray the company in a favorable light. Likewise, if managers' compensation contracts provide for bonus payments based on accounting numbers such as earnings, managers will (under certain circumstances) have incentives to manage those earnings upwards. Can you think of other economic consequences of financial reporting and the incentives that result from them for managers?

The Conceptual Framework for Financial Reporting under IFRS

 Picker et al. (2016), Ch. 1

IFRS is a set of financial reporting requirements developed by the International Accounting Standards Board (IASB), a private-sector standard setter based in London. The **objective** of IFRS general-purpose financial statements is to provide **decision-useful information** primarily for capital providers (i.e., existing and potential investors, lenders and other creditors) by depicting levels and changes over time in financial position, performance and cash flows. Other stakeholders' information needs are regarded as secondary or assumed to widely overlap with these primary financial statement users' needs. The financial information issued should assist capital providers in making informed capital allocation decisions, i.e., investment decisions. Of the two general functions of financial statements – *valuation* (forward-looking approach to help users assess the value of an entity) and *stewardship* (backward-looking approach to help users judge managerial performance) – the valuation role is given priority over the historically dominating stewardship role in the current *Conceptual Framework*.

In order to be decision useful for investment decisions, financial statements have to exhibit certain **qualitative characteristics**. The two principal qualitative characteristics are *relevance* and *faithful representation*.

- "**Relevant** financial information is capable of making a difference in the decisions made by users. Information may be capable of making a difference in a decision even if some users choose not to take advantage of it, or are already aware of it from other sources. Financial information is capable of making a difference in decisions if it has predictive value, confirmatory value or both. Financial information has predictive value if it can be used as an input to processes employed by users to predict future outcomes. Financial information need not be a prediction or forecast to have predictive value. Financial information with predictive value is employed by users in making their own predictions. Financial information has confirmatory value if it provides feedback about (confirms or

changes) previous evaluations. The predictive value and confirmatory value of financial information are interrelated." (QC.6-9, emphasis added)

- "Financial reports represent economic phenomena in words and numbers. To be useful, financial information must not only represent relevant phenomena, but it must also **faithfully represent** the phenomena that it purports to represent. To be a perfectly faithful representation, a depiction would be (1) complete, (2) neutral, and (3) free from error. The IASB acknowledges that perfection is seldom, if ever, achievable. Its objective is to maximize those qualities to the extent possible." (QC.12, emphasis added) The requirement of faithful representation substituted the previously required reliability criterion.

Previously, the conceptual decision which pieces of information to include in financial reports, and how to include them, was based on trading off relevance and reliability. Besides the principal characteristics, the *Conceptual Framework* further calls for ***comparability***, ***verifiability***, ***timeliness*** and ***understandability*** as four enhancing qualitative characteristics of decision-useful information.

The IASB also acknowledges that financial reporting imposes costs on companies, and stresses the need that these costs are justified by the benefits of the information provided (**cost constraint**). Moreover, IFRS financial statements are prepared on the assumption that the reporting entity will continue to exist in the foreseeable future (**going concern assumption**). Other important assumptions in the context of preparing the financial statements include the **accrual basis** of accounting (as opposed to cash accounting), the **separate presentation of material items** (including no offsetting; subject to exceptions), and the **minimum annual reporting requirement**.

Annual Reports and Full Sets of Financial Statements

In Germany, publicly traded firms publish their annual financial statements within the annual report. As German publicly traded firms report under IFRS in their **consolidated financial statements**, the financial statements these firms report in their annual reports are prepared under IFRS. Besides the financial statements, annual reports consist of a "glossy" part with pictures of management and products and associated narrative, as well as the management report (*Lagebericht*).

IFRS financial statements are 'general-purpose' financial statements, i.e., they are intended for users that do not have access to tailor-made information from the firm, for example shareholders in public equity markets who hold only a small fraction of the firm's shares ('retail investors'). According to IAS 1.10, a complete set of financial statements comprises:

- a statement of financial position (aka balance sheet);
- a statement of profit and loss (aka income statement) and other comprehensive income;
- a statement of changes in equity;
- a statement of cash flows (aka cash flow statement); and
- notes, comprising a summary of significant accounting policies and other explanatory information.

Whereas many other national accounting systems (including the German Commercial Code as it pertains to large corporations) define detailed structures and required line items, IAS 1 only lays out a limited number of minimum items to be presented in each of the financial statements.

Firms report comparative information for prior periods in the financial statements as well as in the notes.

The Cash Flow Statement

- *Pellens et al. (2021), Ch. 5, pp. 186-217*

Among the financial statements listed above, the cash flow statement plays a critical role. It displays the firm's cash position and explains its change during the reporting period in terms of three cash flow measures that reflect the firm's primary business activities: cash flow from operations (or operating cash flow; CFO), cash flow from investing activities (CFI), and cash flow from financing activities (CFF).

Future cash flows are an important **input into valuation models** (discussed in section 9), and they are taken from forecasts of future cash flow statements. These cash flow statements, in turn, are derived from forecasts of future balance sheets and income statements in a somewhat involved process. Understanding this process, which includes the 'indirect method' of preparing cash flow from operations, is a critical skill that is highly valued in practice, not least because it enhances and documents your understanding of financial reporting as a whole.

Financial Statement Analysis Basics

Stakeholders of the firm extract information from the firm's disclosures using techniques of financial statement analysis. For example, potential investors may look at earnings per share (EPS) to assess the firm's dividend payout potential or, in combination with stock price, whether the firm's shares are reasonably priced. Potential lenders may be interested in the firm's debt-servicing capacity, as reflected in financial ratios such as net debt and financial leverage. Antitrust agencies and the public might assess the firm's profitability by means of financial ratios such as return ratios and margins, for indicators of monopoly power.

Financial statement analysis using financial ratios has two main objectives: First, it facilitates stakeholders' assessment of a firm's past performance and current financial position, i.e., its liquidity and financial stability. Second, it forms the basis of financial statement forecasts (discussed in section 9) for the purpose of firm valuation and bankruptcy prediction.

Learning Objectives

After studying this section, you should:

- Recognize key steps in preparing the financial statements for analysis;
- Understand the main categories of financial ratios and be able to calculate as well as interpret them;
- Be able to analyze a firm's financial statements to separately assess its operating and financial activities; and
- Know how to calculate earnings per share (EPS).

Summary of Section Content

- *Hooke (2015), Ch. 11 – 12.*
- *Lundholm and Sloan (2019), Ch. 5 (skip 5.10).*

Preparing the financial statements for analysis

An effective way of starting a financial statement analysis is to import the reported numbers into a spreadsheet program. This can be done by manually typing up the information, downloading ready-made Excel files provided on corporate websites, or accessing the firm's financial statement through a commercial data provider (the latter will typically alter and condense the reported numbers to some degree). You may then want to adjust and simplify the information by regrouping individual line items into larger categories, calculating meaningful subtotals, and/or renaming them according to a standard template to make them comparable to other firms.

Two additional steps easily performed in Excel will provide a good starting point for subsequent analyses:

- Using **horizontal analysis**, you can assess time trends in balance sheet and income statement numbers by computing year-over-year percentage changes or other comparisons across periods. This facilitates within-firm comparisons over time as well as across-firm comparisons.
- Using **vertical analysis**, you can assess the structure of the financial statements by expressing all balance sheet line items as a percentage of total assets and all income statement line items as a percentage of sales. This facilitates primarily comparisons across firms of different sizes.

Financial ratios

Financial ratios are fractions that relate individual financial statement items or subtotals to each other. For example, the return on equity (ROE) divides profit (an income statement flow variable) to average equity (a balance sheet stock variable). Or take operating margin, which relates operating profit (an income statement flow variable, aka EBIT) to sales (another income statement flow variable). Be careful when relating flow variables (measured over a period of time) to stock variables measured at a point in time.

Ratios exist for each of the three aspects of the firms' financial situation:

- To assess **profitability**, you will mainly use return ratios and profit margins.
- The firm's **liquidity** can be captured by relating the firm's current assets (including cash) to the current liabilities that need to be paid in the short term.
- The firm's **longer-term financial stability** can be assessed using measures of its financial leverage and debt-servicing capabilities.

The choice of financial ratio will always depend on the goal of your analysis. There is no standard guiding the use of financial ratio names and acronyms in practice or in textbooks. For example, be aware that different people mean different things when they talk about "leverage" or "earnings" or even return on assets. Always ask for, and insist on, a clear definition. Also, when you communicate financial ratios to others, always be clear and transparent about the definitions underlying your analyses.

Calculating ratios is never the last step in a financial statement analysis. To be useful, the analysis has to be complemented by an interpretation of these ratios and an overall assessment of the picture that emerges. Not only do you have to be clear in what each ratio means. You also need to discuss whether the ratios' values are favorable or less promising. In other words, there is no financial statement analysis without proper comparisons. These come in three basic forms:

- **Time-series analysis** compares ratio values over time within the firm. The horizontal analysis described above is one primitive form of time-series analysis. When comparing over time, be aware of seasonality (variation of business activities within a year) and cyclicality (variation of business activities across several years).
- **Cross-sectional analysis** compares ratios across firms and is typically done in the form of benchmarking across competitors in an industry.
- **Target-actual analysis** involves assessing whether the firm has reached its objectives for certain ratios. For example, management will typically receive a bonus only when certain profitability targets have been met.

Analyzing individual financial ratios is of little use if one neglects their underlying drivers. For example, a decline in gross margin (i.e., gross profit divided by sales) can be caused by a decline in sales (at constant cost of sales), an increase in cost of sales (at constant sales), or a combination of both. Unless we understand these drivers, we cannot recommend corrective action. Therefore, we complement ratio analysis by a more detailed investigation of the drivers of certain

key ratios. One such analysis is often referred to as **DuPont analysis.** It takes advantage of the fact that return on equity (ROE), a key performance indicator from the perspective of shareholders, can be expressed as the product of three distinct ratios: profit margin, asset turnover, and financial leverage. As such, DuPont analysis allows a deeper understanding of the firm's profitability than ROE alone.

Assessing operating and financial activities

- *Lundholm and Sloan (2019), Ch. 5 (skip 5.10).*

However, DuPont analysis is not perfect. Many (potential) investors are interested in analyzing the firm's operating activities separately from its financing activities. The underlying idea, formalized in the famous Modigliani-Miller theorems, is that value is created primarily in the operations and independent of firms' capital structure. In this simplified world without frictions, one would only care about operating activities. Yet, subsequent research has shown that financing activities have value implications, e.g., due to taxes, bankruptcy costs, and agency problems (see further Kaplan/Stromberg 2009). Therefore, it is usually helpful to analyze the value implications of operating and financing activities separately. For example, leveraged buyout transactions (LBOs) frequently change a target's capital structure post-acquisition by loading it with significant external debt. You can think of at least two ways in which such a buyout could create value: either by improving operations irrespective of the capital structure, or by moving the target's capital structure closer to its optimum without intervening in its operations. See Kaplan/Stromberg for empirical evidence for different channels of value creation in LBOs. Thus, it makes sense to analyze operating and financing activities separately while planning and monitoring such transactions.

Basic DuPont analysis does not accommodate this separation. For example, one of the basic DuPont components of ROE, profit margin, is the fraction of bottom-line profit divided by sales. Whereas sales clearly is an operating item (it represents the firm's primary operating activity: selling its product or service), bottom-line profit is a combination of pre-tax operating profit (EBIT), interest expense (I), and income tax expense (T). Advanced DuPont analysis helps with this problem. It is a method that retains the basic idea of understanding the drivers of ROE, but implements that idea in a way that allows separation of operating and financing performance. In doing so, advanced DuPont analysis provides separate, 'clean', after-tax measures of operating profitability and financing costs.

Advanced DuPont analysis requires a reformulation of the reported financial statements that separates operating assets, operating liabilities, operating income and operating expense from financial assets, financial liabilities, financial income and financial expense. Using these ingredients, we can then calculate two key ratios:

- **Return on net operating assets (RNOA)** is the fraction of after-tax net operating income (NOI) and net operating assets (NOA, i.e., total assets less financial assets and operating liabilities). It represents a 'clean', operating measure of profitability, based on the idea that the firm's assets consist of two categories: The operating assets are necessary for the operations, whereas the financial assets (such as short-term financial investments or idle properties) are not, and can in principle be liquidated to repay debt. At the same time, operating liabilities (e.g., supplier credit in the form of accounts payable) originate incidental to the operations and do not represent financial debt. RNOA accommodates the fact that the benefit from the tax-deductibility of interest expense ('tax shield') stems from the financing activities, not the operations. Therefore, we use a measure of operating income that is calculated as if the firm had no debt. RNOA can be disaggregated into its two primary drivers: net operating profit margin and net operating asset turnover.

- We compare RNOA to **net borrowing cost (NBC)**, a measure of percentage after-tax financial expense. NBC divides net financial obligations (NFO, i.e., total liabilities less financial assets and operating liabilities) by net financial expense (NFE, i.e., the difference of financial income and financial expense adjusted for the tax shield). It provides a 'clean' measure of borrowing cost that clearly shows that the benefit from the tax-deductibility of interest expense arises in the financial sphere, not the operations.

We combine these measures to explain ROE by applying the well-known leverage formula, which expresses ROE as a function of the firm's operating profitability (RNOA), its financial leverage (i.e., NFO divided by equity), and the 'spread' between operating profitability (RNOA) and borrowing costs (NBC) that the firm earns.

Earnings per share (EPS) and EBITDA

- *Picker et al. (2016), Ch. 19.2*
- *Pellens et al. (2021), Ch. 24*
- *IAS 33*

Two other key performance indicators play crucial roles in the context of M&A transactions: Earnings per share (EPS) and earnings before interest, taxes, depreciation and amortization (EBITDA). One key skill we focus on in this course is understanding – as early on in the process as possible - how M&A transactions and their characteristics affect future (post-deal) values of these key performance indicators (KPIs).

EPS, the fraction of bottom-line profit divided by the average number of ordinary shares outstanding, is commonly used as an indicator of dividend payment capacity. Especially when forecasted, it also functions as a fundamental anchor for assessing stock price. In the latter context, the price-earnings ratio (P/E ratio), the fraction of stock price per share divided by (current, expected, or 'sustainable') EPS acts as a gauge of the 'expensiveness' of a stock, with low (high) P/E ratios signaling inexpensive (expensive) stocks.

EPS is also frequently used as KPI in executive compensation. For example, firms might tie their directors' variable remuneration components to the achievement of certain EPS targets. Yet, this use of EPS also sets incentives to managers to influence both the numerator and the denominator of the KPI – the latter, e.g., through repurchases and stock splits. A substantial body of research has investigated the strategic timing of such transactions and their effect on EPS (Hribar et al. 2006; Young and Yang 2011).

Calculating EPS is only straightforward when there is only one category of stock (typically common stock), and when there are no potentially dilutive securities outstanding that, if converted into equity, would dilute EPS by affecting either its denominator only or both numerator *and* denominator. In the latter, a firm calculates both basic (undiluted) and diluted EPS, where diluted EPS is based on the idea that shareholders are interested in the EPS they will be entitled to in the future when all currently possible 'potential' shares are issued. These 'potential' shares can, for example, stem from share options or warrants outstanding which, when exercised, will lead to new shares being issued by the firm. New shares can also arise from convertible bonds outstanding which, when converted, will affect both numerator (less interest expense increases profit) *and* denominator of EPS (more shares issued in return for bonds retired).

EBITDA is another commonly used KPI in the context of M&A transactions. It is a measure of operating profit (EBIT) with an important category of non-cash expense – depreciation and amortization – added back. As such, it combines two advantages: First, it captures operating performance separately from financing effects. Second, consistent with the maxime "cash is king", it approximates cash flow from operations by disregarding depreciation and amortization expense, which do reduce profit, but are irrelevant (in the current period) for the firm's cash position. For this

reason, EBITDA can act as a measure of the firm's debt-servicing capacity, which makes it widely used in ratios such as EBITDA divided by net financial obligations. Knowing that investors are interested in this measure, many firms display EBITDA and adjusted versions of it prominently in their financial communication.