Modelling

The errors we find most often in financial models

Common mistakes in timing, tax and debt calculations, and how to catch them before a lender does.

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Financial models drive decisions worth hundreds of millions, yet most contain errors. Few are spectacular. The common ones are small and structural: a period offset by one, a tax loss that disappears, a unit converted twice. Individually they move the answer by a few percent. Together, or in the wrong place, they can change the decision.

These are the errors we see most often when reviewing models, grouped by where they occur.

1. Timing

- Discounting conventions applied inconsistently, for example mid-year discounting for cash flows but end-year for the terminal value.
- Construction start, commercial operation and debt repayment dates offset by one period, which shifts every cash flow that follows.
- Annual models used for projects where cash flows move within the year, such as construction drawdowns or semi-annual debt payments.
- Ramp-up periods ignored, so the project reaches full output in its first year of operation.

2. Real and nominal mixed

- Costs escalated with inflation while prices are held flat, or the reverse, which steadily distorts margins.
- Nominal cash flows discounted at a real rate, which overstates value, or real cash flows discounted at a nominal rate, which understates it.
- Inflation applied twice: once in the price deck and again through an escalation factor.

3. Tax

- Tax losses not carried forward, so early losses are simply lost and later tax is overstated.
- Depreciation starting when capital is spent rather than when the asset enters service.
- Tax calculated on EBITDA rather than on taxable profit after depreciation and allowable interest.
- Withholding tax on dividends or interest left out of equity returns.

4. Debt

- Cash flow available for debt service (CFADS) defined inconsistently with the loan terms, for example before tax or before maintenance capital spending.
- Interest during construction calculated with a pasted number to avoid a circular reference, which then goes stale when inputs change.
- Cover ratios tested on the wrong period, or debt sculpted to one CFADS profile while the ratios are reported on another.
- Reserve accounts, such as a debt service reserve account, ignored even though they tie up cash.

5. Units and signs

- Thousands and millions mixed, or barrels per day used where barrels per year are needed.
- Sign conventions flipped between sheets, so a cost is added rather than subtracted.
- Currency conversions applied at the wrong rate or in the wrong direction.

6. Structure

- Hard-coded numbers inside formulas, so a change to an input does not flow through.
- Inputs scattered across calculation sheets instead of held in one place.
- Formulas that change partway along a row, usually after a copy and paste.
- Circular references enabled for the whole workbook, hiding unintended loops.

Error	Typical effect	How to spot it
Period offset by one	Shifts every cash flow; NPV moves by roughly one year of discounting	Check the first operating period against the schedule
Real and nominal mixed	Margins drift up or down each year	Plot unit price and unit cost over time
Tax losses not carried forward	Tax overstated in early operating years	Compare cumulative tax with cumulative taxable profit
CFADS inconsistent with loan terms	Debt capacity overstated	Rebuild CFADS line by line from the term sheet
Hard-coded values in formulas	Inputs stop flowing through	Search formulas for embedded numbers

How to catch them

Most of these errors are caught by a small set of habits. Keep all inputs in one place, clearly marked. Use one consistent formula across each row. Build integrity checks that flag when the balance sheet does not balance, when cash does not reconcile, or when sources of funds do not equal uses. Test the model by changing one input at a time and checking that the result moves in the expected direction and by a plausible amount. Keep a change log. And before the model goes to a board, lender or counterparty, have it reviewed by someone who did not build it. None of this is complicated. It is simply discipline, applied consistently, and it is far cheaper than finding an error after the decision has been made.

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