

Finance, the Firm, and the Statements

Chapter 0 set out what finance is for and described different finance career paths. This chapter begins the course material. Accounting and finance work from the same financial statements but ask different questions of them. The accountant's question is what happened, and the answer must follow a strict set of rules. The financial analyst's question is what the numbers imply about the economics of the business and what should be done next, and there is no rulebook for that. This chapter builds the vocabulary and the structure you need before that second question can be asked at all.

Almost everything in the rest of the course rests on three ideas introduced here: that a firm is a bundle of assets funded by claims, that the three financial statements are three views of one system rather than three unrelated reports, and that profit and cash are different quantities that can move in opposite directions for years. This third idea surprises people, and it is one reason finance exists as a separate discipline.

HOW TO USE THIS CHAPTER

This chapter gives you the definitions, the structure of each statement, the conventions that differ between firms, and the errors worth knowing by name. It is written to be re-read; the reference table at the end is meant to be used during the cases and the capstone.

The videos take one fictional company — Adom Fresh Foods, a produce distributor in Accra — and work through a full set of its statements line by line.

The case puts two small bakeries side by side and asks which one you would rather own.

CHAPTER-TO-VIDEO CROSSWALK

VIDEO	CHAPTER SECTIONS	HOW THE TWO FIT TOGETHER
1.1 • What a firm is	1.1	Builds the assets-and-claims model, then extends it by comparing what assets earn with what their capital costs
1.2 • Three statements, one system	1.2	Applies the three-statement structure to individual transactions and introduces stocks and flows
1.3 • The income statement	1.3	Builds Adom's statement and reads the queue and margins line by line
1.4 • The balance sheet, and why cash changed	1.4–1.5, plus the linkage checks in 1.2	Moves from two balance sheets to the indirect cash-flow statement and tests all three reconciliations
1.5 • Why profit is not cash	1.6, with selected ideas from 1.7	Uses Adom to separate ordinary growth from deteriorating collections and inventory discipline
Reference extensions	1.7–1.8	Adds a fuller treatment of accounting judgment and a repeatable sequence for reading statements; there is no separate video

1.1 The Firm as Assets and Claims

The basic structure of a company is a pool of assets on one side and a set of claims on those assets on the other. Because every asset must have been funded by someone, the two sides are equal by construction. That is the accounting identity:

$$\text{Assets} = \text{Liabilities} + \text{Equity}$$

Read this identity as a sentence about ownership. **Assets** are resources that the owners of the firm control and expect future benefit from. **Liabilities** are obligations of the firm to other parties that will require the future payment or transfer of economic resources. They represent creditors' claims on the firm and may be fixed — such as loans — or estimated, such as provisions, warranties, or pension obligations. In liquidation, liabilities are settled before any remaining assets are distributed to the owners. **Equity** is what remains once every prior claim is satisfied, which is why it is called the residual claim.

Rearranged, the identity says something sharper about who bears risk.

$$\text{Equity} = \text{Assets} - \text{Liabilities}$$

The owners hold the difference between two other numbers. If assets are worth 500 and liabilities are 300, equity is 200; if the assets turn out to be worth 380, equity falls to 80 but the lenders have lost nothing. Every fluctuation in the value of the business lands on the equity line first and reaches the lenders only once equity is exhausted. **Leverage is the quantity of other people's fixed claims sitting in front of the residual one**, and Chapter 2 shows it to be the single most powerful influence on how a return looks.

Two properties of the accounting identity are worth stating because they cause a great deal of misplaced confidence. It always balances, including at companies about to fail; a balanced balance sheet is evidence of arithmetic, not of health. And it is stated at a moment in time — the last day of the reporting period — so it is only a snapshot. A firm can dress that single day up in ways it cannot sustain for the other three hundred and sixty-four.

1.2 Three Statements, One System

The three financial statements are not three separate reports about three different subjects. Instead, they are three views of the same system, and each helps answer a question the other two cannot.

WHAT EACH STATEMENT MEASURES

STATEMENT	QUESTION ANSWERED	PERIOD OR MOMENT	UNITS
Income statement	Did the firm create value from operating over the period	A span of time	Accrual amounts
Balance sheet	What does the firm own and owe right now	A single instant	Balances
Cash-flow statement	Where did money actually come from and go	A span of time	Cash

The three connect through relationships that hold in every set of accounts ever produced, and checking these relationships is the fastest way to establish that a set of statements is internally consistent.

THE THREE LINKAGES

Profit (from Income Statement) to equity (on Balance Sheet)	Closing equity = opening equity + net income – dividends + new shares issued
Cash (from Cash-flow Statement) to cash (on Balance Sheet)	Closing cash on the balance sheet = opening cash + net change per the cash-flow statement
Depreciation (from Income Statement) to assets (on Balance Sheet)	Closing net fixed assets = opening net fixed assets + capital expenditure – depreciation

These are worth memorising, because they are the checks you will run on your own work for the rest of your career. If a forecast you have built does not satisfy all three, it contains an error. Every model in Chapters 3, 8, and 9 is checked this way.

A note on the order of preparation, which explains why the statements have the shape they do. The income statement is prepared first; its result feeds equity on the balance sheet; the cash-flow statement is then derived by explaining the difference between two consecutive balance sheets. The cash-flow statement is therefore not an independent document – in most reporting systems it is reconstructed from the other two, which is precisely why it is capable of exposing what they conceal.

1.3 The Income Statement: A Queue of Claims

The most useful way to read an income statement is as a queue. Revenue arrives at the top and each class of claimant is paid in a fixed order. Whatever survives the queue belongs to the owners.

THE QUEUE, AND WHO IS PAID AT EACH STAGE

Revenue	What customers were charged for goods delivered or services performed
Less cost of goods sold	Paid to suppliers of the thing that was sold
Gross profit	What is left to run the business with
Less operating expenses	Paid to staff and costs of premises, transport, administration
Less depreciation and amortisation	Cost from consuming long-lived assets, charged over their life
Operating income	What the business earns before financing and tax
Less interest	Paid to Lenders
Less tax	Paid to the government
Net income	Paid to owners

Two features of that queue carry most of the analytical weight. **Order matters**: lenders are paid before owners, which is what makes debt safer than equity. And **operating income is the natural dividing line** – everything above it describes how the business is run, everything below it describes how the business was financed and taxed. Two firms running identical operations can report very different net incomes purely from different funding structures, and the only way to see that is to read the two halves separately.

As an example, consider a firm with one hundred units of revenue. Suppose the firm pays suppliers 60, operating costs take another 25, lenders take 5, and tax is charged at 30 percent of the remaining income. The income statement looks like:

ONE HUNDRED UNITS OF REVENUE, DISTRIBUTED

STAGE	AMOUNT	MARGIN
Revenue	100	—
Less cost of goods sold	(60)	—
Gross profit	40	40%
Less operating costs	(25)	—
Operating income	15	15%
Less interest	(5)	—
Pre-tax income	10	—
Less tax at 30%	(3)	—
Net income	7	7%

The three margins in the right-hand column are primary ways to analyze profitability across firms.

THE THREE MARGINS

MEASURE	GENERAL FORMULA	WHAT IT TELLS YOU
Gross margin	Gross profit / Revenue	Pricing power against input cost
Operating margin	Operating income / Revenue	How efficiently the whole operation is run
Net margin	Net income / Revenue	What the owners keep, after financing and tax

Read these margins as a set rather than one at a time. The **gap** between two margins is exactly the expenses that sit between them, so comparing gaps across years localises a problem precisely. If gross margin holds steady while operating margin falls, the problem is overhead. If operating margin holds and net margin falls, the problem is interest or tax and has nothing to do with the business at all.

Where firms differ, and what to do about it

Gross margin is the least comparable across firms of the three margins, because firms disagree about what belongs in cost of goods sold. A distributor that puts delivery costs in cost of sales reports a lower gross margin than an identical distributor that puts them in operating expenses. Their **operating margins are identical**, because operating income sits below both lines.

- When comparing gross margins across firms, read the accounting-policy note first so that you understand what is included in cost of goods sold. When you cannot obtain details, say so and lean on operating margin over gross margin.
- Depreciation is sometimes inside cost of goods sold and sometimes shown separately. This moves gross margin without moving operating margin, for the same reason.
- EBITDA is operating income with depreciation and amortisation added back. It is not a defined measure under major accounting standards, which means firms compute it differently and you must check what a given firm has excluded.

These are mostly problems with comparing profitability across firms. When comparing profitability over time within the same firm, the margins are usually calculated the same way.

IN THE VIDEOS *Video 1.3 builds an income statement for a working distributor and reads the queue downward, one claimant at a time.*

1.4 The Balance Sheet: Classification and What It Does Not Say

The balance sheet lists assets in order of how quickly they become cash and claims in order of how soon they must be settled. The dividing line in both cases is one year, and the split exists so that a reader can compare what is about to arrive against what is about to fall due.

THE FOUR BLOCKS

BLOCK	CONTAINS	ORDERING PRINCIPLE
Current assets	Cash, receivables, inventory, prepayments	Expected to become cash within a year
Non-current assets	Property, plant, equipment, intangibles, long-term investments	Held to be used, or not expected to be sold within a year
Current liabilities	Payables, overdrafts, loan principal due within a year, accruals	Payable within a year
Non-current liabilities	Term loans, leases, bonds	Payable after a year

Two related definitions get used constantly in future chapters, so they are worth remembering.

TWO WORKING DEFINITIONS

Working capital	Current assets – current liabilities
Net working capital, as used in valuation	(Receivables + inventory) – payables; excludes cash and excludes debt

The second definition is the one that matters in Chapters 3, 8, and 9. It strips out cash and short-term borrowing, both of which are financing rather than operating items, leaving only the money genuinely trapped in the operating cycle. **Growth consumes this quantity**, and Chapter 4 is devoted to that fact.

Four things the balance sheet does not tell you

- **What the assets are worth.** Most are reported at the value that what was paid for them, less depreciation. A warehouse bought fifteen years ago sits at a number with no relationship to what it would fetch today. Chapter 5 takes this apart.
- **What the business is worth.** Equity on a balance sheet is an arithmetic residual of historical figures. The market value of the same equity is a claim on future cash, and is routinely a multiple of the book number – or a fraction of it.
- **The firm's most valuable resources, in many cases.** A trained workforce, a customer list, a brand, a distribution relationship: usually absent, because they were not purchased in a transaction. Intangibles generally appear only when one company buys another.
- **What happened during the year.** It is a single day. Firms can and do arrange that day – collecting hard in the final week, delaying payments into the new year – so that it might misrepresent the other three hundred and sixty-four days.

1.5 The Cash-Flow Statement

The cash-flow statement explains the change in the cash balance over the period, sorted into three activities. The sort is the useful part: the same net change can be reassuring or alarming depending entirely on which section produced it.

THE THREE SECTIONS

SECTION	CONTAINS	READS AS
Operating	Cash generated by trading, after working-capital movements	Whether the business funds itself
Investing	Purchases and sales of long-lived assets	Whether it is being built or harvested
Financing	Borrowing, repayment, share issues, dividends	Who is funding the difference

The most common way to produce a cash-flow statement is called the **indirect method**. This method starts from net income and reconciles it to cash. Every line answers the question "what makes cash differ from profit?"

THE INDIRECT RECONCILIATION, IN GENERAL FORM

LINE	SIGN	REASON
Net income	start	Profit to Owners
Add depreciation and amortisation	+	Charged against profit, but does not use cash
Increase in receivables	–	Revenue recognised, but cash not yet collected
Increase in inventory	–	Cash spent on inventory not yet sold
Increase in payables	+	Cost recognised, but supplier not yet paid
Equals cash from operations	=	What cash was actually produced

Whether to add or subtract these lines are the single most common source of error in a first model. **An increase in any operating asset consumes cash; an increase in any operating liability provides it.** Receivables rising means you sold something and were not paid, so the increase in cash is smaller than profit. Payables rising means you received something and did not pay, so cash is above profit. Remember that principle and you never have to memorise the table.

Watch the pattern of signs across the three sections of the cash-flow statement, because the combination is diagnostic in a way no single number is.

READING THE PATTERN

OPERATING	INVESTING	FINANCING	TYPICAL INTERPRETATION
Positive	Negative	Negative	A mature business funding its own investment and returning capital
Positive	Large negative	Positive	A growing business investing beyond its own means
Negative	Negative	Positive	Operations consume cash and borrowing fills the gap
Negative	Positive	Negative	Selling assets to stay alive

The third row is the one to especially watch out for. It can persist for several years while the income statement reports profits throughout, because borrowing generates cash without appearing anywhere on the income statement except as interest.

IN THE VIDEOS Video 1.4 derives a full cash-flow statement from two consecutive balance sheets and an income statement; video 1.5 reads the resulting pattern.

1.6 Why Profit Is Not Cash

This is the central idea of the chapter. Let's examine a single transaction: A hardware wholesaler buys inventory for 80 on thirty days' credit and sells it in the same week for 100 on sixty days' credit.

ONE TRADE, THREE STATEMENTS

Income statement	Revenue 100, cost of sales 80, profit 20
Balance sheet	Receivables +100, inventory unchanged, payables +80, equity +20
Cash	Nothing has moved

The identity still holds: assets rose by 100 and claims rose by 80 of payables plus 20 of equity. The profit is real and correctly reported. But the business doesn't have any more cash. On day thirty the supplier is paid and cash falls by 80; finally, on day sixty the customer pays and cash rises by 100. The profit was earned in week one and the cash completes its journey on day sixty. **Nothing went wrong in this example** — this is what an ordinary, healthy trade looks like — and profit and cash were still separated by two months.

Now scale it. A firm doing this trade once has 20 of profit and a two-month wait. A firm doing it repeatedly and growing has more stock bought and more invoices outstanding every month, so the wait never ends and grows with the business. This is why growth consumes cash, which we explore more in Chapter 4.

The five reasons profit and cash differ

Every divergence between profit and operating cash traces to one of five causes.

- **Accrual timing.** Revenue is recorded when earned and costs when incurred, not when money moves. This is the source of receivables and payables.
- **Capital expenditure.** Buying an asset is a full cash outflow now and reaches profit only gradually, as depreciation. This asymmetry is the subject of one of the most consequential rules in Chapter 8.
- **Working-capital movements.** Money trapped in inventory and invoices has been spent and not yet recovered, and does not appear on the income statement at all.
- **Financing.** Borrowing brings in cash with no effect on profit; repaying principal costs cash with no effect on profit. Only the interest touches the income statement.
- **Non-cash charges.** Amortisation, impairments, gains on asset sales, revaluations, and provisions move profit for reasons unrelated to trading.

The category driving any difference between profit and cash does not, by itself, indicate whether the difference is healthy. Normal business activity and growth may create temporary differences. Assess the gap's cause, magnitude, and persistence before drawing conclusions. Profit that is

persistently higher than the cash that is generated is likely to be a problem. And the cash-flow statement can help you find the source of that problem.

IN THE VIDEOS *Video 1.5 shows a company reporting a solid annual profit alongside deeply negative operating cash flow, and traces the difference line by line.*

1.7 Reference Extension: Accounting Judgment and What It Can Hide

Financial statements are the output of a rulebook that requires judgement at several points. The judgements are legitimate; they are also a lever, and knowing which way each one pushes is part of reading a statement properly.

FOUR PLACES JUDGEMENT ENTERS

JUDGEMENT	THE CHOICE	EFFECT OF THE AGGRESSIVE OPTION
Revenue recognition	When a sale is considered earned	Recognising earlier raises current revenue and receivables
Depreciation policy	Useful life and salvage value assumed	A longer life lowers the annual charge and raises profit
Capitalise or expense	Whether a cost creates an asset or is consumed now	Capitalising raises current profit and total assets
Provisions and reserves	How much to set aside for bad debts and claims	A small provision raises current profit and receivables

The size of these effects is easy to underestimate. An asset costing 60 depreciated over five years carries a charge of 12 a year; the same asset over eight years carries 7.50, and reported profit is 4.50 higher every year for no change whatever in the business. A cost of 24 expensed immediately reduces this year's profit by 24; capitalised over four years it reduces it by 6. **The four-year total is identical either way** – judgement moves profit between periods, it does not create it – but the first year differs by 18, and a reader looking at one year sees a different company.

Three habits protect you. Compare the depreciation charge against capital expenditure, since a firm whose charge is persistently far below its spending is either growing quickly or stretching lives. Compare growth in receivables against growth in revenue, since revenue recognised aggressively accumulates as receivables that are never collected. And read the cash-flow statement, because **none of these judgements moves cash**. That is the deepest reason the statement matters: it is substantially harder to flatter.

1.8 Reference Extension: A Sequence for Reading a Set of Statements

A repeatable order stops you being led by whichever number is printed largest. This is the sequence used throughout the course.

- **Read the cash-flow statement first**, and specifically the operating line. Ask whether the business funds itself.
- **Compare operating cash flow with net income** across three years. Persistent divergence in one direction is the strongest early signal available in a set of accounts.

- **Read the income statement as percentages of revenue** rather than in currency, so that changes in the business are separated from changes in size.
- **Compare the growth of receivables and inventory against the growth of revenue.** These should move roughly together; when they do not, something about collection or stock has changed.
- **Check leverage and the interest burden**, which determine how much room the firm has when a year goes badly.
- **Verify the three linkages** from section 1.2. If they do not tie, you are reading numbers that do not describe one company.

Only at that point are ratios worth computing, which is where Chapter 2 begins.

1.9 Reference

CHAPTER 1 • DEFINITIONS AND IDENTITIES

TERM	FORMULA	NOTE
Accounting identity	$\text{Assets} = \text{Liabilities} + \text{Equity}$	Holds always, including at failing firms
Equity as residual	$\text{Equity} = \text{Assets} - \text{Liabilities}$	Owners hold the difference
Gross margin	$\text{Gross profit} / \text{Revenue}$	Least comparable across firms
Operating margin	$\text{Operating income} / \text{Revenue}$	The comparable profitability measure
Net margin	$\text{Net income} / \text{Revenue}$	Includes financing and tax
Working capital	$\text{Current assets} - \text{current liabilities}$	Balance-sheet definition
Net working capital	$\text{Receivables} + \text{inventory} - \text{payables}$	Operating definition, used in valuation
Equity roll-forward	$\text{Opening} + \text{net income} - \text{dividends} + \text{issues}$	Linkage check 1
Cash roll-forward	$\text{Opening cash} + \text{net change in cash}$	Linkage check 2
Fixed-asset roll-forward	$\text{Opening} + \text{capex} - \text{depreciation}$	Linkage check 3
Cash from operations	$\text{Net income} + \text{non-cash charges} - \text{increase in operating assets} + \text{increase in operating liabilities}$	Indirect method

CARRY FORWARD

An asset increase consumes cash; a liability increase provides it. Every working-capital sign in every model you build follows from this one sentence.

Operating income divides the business from its financing. Above the line describes the operation; below it describes the capital structure and the tax authority.

Profit and cash diverge for five reasons, and the category alone does not tell you whether the gap is healthy. Ordinary trading and growth can create temporary accrual and working-capital gaps. Persistent receivables or inventory build-up, aggressive accounting estimates, capital spending the business cannot fund, or continued reliance on new borrowing can turn those same mechanisms into warnings. Diagnose the cause, size, and persistence of the gap before judging it.