

Homework — Book Values, Market Values, Inflation, and Currency

Optional. Worked solutions are on the website

Practice problems

5.1

1. Explain in three sentences why accountants use historical cost even though it produces figures that can be badly wrong as measures of value.
2. A company's book equity is ₦51M. Its warehouse is carried at ₦12M and would sell for ₦280M; its inventory is carried at ₦40M but 15% of it is obsolete and worth nothing. Estimate the firm's equity on a market basis, stating any assumption you make about the remaining items.
3. A bank is deciding whether to lend to the firm in question 3. Describe how the decision differs depending on whether the bank uses book or market values, and say which the bank should use and why.

5.2

1. List four off-balance-sheet assets you would expect a private hospital to have, and for each name the specific cash flow it produces or protects.
2. A firm's sales are ₦120M at a 35% gross margin from 60 customers. You estimate rebuilding the base would take two years, winning half in year one, with ₦5M per year of extra selling cost. Estimate the undiscounted replacement cost of the customer base.
3. An analyst values a firm's brand at ₦200M "because the name is well known." Explain what is wrong with this and describe what evidence would make the figure defensible.

5.3

1. Explain why the book value of debt is usually close to its market value for a healthy firm, and name two circumstances in which it would not be.
2. A colleague says a listed company is undervalued "because investors are being irrational." Rewrite this as a defensible claim, specifying what would have to be true.
3. A firm issues ₦300M of equity and uses it to repay ₦300M of debt. Sketch the market-value balance sheet before and after, and state what happens to the value of the remaining claims and why.

5.4

1. A firm requires a 7% real return. Inflation is 15%. Compute the nominal rate it should use to discount nominal cash flows.

2. A project produces ₦50M of purchasing power per year for four years. The real required return is 9% and inflation is 20%. Compute the present value using the real approach, then verify it using the nominal approach.
3. Using the same project, compute the present value if an analyst mistakenly discounts the flat ₦50M figures at the nominal rate. State the percentage error and say in which direction it biases investment decisions.
4. Explain why tax makes it easier to work in nominal terms, referring specifically to depreciation allowances.

5.5

1. Classify each exposure: (a) a \$200,000 invoice payable in 60 days; (b) a Kenyan parent consolidating a Ugandan subsidiary; (c) a domestic hotel whose guests are mostly foreign tourists; (d) a \$2M loan on a firm with naira revenues.
2. A firm reports a large translation loss and its share price is unaffected. Give the most likely explanation.
3. Describe a business in your own country that would gain from a 40% depreciation of the local currency, and one that would lose. For each, state which of the three exposures dominates.

5.6

1. The same firm has operating income of ₦34M, naira interest of ₦14M, and pays 8% on the dollar loan. Compute times interest earned before and after the move.
2. A firm is offered a dollar loan at 8% or a naira loan at 26%. The naira is expected to depreciate 15% per year. Compute the approximate naira cost of the dollar loan and state which is cheaper. Then name two reasons a firm might still prefer the naira loan even if the dollar loan is cheaper on this calculation.
3. A firm has revenue of ₦500M and cost of goods sold of ₦380M, of which 45% is dollar-denominated. The dollar rises 60% against the naira. Compute the new cost of goods sold and the new gross profit, and the price increase needed to restore the original gross margin percentage.
4. A Ghanaian importer of building materials has book assets of GH¢48M against liabilities of GH¢55M. Its warehouse is carried at GH¢12M after depreciation and would fetch about GH¢34M today, and it holds an exclusive distribution agreement that no accounting standard permits it to record at all. Compute book equity and approximate market equity. Then explain in five sentences how a company in this position can be insolvent on its book balance sheet, solvent on a market-value basis, and still fail.