

Chapter 1

The main ideas

Overview

This book is about the economic analysis and interpretation of firms' financial statements. Because we cannot make sense of financial statements without understanding accounting, this is also a book about accounting, and about 'GAAP' or Generally Accepted Accounting Principles, which are the rules that determine what goes into financial statements. A firm's financial statements consist of a balance sheet, an income statement and cash flow statement, plus any subsidiary statements and supporting data. Even in the digital age of continuous data flow, firms still publish their main financial statements annually, and update them half-yearly or, maybe, quarterly. These financial statements provide our window into firms.

Using financial statements to get reliable economic insights about firms looks like a tough task. There is a rich variety of beasts in the corporate jungle, and GAAP adds its own challenge with its technical vocabulary and seemingly arcane rules and conventions. The way to bring order to this complexity is to use an economic model. Investment theory tells us how the accounting would need to be done for financial statements to give reliable measures of the return a firm is earning on its investors' capital. The balance sheet would need to be complete in terms of assets, and record all the claims that others have over the firm; and these assets and liabilities would need to be measured at their current values. This turns out to be a pretty stern test of accounting that is very hard to achieve in practice. But its emphasis on the *completeness* of the balance sheet and on the *valuation* of assets and liabilities gives a very clear structure for thinking about accounting. It provides the organising principle for this book.

The book is in four parts. The first part, *Introduction to accounting*, explains the logic of accounting and describes the content of a balance sheet and an income statement. The second part, *Return on capital*, shows how investors use the balance sheet and income statement to calculate the return a firm is earning on their capital. The third part, *Financial analysis*, explains how we do forensic analysis of the financial statements to reveal as much as possible about the economics of the firm. The final part, *Accounting analysis*, conducts a systematic review of GAAP to identify the issues that need our attention as users of financial statements. In the remainder of this chapter we describe what is coming.

Introduction to accounting

Chapter 2, *Basics of accounting*, uses the simplest of businesses to explain how accountants record transactions, then make adjustments to the data to produce financial statements. It introduces the basic idea in accounting, which is that the income of a business is the change in its assets over a period. The actual balance sheets and income statements firms publish are identical in principle to the simple examples in Chapter 2; they just contain more detail, and frequently use different words. Chapter 3 *Reading the balance sheet and income statement*, shows how to put published balance sheets and income statements into a common vocabulary and into the format we need for analysis. Essentially what we do in these two chapters is introduce the economic framework – categories of asset and claim, and income and expense – that accounting uses and that we need to calculate return on capital, and in financial analysis. We compare four international firms that are

in very different businesses; that use different types of resources and make their money in quite different ways. We will be struck by how effective the accounting framework is in representing them so that they can be directly compared to one another in financial terms.

The fundamental idea in accounting is that a firm's income is the change in its assets or, strictly, its assets less its liabilities. So accounting income depends on how the balance sheet is prepared. The firm's 'accounting model' is the set of rules that determine what assets and liabilities go into the balance sheet and at what values. Chapter 4, *Accounting models*, describes the accounting model that firms would need to use for financial statements to yield reliable measures of return on capital, period by period. This 'investment' accounting model requires a balance sheet that is both complete and at current values. We compare this to the accounting model that GAAP actually uses, and this gives us a look ahead to the issues we encounter through the book.

Return on capital

Financial statements look perfectly set up for measuring return on capital. The balance sheet lists the firm's assets and liabilities, so it tells us how much of the investors' capital the firm is using, and the income statement describes how much income it has earned using that capital. Chapter 5, *Measures of return on capital*, use this data to construct the principal measures of return on capital: 'return on equity', which is the return the firm earns on the funds provided by equity shareholders, and 'return on capital employed', which is an 'entity-level' return on all of the finance raised from shareholders and by borrowing. Return on capital can then be compared to the investors' required return, which is the firm's cost of capital. This leads naturally to the idea of 'economic profit', which is widely used for performance measurement within firms. Economic profit simply internalises the cost of capital comparison by deducting a capital charge from profit.

In practice, people frequently do use financial statement data as a 'value metric'; that is, as a measure of investment return that is compared to the cost of capital. Investors do it when they use accounting data to rank and screen stocks. Regulators do it when they use return on capital to identify monopoly profits, or as the basis for controlling the prices charged by regulated firms. Firms themselves do it when they use accounting data to make investment decisions or to measure divisional performance, or as a factor in management remuneration. Chapter 6, *Value metrics*, discusses some of these applications and the accounting adjustments that practitioners make to get the data integrity needed for reliable measures of return. The chapter ends by comparing accounting returns and share price performance as measures of performance.

Financial analysis

Measuring investment return is an important task but, most of the time, we are wearing a different hat when we read financial statements. We are simply trying to get as rich an understanding as we can of the 'economics' of a firm – the drivers of its profitability and growth, its financial structure, and how cash flows into and out of the firm, and we are comparing firms in these terms. This requires us to understand the accounting, because profitability, financial structure and cash flow are all sensitive to how the accounting is done. We also need to understand the business the firm is in and the 'business model'

it is using. The contractual sophistication of the modern world makes it easy for firms to change their business model, by outsourcing some activities or arranging for parts of the productive process to be undertaken by other firms. This can radically change the appearance of the financial statements.

Chapter 7, *Operating profitability*, shows how to use financial ratios to conduct a systematic decomposition of return on capital employed, first into margin and asset turn, then into their component costs, and assets and liabilities. Chapter 8, *Cash flow*, explains how to analyse the cash flow statement to get most insight into the way a firm is generating and using cash. Cash flow is a story, not a number, and we want the cash flow statement to present the story in a transparent and coherent way. We discuss how the appearance of the cash flow, like the other financial statements, is affected by the firm's business model, by growing and shrinking, and by the firm's accounting policies. Chapter 9, *Capital structure*, provides the tools for analysing the firm's financial structure, but from the perspective of the adequacy of the firm's assets to meet its liabilities, and to measure the extent to which the firm funds its capital employed using debt. Borrowing brings a fixed commitment to pay interest, and we show how this affects the level as well as the volatility of earnings. Chapter 10, *Growth*, explains how to analyse a firm's growth. It is easy enough to measure the firm's overall sales growth, year on year, and GAAP also requires firms to report sales growth at the segment level. But we will see that GAAP does not currently provide the disclosure to go much deeper than this.

Financial analysis is story telling – we are trying to tell the firm's economic story using financial statement data and any non-financial information that the firm has provided. Even when the firm is not using the accounting model we might want, if we know how the numbers were measured we can adjust the data, or use our experience to form a judgement. If financial statements do not give a clear window into the firm this is mainly because of the aggregate nature of financial statements and the lack of disclosure and transparency, rather than the way the numbers are measured. So the stories we tell are necessarily conjectures and we should constantly seek more data and look for alternative explanations, and keep asking ourselves just how much confidence we have in our judgements.

Accounting analysis

Until quite recently the accounting world was truly a 'Babel' where most countries required their firms to report using national rules. However, two systems now dominate – US GAAP and International GAAP, that for shorthand we call IFRS, and we review both systems in this book. The exhibit opposite, *GAAP history and institutions*, describe some of the institutional background. Though, viewed from close up, there remain many differences of detail, from the high-level perspective of this book IFRS and US GAAP are similar in most important respects. We explain the differences as we encounter them, but where the systems are effectively the same we talk generically about 'GAAP'.

GAAP is always controversial; people disagree with particular treatments, or just complain that GAAP is too complex. But, with one or two exceptions, it is the world that is the problem, not GAAP. Balance sheets are black and white, so assets and liabilities are either in the balance sheet, or out. But the world is complex and ambiguous. What assets

and liabilities are worth, and whether they even exist, may be uncertain. Sometimes it is unclear whether or not a firm owns a particular asset, especially if it has written a complex contract that shares the risks and rewards of ownership with others. The only way GAAP can represent this complex world in the binary framework of the balance sheet is with a system of categories and thresholds, applied with a bias to conservatism. Systems like this always seem arbitrary at the margin.

In this part of the book, the focus remains the integrity of the balance sheet – its completeness, and how assets and liabilities are valued. Chapter 11, *Assets*, discusses asset recognition and, in particular, the treatment of intangible assets. For GAAP, a necessary condition for recognising an asset in the balance sheet is that the future benefits can be measured reliably. This turns out to be tough on home-grown intangible assets, such as brands, patents, organisational competencies and know-how, that may be the most valuable assets many firms have. But if an intangible asset was purchased rather than home-grown, as commonly happens in a takeover, GAAP requires it to be recognised in the balance sheet. So we also discuss the accounting treatment of takeovers at this point. Chapter 12, *Liabilities*, discusses the recognition of liabilities in the balance

Exhibit: GAAP history and institutions

The US Securities and Exchange Commission (SEC), which was formed in 1933-4 in the wake of the Great Crash, mandated the US accounting profession to set financial reporting rules and the body that does this is now called the Financial Accounting Standards Board (FASB). In countries such as the US where GAAP has evolved over a lengthy period and that have a legal system based on Common Law, GAAP is multi-source and need not even be written down so long as it represents accepted practice. The prime written sources of US GAAP are Statements of Financial Accounting Standards (SFAS) and also bulletins and interpretations issued by the FASB. Statements of Position (SOP) by the American Institute of Certified Public Accountants (AICPA), and opinions and discussions by the Emerging Issues Task Force (EITF) are also influential.

In 1973 a group of countries (Australia, Canada, France, Germany, Japan, Mexico, the Netherlands, the UK and the US) created the International Accounting Standards Committee (IASC) to develop a unified set of international accounting standards called International Accounting Standards (IAS). In 2001 the IASC became the International Accounting Standards Board (IASB), which issues International Financial Reporting Standards (IFRS). In this book we refer to 'International GAAP' as IFRS. IFRS is progressively replacing national GAAP in countries outside the US, and it became mandatory for stock market listed firms in the European Union from 1 January 2005.

IFRS and US GAAP are continuing to converge with each other and now develop their standards jointly. Of course, optimism about convergence has to be qualified because nationalism remains a powerful instinct. So far at least, countries have tended to maintain their own GAAP, even after they have accepted IFRS. For example, European countries still use their national GAAP for non-listed firms. But since IFRS and US GAAP usually represent best practice, there is a natural tendency for national GAAPs to evolve to look like them. A strong force for convergence is the actions of firms themselves. Firms that want to be seen as world class will endeavour to report to the highest standards, especially if they want to raise money on international capital markets. German firms are a good example of this. Even though IFRS was not mandatory until 2005, by 2003 67% of the largest German firms were already using IFRS and 23% US GAAP, leaving only 10% following German GAAP (see Chris Higson and Mark Sproul, *Coping with IFRS*, London Business School/Company Reporting, 2005).

sheet. Again, we discuss how GAAP deals with the indeterminacy of the world, and we examine some of the most important classes of liability for firms, including tax liabilities and pension liabilities. From a GAAP perspective, the other key issue for asset recognition is the property rights question: does the firm own the asset? We postpone the ownership question to Chapter 13, *Asset/liability netting*, where it is best discussed in tandem with the recognition of liabilities. We discuss techniques such as non-consolidation and operating leasing which permit firms to finance some assets in such a way that the asset and the corresponding debt finance can be netted and excluded from the balance sheet.

Chapter 14, *Balance sheet valuation*, discusses how assets and liabilities are valued in practice. GAAP strives for balance sheet completeness, but it doesn't give us balance sheets that are at current value. Revaluing assets and liabilities each year would be costly and would introduce significant subjectivity into accounting. So the value basis of balance sheets remains, fundamentally, historic cost – if assets become worth less than cost they are written down, but if they become worth more they are left at cost. IFRS permits fixed assets and intangibles to be revalued, while US GAAP insists on historic cost. Also GAAP requires 'fair valuation' of some financial assets and liabilities. The result is that financial statements give us a cocktail that has a base of historic costs with some current value mixed in.

Chapter 15, *Income*, examines the income statement. Through choices about when to recognise revenues and costs, accrual accounting gives firms some discretion in timing earnings. Here we focus on revenue recognition. How the income statement is presented can be as important as how income is measured. For example, firms may emphasise some components of income while classifying other components as extraordinary or exceptional and inviting the analyst to treat them as transitory. In recent years some firms have taken this even further by producing a so-called 'pro-forma' report alongside their GAAP numbers.

Using this book

Building an understanding is not like building a wall; it is usually best to start at the top and work down to the foundations. In this book, we begin with the idea of a balance sheet and of an income statement, and how they are used to measure return on capital. These are all very intuitive constructs – they make sense as ideas, without needing to know in great detail how accountants build them. We fill in that detail as the book proceeds.

We use a lot of cases and examples to illustrate the points along the way. *Cases* are based on the publicly available data of real firms. *Examples* are simple stories that are made-up; they have no connection at all to real-world businesses that might happen to share the same name! *Exhibits* are short narratives describing pieces of history or literatures that help put the ideas we are discussing into context. The book's website www.higsonfinancialstatements.com contains plenty more supporting materials: cases, examples and readings. We do not reproduce the financial statements of firms that we discuss because these are now invariably available from the firm's own website; in most cases the book's website contains links to them.

A significant barrier to entry to understanding financial statements is vocabulary. Accounting has a very powerful conceptual structure to describe firms in economic terms. But GAAP does not police the vocabulary and formats that firms use very tightly. Accountants can use different words for the same thing, and can mean different things by the same word. The vocabulary and formats that we use in this book are a mix of US GAAP and IFRS practice. We italicise terms the first time they are introduced and defined and, where there is a variety of vocabulary used in practice, we explain the main alternatives as we go along. The vocabulary is collected in a *Glossary* at the end of the book. Also at the end of the book are a *Glossary of financial ratios*, and an appendix on *Financial arithmetic* covering the financial arithmetic we use in accounting and financial analysis.