Financial Modelling and Excel

Interview preparation summary · FP track

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INT.FM.1.a · Modelling

Build a driver-based three-statement forecast in which net income, working capital, capex and dividends link the statements and a check proves they balance.

A three-statement model forecasts the income statement, balance sheet and cash flow statement together so that they agree. Interviewers expect a clear order. Put assumptions in one inputs area. Forecast revenue from drivers such as volume and price rather than a bare growth rate, set costs as a percentage of revenue or as fixed amounts, and forecast receivables, inventory and payables from days. Then link the statements: net income feeds retained earnings and the top of the cash flow statement; depreciation reduces fixed assets and is added back in cash flow; capex adds to fixed assets and is a cash outflow; working capital movements flow into operating cash; dividends reduce both equity and cash. Closing cash must come from the cash flow statement, never be typed in or used as a balancing figure, and a check row compares total assets with liabilities plus equity. The usual mistake is to forecast the balance sheet first and back into cash, which hides linking errors.

WORKED EXAMPLE: LARKFIELD FOODS: A ONE-YEAR FORECAST THAT BALANCES

Larkfield Foods is an invented food producer. Last year revenue was 80.0m. Opening balances in GBP m: cash 5.0, receivables 10.0, inventory 8.0, fixed assets 20.0, payables 7.0, equity 36.0. Forecast assumptions: revenue growth 6%, cost of sales 62% of revenue, operating costs 18% of revenue, depreciation 2.4m, tax 25% of operating profit, receivable days 45 on revenue, inventory days 60 and payable days 40 on cost of sales, capex 3.0m, dividends 30% of net income. There is no debt or interest and a year has 365 days. Build the year and prove it balances.

Answer: Net income is 10.92m, operating cash flow 10.99m and closing cash 9.71m. Total assets and total liabilities plus equity are both 49.40m, so the model balances.

Interview tip: Say the order aloud: assumptions, income statement, working capital, cash flow, balance sheet, then the check. Add that cash came from the cash flow statement, so a zero check is a real test and not a plug.

INT.FM.1.b · Modelling

Value a business or project with a simple discounted cash flow, separate the explicit forecast from the terminal value and test how much the answer rests on the terminal assumptions.

A simple DCF estimates enterprise value as the present value of unlevered free cash flow: operating profit after tax, plus depreciation, less capex, less the increase in working capital. Forecast an explicit period, often five years, then add a terminal value, usually the final-year cash flow grown at a modest rate and divided by the discount rate less that growth rate. Discount every flow at a rate that reflects its risk, typically a weighted average cost of capital. Enterprise value less net debt and other claims such as minorities gives equity value. Interviewers look for the terminal value share, which is often well over half of the total, and for sensitivity: a small change in the discount rate or growth rate moves value a lot. A good candidate cross-checks the implied exit multiple against typical ranges and never presents one point estimate as precise. The usual mistake is to discount interest-bearing flows at the wrong rate or to forget net debt.

WORKED EXAMPLE: BRINDLE PACKAGING: FIVE YEARS AND A TERMINAL VALUE

Brindle Packaging is an invented packaging business. Its unlevered free cash flows for the next five years are 10.0m, 11.0m, 12.0m, 13.0m and 14.0m, received at the end of each year. The discount rate is 9% and long-run growth after year five is 2%. Net debt is 20.0m. Value the enterprise and the equity, and say how much rests on the terminal value.

Answer: Enterprise value is about 178.60m and equity value about 158.60m, with roughly 74% of the enterprise value in the terminal value.

Interview tip: State the discount rate and growth rate, give enterprise value then equity value, and volunteer that three quarters of the value is terminal, so you would show a sensitivity range, not one number.

INT.FM.1.c · Modelling

Review a model for errors: read a balance check, trace a difference to its likely cause, spot hardcodes and handle a circular reference sensibly.

Model review is a skill in its own right, and interviewers often hand over a flawed model to see how you approach it. Start with the checks: does total assets equal liabilities plus equity in every period, and does the cash flow statement closing cash match the balance sheet? If not, size the difference and read it. A difference equal to a single item suggests that item was left out or double counted; a difference equal to twice an item suggests a sign error; one divisible by nine suggests transposed digits; a difference that first appears in one period points to a formula that changed in that period. Then look for hardcodes typed over formulas, inconsistent formulas across a row, units mixed between thousands and millions, and links to the wrong row. Circular references, such as interest on an average debt balance, are handled by using the opening balance or by iterative calculation with a switch. The usual mistake is to fix the number and not find the cause.

WORKED EXAMPLE: FENWICK CONTROLS: THE BALANCE SHEET IS OUT BY 3.0M

Fenwick Controls is an invented controls manufacturer. A draft model shows total assets of 114.4m and total liabilities plus equity of 117.4m in the forecast year. Liabilities are 52.0m. The equity roll-forward uses opening equity of 55.0m, net income of 8.9m and dividends of 1.5m. Find the likely cause and correct it. Figures are in GBP m.

Answer: The 3.0m difference is twice the 1.5m dividend: dividends were added to equity instead of deducted. Correct equity is 62.4m and the model then balances at 114.4m.

> **Interview tip:** Say what you would do in order: size the difference, compare it with single items, double items and nine multiples, test the guess, fix the formula, then check the other periods for the same copied error.

INT.FM.2.a · Excel skills

Use lookups, SUMIFS and IF logic to pull and total data reliably, and explain why each function and match type is chosen.

Interviewers test a short list of functions because they cover most real finance work. A lookup, such as XLOOKUP or INDEX with MATCH, finds a value by its key; use exact match for codes and names so a missing item shows as an error instead of returning a neighbour. VLOOKUP with a fixed column number breaks when columns move. SUMIFS adds values that meet all stated conditions, for example sales for one region and one product, and COUNTIFS and AVERAGEIFS work the same way; the sum range and criteria ranges must be the same size. IF logic flags exceptions, for example margin below a threshold, and is clearer when the threshold sits in an input cell. Wrapping a formula in IFERROR to return zero hides problems, so use it only for expected gaps. Dirty keys, such as trailing spaces, are the usual cause of failed lookups. Finish every summary with a check that the parts add to the total.

WORKED EXAMPLE: MARGIN BY REGION AND PRODUCT WITH SUMIFS

A sales extract has eight lines (region, product, sales, cost, GBP k): North Pump 12.0 and 7.8; North Valve 8.0 and 5.2; South Pump 15.0 and 10.5; North Pump 9.0 and 6.3; South Valve 6.0 and 3.9; North Pump 4.0 and 2.9; South Pump 11.0 and 7.4; East Valve 5.0 and 3.0. Calculate the margin for North Pump and South Pump, flag any below 31.5%, and show how you would check the totals.

Answer: North Pump earns 32.0% on sales of 25.0k and passes the test. South Pump earns 31.2% on 26.0k and is flagged. Region totals of 33.0, 32.0 and 5.0 reconcile to 70.0k.

> **Interview tip:** Name the function, say why the match type is exact, put the threshold in a cell and finish with the control total. Add that you would not hide an error with IFERROR.

INT.FM.2.b · Excel skills

Clean a raw data extract and summarise it with a pivot table, handling text dates, duplicates and control totals.

Test-style exercises often start with an untidy extract, and the first marks go to how you treat it. Check the shape first: row count, control total, blank cells. Convert text dates to true dates, being careful with day-month order, because 03/02 can be read two ways; a value such as 28/01 settles which. Trim stray spaces, make names consistent and standardise units. Treat duplicates with care: identical rows may be a real repeat purchase, so look for a unique reference before deleting, and note the change to the total. Keep the original data untouched on its own sheet. Then build a pivot table from a formatted table so that new rows join the range, group dates by month, and refresh after changes. Remember that a pivot average of a price column is a simple average and ignores volumes, so weighted measures need total value over total units. Finish by agreeing the pivot grand total to the cleaned control total.

WORKED EXAMPLE: CLEANING A LEDGER EXTRACT AND BUILDING A MONTHLY PIVOT

A ledger extract has eight rows (reference, date as text in day/month/year, amount in GBP k): L101 05/01/2027 14.0; L102 12/01/2027 9.5; L103 28/01/2027 6.5; L104 03/02/2027 11.0; L104 03/02/2027 11.0; L105 15/02/2027 7.5; L106 20/02/2027 minus 2.0, a credit; L107 27/02/2027 8.0. Clean it, summarise by month and agree the totals.

Answer: After converting dates and removing the confirmed duplicate, the ledger totals 54.5k: January 30.0k and February 24.5k, reconciled to the raw total of 65.5k less the 11.0k duplicate.

Interview tip: Say that you keep the raw data, record a control total, check duplicates against a unique reference, group by month in a pivot and reconcile the grand total back to the control figure.

INT.FM.2.c · Excel skills

Apply structure and formatting conventions and approach a timed modelling exercise in clear steps, including a simple scenario switch.

Structure is how a reviewer judges a model before reading a single formula. Typical conventions are: inputs in one place, often blue; formulas in black; links from other sheets in a third colour with a key; one formula per row copied across all periods; no typed numbers inside formulas; units and periods labelled; checks gathered on a summary. Anchoring a reference with F4 stops it moving when copied. Useful shortcuts include Ctrl plus arrow keys to move through data, F2 to edit, Alt plus equals for a sum and Ctrl plus backtick to show formulas, but speed matters less than accuracy. In a timed exercise, read the whole task, note the outputs required, sketch the layout, build inputs first, then calculations, then outputs and checks. If stuck, state an assumption, move on and return. A scenario switch uses a selector cell with CHOOSE or INDEX to pick one case's inputs. The usual mistake is to start typing before planning.

WORKED EXAMPLE: A THREE-SCENARIO REVENUE EXERCISE

In a timed test you are asked to project three years of revenue for an invented bottled-water business. Year 0 volume is 100,000 units and the price is 24.00. Growth per year: low case volume 2% and price 0%; base case volume 5% and price 3%; high case volume 8% and price 4%. Show the structure and the year-3 revenue for each case.

Answer: Year-3 revenue is 2,546,899 in the low case, 3,035,923 in the base case and 3,400,811 in the high case, driven by one selector cell and one formula per row.

Interview tip: Walk the sequence aloud: read the task, plan the layout, inputs, calculations, outputs, checks. Say that you state assumptions and keep every number in a labelled cell.

Summary of the Charta interview-preparation topic. Companies and figures in the examples are invented. Draft content, not yet expert reviewed.