CHAPTER 24

FINANCIAL MANAGEMENT AND INVESTMENT DECISIONS

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ABSTRACT

Enterprise finance concerns the consequential allocation of money across time, claims and uncertain futures. An investment may exhibit an attractive expected return yet threaten solvency; cheap borrowing may increase financial distress; and substantial reported profit may coexist with a shortage of cash. This chapter develops an integrated, critical account of financial management and investment decisions through twelve approved domains: financial objectives, funding, discounting, capital budgeting, financing structure, working capital, forecasting, distributions, portfolio risk, valuation, SME finance and emerging ethical questions. A transparent, purposive synthesis of seminal corporate-finance scholarship, methodological critiques and official Rwandan secondary evidence establishes the conceptual foundations and institutional boundaries. Two explicitly hypothetical Rwandan investment alternatives are evaluated with reconciled net present value, internal rate of return, profitability index, payback and sensitivity calculations. A separate cash-conversion-cycle model and leverage stress case demonstrate the divergence between value, liquidity and debt-service capacity. Evidence from Rwanda's 2024 enterprise survey and MSME FinMap is placed alongside international empirical scholarship without extrapolating household financial access to corporate creditworthiness. Original decision instruments integrate project-specific cash flows, financing constraints, risk, stakeholder protection and review triggers. The central argument is that defensible finance is neither the mechanical maximization of a valuation metric nor the unconditional avoidance of debt. It is accountable intertemporal decision-making subject to evidentiary, contractual, operational and human constraints. Proposed integrative relationships remain conceptual, not newly validated causal findings.

Keywords: financial management; capital budgeting; net present value; cost of capital; capital structure; working capital; liquidity risk; corporate valuation; SME finance; Rwanda.

LEARNING OUTCOMES AND CHAPTER ROADMAP

After studying this chapter, readers should be able to (LO1) distinguish liquidity, profitability, solvency, economic value and stakeholder accountability; (LO2) calculate and interpret present values, future values, annuities, real and nominal discount rates; (LO3) compare investments using NPV, IRR, profitability index and payback while diagnosing conflicting rankings; (LO4) estimate and critically qualify costs of financing and leverage-related distress; (LO5) construct and interpret a cash-conversion-cycle and cash-forecast model; (LO6) evaluate financial projections, distribution policies, portfolio risk and enterprise valuation under uncertainty; (LO7) appraise Rwandan MSME financing constraints against international scholarly

evidence without ecological inference; and (LO8) defend an ethically responsible cross-functional investment decision with transparent assumptions, sensitivity analysis and monitoring commitments.

The intellectual sequence moves from financial purpose and funding (24.1–24.2), through temporal valuation and investment selection (24.3–24.4), the cost and structure of finance (24.5), operating liquidity and forecasts (24.6–24.7), allocation to owners (24.8), uncertainty and enterprise valuation (24.9–24.10), and the distinct financing problem of smaller and growth enterprises (24.11). Emerging instruments and responsibilities (24.12) lead to an integrated Rwandan case (24.13), comparative and theoretical synthesis (24.14), learning and assessment resources (24.15) and references (24.16). Financial reporting and management costing were developed in Chapters 22 and 23. Financial institutions and payment-system architecture belong to Chapter 25; taxation, audit and specialist controls belong to Chapter 26.

24.0 INTRODUCTION: A PROFITABLE PROJECT CAN STILL BANKRUPT THE ENTERPRISE

Imagine a Kigali producer of shelf-stable food products considering two investments. A faster packaging line promises larger contribution margins, while a distribution redesign offers smaller but earlier cash receipts. The managing director favors the line because expected accounting profit is higher; the operations manager warns that imported spare parts may delay commissioning; the finance manager is concerned about the initial cash requirement, foreign-currency exposure and a loan whose principal must be repaid long before the assets cease to be productive. A prospective lender requests collateral, a documented cash-flow forecast and evidence of customers' capacity to pay. Whether either project creates value cannot be settled from its anticipated sales, cost per unit, or headline interest rate. This is a deliberately constructed teaching case, not an account of an identifiable enterprise.

Financial management organizes the acquisition, allocation, preservation and distribution of financial resources to meet legitimate organizational purposes over time and under uncertainty. Its core decisions concern *investment* (which assets and activities merit resources), *financing* (who supplies capital, on which terms and with which claims), and *liquidity* (how obligations will be discharged when due). Distribution and financial risk management connect these decisions to owners, workers, customers, suppliers, creditors and the public. Profitability measures revenues against expenses over an accounting period; liquidity concerns the availability of settlement resources at particular dates; solvency concerns the ability of the enterprise to meet its obligations over a longer horizon; and value concerns what a defensible assessment assigns today to future benefits, costs and risks. These constructs overlap but are not substitutes.

The problem is epistemic as much as mathematical. Discounted cash-flow methods produce exact numbers only after uncertain revenues, costs, timing, terminal values, inflation, funding terms and required returns have been entered. What looks like precision is therefore conditional on propositions that deserve scrutiny. Finance also embodies distributive choices: suppliers may finance a buyer through delayed payment, employees may absorb the effects of austerity, and a new equity investor may dilute existing owners. The chapter adopts a bounded principle of value creation: positive expected financial surplus is a necessary consideration for commercial sustainability but does not license illegality, deceptive disclosure, avoidable injury or the unjust transfer of risk. Financial analysis must be technically defensible and institutionally legitimate (Jensen & Meckling, 1976; Myers & Majluf, 1984).

24.0.1 Analytical approach and evidence limitations

This chapter uses a transparent, targeted documentary synthesis rather than a systematic review or original field study. Seminal finance articles are selected for their foundational propositions and tested against subsequent competing explanations and empirical examinations. Documentary evidence from the National Institute of Statistics of Rwanda (NISR) and Access to Finance Rwanda (AFR) supplies contextual facts.

Financial calculations are constructed for instruction, show their underlying assumptions and do not represent observed enterprise accounts or projected national outcomes. The approach permits conceptual comparison and numerical demonstration, not new causal identification. The evidence cut-off is 2 November 2026; dynamically updated regulations and market quotations require rechecking at any later implementation date.

24.1 OBJECTIVES AND SCOPE OF FINANCE

24.1.1 Financial performance as a plural problem

The traditional corporate-finance objective is frequently stated as maximizing shareholder wealth through decisions that increase the present value of owners' residual claims. It is analytically stronger than a simple accounting-profit target because the value of a claim depends on timing, risk and the opportunity cost of capital. Nevertheless, shareholder value is a disputed sufficient account of enterprise responsibility. Contracting is incomplete, affected parties have unequal bargaining power, and market values may fail to incorporate environmental damage, unsafe working conditions or information withheld from customers. Agency theory explains how dispersed owners may be disadvantaged by managers whose incentives differ from theirs, but it cannot alone establish that every cost to nonshareholders has been internalized in prices (Jensen & Meckling, 1976).

Several objectives must therefore be distinguished. *Liquidity preservation* requires enough available funds to discharge obligations when due, including payroll and supplier payments. *Profitability* supports replenishment of capital and enterprise continuity but depends on accounting classification and measurement. *Solvency* requires a sustainable relationship between commitments and available or recoverable resources. *Risk discipline* concerns exposure to adverse outcomes and the costs of bearing or transferring them. *Financial flexibility* preserves options to respond to opportunities and shocks. *Accountability* requires that the allocation and distribution of financial resources be explainable, verifiable and contestable. These are partially complementary and partially conflicting objectives: large cash reserves protect liquidity but may reduce available investment; high leverage can enhance equity returns in good states while making financial distress more likely.

A defensible finance mandate consequently begins with mandatory constraints (legal payments, worker safety, enforceable contracts and minimum liquidity), specifies the decision criterion appropriate to the remaining feasible alternatives, and documents how uncertain future claims are treated. For a commercial corporation, risk-adjusted net present value is a useful primary capital-allocation criterion. For a nonprofit or public enterprise, benefits that are not market-priced require a separate, explicit social appraisal rather than a fictitious monetary estimate masquerading as a market cash flow. Neither formulation eliminates judgment about what counts as an admissible outcome.

24.1.2 Decision rights, horizon and financial governance

Finance is performed by more than the chief financial officer. Sales determines contractual credit terms; procurement negotiates payment obligations; operations commits to inventories and equipment; HR shapes payroll and pension commitments; the board defines permissible leverage and distributions; and lenders impose covenants. The finance unit should articulate a common monetary account of these commitments while preserving the distinction between accounting forecasts and cash movements. A board-approved delegated-authority schedule ought to identify who can propose a project, validate its assumptions, assess conflicts, authorize borrowing, sign contracts, revise baselines and monitor post-investment performance.

Temporal inconsistency is a central governance risk. Managers evaluated on current-year earnings may reject a durable but initially costly investment or accelerate revenue recognition, while owners needing immediate distributions may press a company to compromise its cash reserve. The solution is not to eliminate performance metrics but to make horizon, uncertainty and decision responsibility explicit. Finance decisions should be reviewed when materially new information arrives, yet not opportunistically relabeled after unfavorable outcomes. The board therefore needs a contemporaneous decision log containing alternatives considered, assumptions, quantified downside cases, stakeholder constraints and the planned ex post review.

24.1.3 Financial purpose: valuation, legitimacy and the limits of a single objective

The disagreement over financial purpose is not merely terminological. Jensen (2001) argues that organizational choice requires a sufficiently determinate objective and regards long-run total firm value as a discipline against arbitrary managerial trade-offs. His position is stronger than an unqualified demand for this quarter's shareholder return: it insists that value over time depends on credible relationships with employees, customers and financiers. Nevertheless, the inference from value measurement to moral sufficiency rests on assumptions about prices, enforceable rights and internalized externalities. If an unsafe factory can sell output without bearing the full expected cost imposed on its workers, a high financial NPV does not establish that the investment creates net social welfare. Nor does aggregate monetary compensation settle whose rights may be traded away. The analytic value of a common monetary objective must therefore be distinguished from an unrestricted moral permission to pursue it.

Hart and Zingales (2017) complicate the simple opposition between shareholder and stakeholder claims. Where shareholders possess preferences about outcomes that markets do not fully price, maximizing the market value of their investments may not maximize their welfare. This analysis helps explain why a genuinely informed shareholder body could favor limits on harmful activity even where a narrow transaction-price model predicts a financial sacrifice. Yet shareholder preferences cannot by themselves extinguish the independent legal claims of employees, creditors or affected communities. The appropriate governance procedure distinguishes (a) obligations that constrain permissible alternatives, (b) empirically estimated monetary consequences of remaining choices and (c) legitimate decisions over objectives that cannot be monetized without controversy.

Financial discipline also requires a theory of evidence. Prices and costs are measurable only through instruments, conventions, forecasts and institutions; forecasts are not independently verifiable facts. An opportunity cost is an alternative forgone, but identifying that alternative requires knowledge of feasible uses of resources, not a generic market rate. A convincing financial memorandum therefore documents the counterfactual, the uncertain mechanisms connecting actions to cash, the claimants who bear unfavorable states and the authority under which the decision is made. This is a more demanding conception of accountability than the production of a single apparently precise present value (Jensen, 2001; Hart & Zingales, 2017).

24.2 FINANCIAL MARKETS AND FUNDING SOURCES

24.2.1 The economic substance of capital claims

Equity represents a residual claim after prior obligations, typically accompanied by ownership, participation or governance rights. Common equity absorbs losses before senior debt and does not ordinarily require fixed periodic repayment, but investors demand compensation for residual risk and founders may experience dilution. Debt creates contractual interest and principal obligations with specified seniority, security and default consequences. Retained earnings are profits not distributed and represent internally

available funding only to the extent that profits have generated cash not already committed elsewhere. Trade credit arises when suppliers permit payment after delivery, effectively financing part of the operating cycle. Leasing exchanges rights to use an asset for periodic commitments and may shift some risks while creating enduring liabilities. Grants and concessional funds may support activities with public or developmental benefits but must be appraised against eligibility, reporting restrictions, matching requirements and continuation risk.

A financing decision is not exhausted by comparing quoted annual rates. The economic terms include origination fees, collateral valuation and enforcement, mandatory deposits, repayment profile, currency denomination, floating-rate reset, covenants, prepayment penalties, disclosure duties and the loss of managerial discretion. For example, a nominal 14% loan with an upfront fee and short amortization can place more pressure on cash than an apparently dearer loan with grace periods and matched maturity. Comparing annual percentage measures requires agreement on the compounding and fee convention; comparing bank debt with equity requires recognizing that equity's expected return is not a promised coupon. Supplier credit may be expensive where early-payment discounts are forgone, and excessive delay can simply export distress to smaller suppliers.

24.2.2 Capital-market imperfections and financing hierarchies

In an idealized complete market, financing arrangements can be separated analytically from investment opportunities. In real markets, adverse selection, moral hazard, costly contracting, bankruptcy expenses, collateral scarcity and limited verification create differences between internal funds, debt and equity. Akerlof (1970) demonstrates the general problem of adverse selection where asset quality is privately known. Myers and Majluf (1984) specify a corporate-finance mechanism: equity issuance may be interpreted as a signal that informed insiders perceive shares as overvalued, so even a positive-value investment might be forgone. This does not imply that every equity issue is adverse selection or that debt is always preferable. Rather, the predicted hierarchy depends on information asymmetry, asset tangibility, investment opportunities and the firm's life cycle.

Berger and Udell (1998) describe a financial growth-cycle perspective in which funding mechanisms change with firm age, size, information transparency and financing needs. Small or young firms may rely more on owner savings, trade credit and relationship lending, while more established firms can obtain audited financial histories, collateral and access to formal securities. The theory is conditional rather than a fixed staircase: a technology venture with scalable intellectual property may seek equity early, while a mature family business may never issue publicly traded shares. Financing constraints are also difficult to diagnose statistically. Fazzari et al. (1988) associated investment–cash-flow sensitivities with restricted access to external finance; Kaplan and Zingales (1997) demonstrated why high sensitivity by itself is not a reliable measure of the severity of constraints. This dispute warns against treating an observable ratio as a uniquely identified causal mechanism.

24.2.3 A funding-source decision matrix

Funding source	Principal economic attraction	Principal exposure	Decision evidence
Retained cash	No issuance or lender negotiation	Opportunity cost; depleted reserve	Free cash after committed obligations
Owner or new equity	Loss-absorbing capital; no fixed repayment	Dilution; governance conflicts	Valuation, rights, exit terms and governance
Term loan	Defined amount, maturity and covenants	Debt service, collateral, refinancing	Cash coverage, covenant headroom, fees
Revolving credit	Liquidity aligned to short-cycle needs	Renewal and floating-rate risk	Borrowing base and rolling liquidity plan
Trade credit	Can match procurement and sales cycle	Hidden discount cost; supplier harm	Effective cost and payment discipline
Lease	Access to productive asset without immediate full purchase price	Contractual rigidity and total cost	Present value of payments and residual risk
Grant or concessional finance	Reduced private funding burden where eligible	Eligibility, reporting, discontinuity	Binding conditions and additionality

Table 24.1. Financing alternatives and the evidence required for responsible selection. Source: Author's synthesis of corporate-finance theory; categories are not jurisdiction-specific legal or accounting classifications.

24.2.4 Credit rationing, contractual design and the true price of trade credit

A lender does not necessarily clear a credit market simply by increasing the quoted interest rate. Under information asymmetry, an increase in the rate may alter which applicants accept the loan or incentivize riskier projects, so expected lender return can decline even as the contractual rate rises. Stiglitz and Weiss (1981) formalized a mechanism through which credit rationing can persist in equilibrium. Their model is not a claim that every rejected applicant is creditworthy. It clarifies why collateral, reliable reporting, loan design and lender knowledge influence credit supply, and why policy interventions cannot be evaluated from the nominal rate alone. The competing possibility, that a proposed activity genuinely lacks sufficient expected returns, must remain open in any diagnosis.

The contract is part of the technology of financing. Secured loans redistribute loss through specified asset claims; personal guarantees can transfer enterprise losses to a family; equity negotiations allocate control and dilution; and supplier financing can incorporate valuable transactional information. Petersen and Rajan (1997) show why suppliers may supply credit when formal finance is restricted and why suppliers with stronger access to capital can extend credit to customers. This explains the prevalence of trade credit without establishing that delaying payment without agreement is a legitimate financing strategy. A board reviewing funding sources must therefore evaluate the financial equivalent of their full contracted terms, the availability of enforcement and the distribution of downside risk.

Consider the hypothetical trade terms '2/10, net 30': the buyer may deduct 2% by paying within 10 days or otherwise pays in full at day 30. By declining the discount, the buyer effectively pays RWF 2 for an additional RWF 98 of twenty-day financing. The simple annualized cost is (0.02/0.98) × (365/20), or approximately 37.24%; the effective compounded annual rate is (1 + 0.02/0.98)^(365/20) − 1, approximately 44.59%. These rates are illustrative rather than current Rwandan credit prices. They demonstrate that nominally interest-free supplier finance can be very costly, while the choice to take a discount must still be reconciled

with minimum cash reserves and other commitments. A financing comparison that ignores embedded contractual prices is not a true comparison of capital costs.

24.3 TIME VALUE OF MONEY

24.3.1 Why amounts at different dates are not equivalent

One franc available now can finance immediate consumption, discharge a costly obligation or be invested; the same nominal franc receivable later lacks these options and may lose purchasing power. Discounting converts dated cash flows into a comparable present-value unit at an explicitly chosen required return. With end-of-period compounding, the future value of an amount PV after n periods at periodic rate r is FV = PV(1 + r)^n, and its present value is PV = FV/(1 + r)^n. A stream of cash flows C_t beginning at time t = 1 has PV = sum[C_t/(1 + r)^t], with separately stated treatment of any cash at t = 0. Periods and rates must agree: monthly receipts require a monthly rate, not an annual rate inserted unchanged into a monthly formula.

For example, an illustrative RWF 10 million invested at an effective annual 12% becomes 10(1.12)^3 = RWF 14.04928 million after three years. Conversely, RWF 14.04928 million due at year three has a present value of RWF 10 million at that rate. The interpretation is not that 12% is the actual market return available to this enterprise. It is a hypothetical opportunity-cost assumption chosen to demonstrate the transformation. Interest compounding m times per year at a quoted nominal annual rate j gives an annual effective rate of (1 + j/m)^m - 1, assuming periodic compounding on those terms. At j = 12% compounded monthly, the effective annual rate is approximately 12.683%, not 12%.

For a level end-of-period annuity A paid for n periods at rate r, PV = A[1 - (1 + r)^(-n)]/r when r is nonzero. Thus five annual payments of RWF 5 million discounted at 12% have PV = 5[1 - 1.12^(-5)]/0.12 = approximately RWF 18.024 million. An annuity due with payments at the beginning of each period is worth an additional factor (1 + r) relative to the same ordinary annuity, assuming identical payment counts. A growing perpetuity formula, PV = C_1/(r - g), requires r > g and cash flow growth g that remains economically plausible indefinitely. It cannot justify an arbitrary terminal valuation where growth exceeds the economy's feasible productive capacity.

24.3.2 Nominal, real, after-tax and currency consistency

A nominal discount rate includes expected inflation whereas a real discount rate is expressed in constant purchasing-power terms. Their exact relation is (1 + r_nominal) = (1 + r_real)(1 + inflation). If nominal return is 16% and expected inflation is 6%, the implied real rate is (1.16/1.06) - 1 = approximately 9.43%. Expected nominal cash flows should be discounted at a consistent nominal rate; constant-price real cash flows at a real rate. Similarly, cash flows after corporate tax should generally be matched with a compatible after-tax discount-rate framework, with tax rules verified rather than assumed. A RWF forecast cannot safely be discounted using an unadjusted foreign-currency required return merely because an investor prefers to report in dollars. Exchange-rate expectations, currency risks, and the denomination of financing and receipts must be reconciled explicitly.

24.3.3 Discount rates are assumptions requiring explanation

The discount rate is not simply the bank's stated borrowing rate. It reflects time preference, opportunity cost and priced risk appropriate to the claim and cash flow under analysis. Sharpe's (1964) capital asset pricing model provides a benchmark in which expected return is related to systematic market risk, not total volatility, under restrictive assumptions including an integrated investable market and homogeneous expectations. Where securities are thinly traded, enterprises are unlisted, borrowing and lending rates diverge and owners cannot diversify freely, the direct application of an observed stock-market beta becomes

especially contentious. Country risk, small-business concentration, illiquidity and contract enforceability may affect a required return, but adding multiple arbitrary premia can double-count the same uncertainty. A transparent analysis should report its rate derivation, currency, date, comparators, sensitivity range and model limitations (Damodaran, 2026; Sharpe, 1964).

24.3.4 Discounting under uncertainty and across generations

Discounting contains at least three distinct judgments that should not be conflated: the mathematical conversion of dated monetary amounts, the empirical estimation of the required return on a risky claim and the ethical significance attached to people affected at different dates. The first is an accounting identity once the rate is specified; the second is a contestable pricing problem; the third cannot be deduced from traded-security returns alone. Using the same high private hurdle rate for an ordinary machine replacement and for irreversible environmental harm can make severe future consequences appear unimportant without demonstrating that future persons or ecosystems matter less. Climate and other long-lived projects may require separate social appraisal, explicit distributional weighting or noncompensable safety constraints rather than a mechanically transplanted corporate WACC.

Expected-cash-flow and discount-rate approaches also require care over correlated risks. A risk already reflected in probabilities or certainty-equivalent cash flows must not be charged repeatedly through arbitrary risk premia. In a state-contingent formulation, value is the sum of dated payments multiplied by appropriate state prices, a conceptually useful benchmark even where those prices cannot be observed. When currency markets are incomplete or exchange controls and hedging instruments are unavailable, a forecast in foreign currency should be translated under explicit exchange-rate scenarios or valued consistently in that currency. Disclosing the method, rather than asserting a single 'correct' discount rate, preserves the distinction between calculational precision and knowledge.

24.4 INVESTMENT APPRAISAL

24.4.1 Relevant incremental cash flows

Capital budgeting assesses whether committing resources today generates sufficient future incremental benefits. A defensible model identifies the *difference* between the enterprise's cash flows with and without the investment. It includes equipment purchase, installation and training, incremental sales receipts, operating cash expenses, working-capital commitments, maintenance, asset disposal, closure costs and recoverable working capital when applicable. Sunk expenditures already made and irrecoverable do not enter the forward-looking comparison, although their historical occurrence may explain constraints. Opportunity costs, including the market value of a warehouse or capacity used by the project, do matter. Allocated head-office overhead unrelated to the investment does not become a new cash cost merely because an accounting system assigns it to the project. Taxes and depreciation-related allowances require jurisdiction-specific verification; an illustrative teaching model that excludes tax must say so.

The net present value is NPV = -I_0 + sum[C_t/(1 + r)^t] + TV_n/(1 + r)^n, where I_0 is the time-zero commitment; C_t are period-specific incremental net cash flows exclusive of the terminal amount; and TV_n is net disposal or terminal recovery at the end of period n. When financing and project cash flows are separated, NPV should be calculated for the operating asset using an appropriate asset discount rate rather than subtracting loan repayments from already finance-adjusted operating cash flows and then discounting again at a financing-loaded WACC. The principle avoids double-counting financing costs. A positive NPV indicates an expected financial surplus relative to the chosen opportunity cost, conditional on the inputs; it does not prove that the cash forecast will occur or that the project is legally or operationally feasible.

24.4.2 IRR, payback, profitability index and conflicts

The internal rate of return (IRR) solves 0 = sum[CF_t/(1 + IRR)^t] for the full signed sequence of dated cash flows including the initial investment. In conventional projects with one initial outflow followed by positive inflows, a unique economically interpretable IRR commonly exists. With multiple sign changes, mathematical solutions may be multiple or absent. IRR is a rate, so it can favor a smaller project even where a larger mutually exclusive project produces more total value. Comparisons are especially unreliable when project timing, scale or reinvestment assumptions differ. The modified IRR can state financing and reinvestment assumptions explicitly but does not displace NPV as the value measure.

Simple payback records the elapsed time until cumulative nominal cash receipts recover the investment; discounted payback uses discounted receipts. Both emphasize liquidity and downside exposure but ignore some or all post-payback value and lack a direct wealth-maximization justification. The profitability index equals PV of future net inflows divided by initial investment for a simple single-outlay project; under capital rationing it can rank small projects usefully, but indivisible mutually exclusive investments require an explicit portfolio optimization or full NPV comparison. Graham and Harvey's (2001) survey of 392 US financial executives found substantial differences between large-firm and smaller-firm use of discounted techniques, illustrating that classroom normative criteria and reported managerial routines can diverge. The survey cannot establish which procedures Rwandan enterprises currently use.

24.4.3 Risk, flexibility and post-completion evaluation

Scenario analysis replaces one deterministic forecast with internally consistent adverse, central and favorable pathways. Sensitivity analysis varies a specified assumption, such as output or the discount rate, while holding other assumptions fixed. Probabilistic analysis uses probability distributions and dependencies, but assigning arbitrary probabilities gives only an appearance of rigor. Decision trees can value sequential decisions where management may expand, defer, contract or abandon after obtaining information; Myers (1977) showed why growth opportunities resemble options and how debt may distort future investment incentives. Real options are not free: flexibility must be technologically and contractually feasible, managers must have decision rights to exercise it, and delays can forfeit markets.

Ex post review compares the original signed investment case with observed operating volumes, cash timing and costs. It separates forecast errors from changes in conditions and unauthorized scope changes. Repeating a profitable-looking NPV with revised assumptions after a project fails does not demonstrate that the initial decision was sound. The appropriate question is whether the information and alternatives available at authorization justified the commitment, and which assumptions should be revised for future decisions.

24.4.4 Capital rationing, incremental rankings and the value of waiting

The selection of a project becomes a constrained optimization problem when capital is scarce. For independent, divisible projects with one initial outlay and no other binding constraints, a profitability index may help approximate the allocation of an investment budget. Real enterprises usually face indivisibilities, mutually exclusive alternatives, multi-period resource requirements, capacity interactions and minimum-liquidity conditions. The correct problem is then to choose a feasible combination that maximizes total expected NPV under explicit budget and operating constraints. A ratio ranking can fail because the highest-value feasible combination may include a lower-index project that makes fuller use of the available budget. Scarcity at one date also cannot be solved by combining nominal budgets across years without respecting the timing of required cash.

Traditional discounted cash flow presumes a fixed implementation plan, whereas many investments embed managerial options. A packaging line can be piloted before a full acquisition, capacity can be leased for a trial

period, and expansion can be contingent on verifiable customer orders. Myers (1977) explains why options over future growth and investment interact with debt-related incentives. The additional value of waiting derives from information arriving before an irreversible commitment; it is reduced by the cost of delay, the possibility of losing contracts or the inability to scale later. Valuing flexibility requires specifying the future decision, observable trigger, exercise cost and governance authority. Without those elements, a claim that 'management flexibility' raises NPV amounts to a residual optimism adjustment.

A further technical distinction concerns the valuation of financing side effects. Weighted-average cost of capital can be defensible when the financing mix and associated interest tax shields remain sufficiently stable and the project has the risk profile implicit in that rate. Adjusted present value (APV) instead separates the unlevered project value from the present value of identifiable financing effects, including supported tax shields and financing costs. The methods should not be mixed indiscriminately. If a debt subsidy is added as a financing benefit to an APV calculation, the same benefit must not also be embedded through an artificially low WACC. The appropriate method is the one whose assumptions most transparently match the project's financing policy and the available evidence.

24.5 COST OF CAPITAL AND FINANCING STRUCTURE

24.5.1 The Modigliani–Miller benchmark and its boundaries

Modigliani and Miller (1958) established a deliberately stringent benchmark: in a frictionless market under their assumptions, merely rearranging debt and equity claims does not create operating assets or alter total firm value. The theorem's enduring contribution is not a claim that actual financing choices never matter. It identifies the frictions that must be specified before arguing that one financing mix improves value. Corporate taxes, personal taxes, expected financial distress, agency conflicts, asymmetric information and transaction costs each relax an assumption of irrelevance. Their importance depends on jurisdiction and enterprise characteristics, so an alleged universal 'optimal debt ratio' is not supported by the benchmark.

Trade-off theory proposes that firms balance the benefits of borrowing, which may include tax advantages under applicable law and reduced free-cash-flow agency costs, against expected distress and other costs. Pecking-order theory predicts preferences among internal funds, debt and external equity under information asymmetry (Myers & Majluf, 1984). Agency theory identifies both the potential discipline of fixed contractual payments and the tendency of shareholders and creditors to disagree over risk-taking once debt is outstanding (Jensen & Meckling, 1976; Myers, 1977). Market-timing approaches examine the persistence of financing choices made when relative security valuations were favorable (Baker & Wurgler, 2002). These approaches offer competing mechanisms rather than an additive checklist, and observed leverage can reflect historical constraints rather than an intentionally selected optimum. Fama and French (2002) show why several leverage and dividend patterns simultaneously support and challenge simple versions of competing theories.

24.5.2 Weighted-average cost of capital and project risk

The weighted-average cost of capital (WACC) for a simplified corporation with market-valued equity E and debt D is WACC = [E/(D + E)]r_e + [D/(D + E)]r_d(1 - T), where r_e is the required equity return, r_d the relevant marginal pre-tax debt cost and T a marginal tax rate applicable to interest deductibility. This expression assumes tax deductibility where allowed, a stable financing policy consistent with the cash flows and discount-rate method, correctly observed market values, and risk characteristics comparable to the project being valued. The expression is not an instruction to assume deductions without evaluating the applicable law. Costs of preference shares or other financing claims require separately modeled terms.

As a purely pedagogical illustration, suppose the target funding mix is 60% equity and 40% debt, the required equity return is 22%, the borrowing cost is 14%, and an assumed effective marginal tax rate for interest-shield purposes is 25%. WACC = 0.60(22%) + 0.40(14%)(0.75) = 17.4%. This *illustrative* 25% is neither a statement of Rwanda's statutory corporate-income-tax rate nor a substitute for verifying deductibility. If the project bears systematically different risk from the enterprise's existing operations, applying the corporate WACC can misprice the project. Equally, a fixed 17.4% rate over several years assumes away future changes in capital structure, refinancing and macroeconomic conditions.

The cost of equity is especially uncertain for unlisted firms without traded returns. A CAPM estimate r_e = r_f + beta(E[R_m] - r_f) uses a risk-free benchmark, beta and market risk premium, each requiring a consistent currency and time horizon. An illiquid firm's owner may be highly undiversified, making market-beta reasoning incomplete for the owner's consumption and survival concerns. A 'build-up' rate that adds country, size and company-specific premia must specify whether uncertainties are reflected in forecast cash flows already. Methodological prudence requires presenting a plausible range, testing the investment decision across that range, and explaining the limitations of every proxy. Damodaran's (2026) publicly documented country-risk methods illustrate possible comparative inputs, not a universal discount rate for Rwanda.

24.5.3 Leverage, repayment capacity and financial distress

An enterprise can be economically valuable yet fail because cash arrives later than contractual principal and interest payments. Debt-service coverage is therefore as important to a lender as expected NPV. A common measure is DSCR = cash flow available for debt service / scheduled principal and interest, with the numerator carefully defined for the contract and period. EBITDA is sometimes used as a starting proxy but is not itself cash available to service debt: working-capital expansion, maintenance capital expenditure, tax payments and cash restrictions can materially reduce capacity. Interest coverage (for example, EBIT/interest) likewise omits principal repayments and may conceal short-term liquidity pressure.

Borrowing also transfers risk asymmetrically. If asset returns exceed borrowing costs, equity returns may increase; if they fall below, the same fixed debt claim amplifies owners' losses. A covenant breach may restrict dividends, trigger costly renegotiation or precipitate acceleration even before book liabilities exceed assets. Debt maturity should be compared with the economic duration and cash pattern of financed assets, and foreign-currency borrowing assessed against actual currency inflows rather than nominally low coupons. Financial flexibility is an economic resource because avoiding distress preserves jobs, supplier relationships, customer trust and investment options.

24.5.4 What empirical leverage studies do, and do not, settle

The theoretical debate over leverage cannot be decided by observing that profitable firms borrow relatively little. A static trade-off account might predict that profitable companies can use more debt because distress risk is lower and tax deductions are potentially valuable, whereas a pecking-order account predicts that retained cash reduces demand for external funding. Frank and Goyal (2009), studying listed US companies, identify industry leverage, tangibility and profitability among the comparatively robust correlates of borrowing, but they also report differences across book and market leverage and do not claim that the observed associations structurally identify a universal financing mechanism. The negative relation between profitability and leverage may reflect accumulated internal funds, adjustment costs, firm-specific investment timing or other omitted forces. It is poor scholarship to infer one theory's universal truth from a cross-sectional coefficient.

For a private Rwandan enterprise, the informational problem is particularly acute because its market-valued equity and beta typically cannot be observed directly, collateral may be narrow, and lender terms can be

relationship-dependent. Substituting industry comparables from foreign listed firms provides a starting benchmark, not a measurement of a unique domestic cost of equity. Responsible financial design instead triangulates asset cash-flow volatility, contractual borrowing offers, plausible project alternatives, stress losses, controlling owners' concentration and financing constraints. The resulting capital structure may be lower than a mechanical tax-shield optimum because survival, discretion and obligations to workers and suppliers matter at the states in which repayment is most difficult (Beck et al., 2005; Frank & Goyal, 2009).

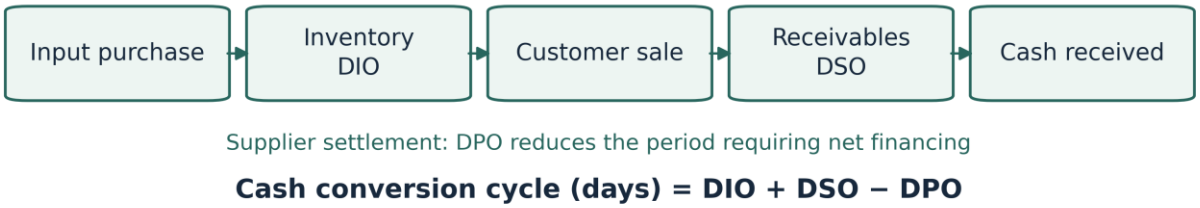
24.6 WORKING CAPITAL MANAGEMENT

24.6.1 Working capital is a temporal coordination system

Net working capital is commonly defined as current assets minus current liabilities. It is a useful balance-sheet summary but not a sufficient measure of operating liquidity because it aggregates heterogeneous items. Cash may be restricted; receivables may be impaired; inventory may be obsolete; suppliers may demand payment before customers settle invoices. Management therefore needs transaction-level timing and quality information, not merely a positive current ratio. The relevant operating cycle follows resources through purchase, inventory holding, sales on credit, collection and supplier settlement. A cash conversion cycle (CCC) relates three duration measures: days inventory outstanding (DIO), days sales outstanding (DSO) and days payables outstanding (DPO).

With annual balances used as simplified proxies, DIO = average inventory / annual cost of goods sold × 365; DSO = average trade receivables / annual credit revenue × 365; DPO = average trade payables / annual relevant purchases or cost of goods sold × 365; and CCC = DIO + DSO - DPO. The denominators should follow the underlying activity: where purchases differ materially from cost of goods sold, purchase-based DPO is preferable. Average balances are superior to year-end balances when seasonality is material. Zero, negative or unusual ratios require business-specific interpretation. A shorter CCC generally reduces funds tied to the operating cycle, but an indiscriminate reduction may compromise safe inventory buffers, customer relationships or fair supplier terms. Deloof (2003) reports an association between working-capital measures and profitability in Belgian firms, not a universally causal effect applicable to any Rwandan enterprise.

Figure 24.1. The cash-conversion cycle as an interfunctional commitment



Note. The diagram shows timing relationships rather than a requirement that every firm hold physical stock or grant customer credit. Source: Author's conceptual adaptation of the standard cash-conversion-cycle identity.

24.6.2 Cash management under uncertainty

An enterprise needs a short-horizon receipts-and-payments schedule because accrual profit cannot settle a bill. A 13-week rolling forecast can separate confirmed opening cash, invoices expected to be collected, payroll, tax dates, inventory purchases, rent, debt service and planned investments. Each inflow should be assigned a status, due date, responsible owner and probability-adjusted scenario only where justified. Cash forecasting is as much a control of information quality as an arithmetic exercise: a promised sale is not a

bank receipt, and a payment 'expected next week' may depend on a customer's own cash crisis. Cash balances may reflect transaction, precautionary and strategic needs (Bates et al., 2009); the Miller and Orr (1966) model illustrates a formal response to stochastic flows under particular assumptions, but routine implementation in a small enterprise need not require a complex stochastic optimizer.

Cash policies have distributive consequences. Financing large customer receivables can become a hidden subsidy to powerful buyers; extending supplier payments beyond agreed terms can substitute suppliers' solvency for the buyer's own; holding too little inventory may increase patient or food-system vulnerability. A responsible working-capital target should therefore minimize the economic burden of operating liquidity *subject to* payment integrity, minimum service reliability, employee entitlements and realistic contingency capacity. For a small enterprise, simple bank reconciliations, debtor aging, inventory checks and weekly cash meetings can generate more reliable decisions than an elaborate dashboard built on incomplete records.

24.6.3 Working-capital performance and responsibility register

Indicator	Operational definition	Interpretation and necessary control
DIO	Average inventory / COGS × days	Identify seasonality, obsolescence and safety stocks
DSO	Average credit receivables / credit sales × days	Verify sales mix, aging, disputed invoices and impairment
DPO	Average eligible payables / relevant purchases × days	Distinguish agreed terms from overdue suppliers
CCC	DIO + DSO − DPO	Track net financing time, not comprehensive solvency
13-week cash low point	Minimum forecast available cash	Test covenant, payroll and contingency headroom
Receivables overdue ratio	Past-due balances / eligible receivables	Verify disputes and collection practices
Liquidity buffer	Unrestricted cash + committed usable facilities	Assess actual access and borrowing conditions

Table 24.2. Operating-liquidity measure definitions. Source: Author's synthesis. The day count and transaction base must be disclosed for reproducibility.

24.6.4 Managing the cash cycle without transferring distress

Cash-cycle analysis becomes a decision instrument only after the underlying actions are identified. An apparent improvement in DSO may come from collecting legitimately overdue invoices, changing customer mix, selling receivables or withdrawing credit from low-income customers. These actions differ in cost and in consequences for growth. An apparent improvement in DIO may arise from more precise stock control, deliberate stockouts or outsourcing the stock-holding burden to suppliers. Likewise, an increase in DPO may reflect negotiated longer terms or contractual delinquency. Identical reported CCC improvements can therefore signal operational learning or the displacement of costs onto counterparties. Working-capital governance should reconcile the duration measures to collections, purchase ledgers, disputes, supplier obligations and service outcomes.

Petersen and Rajan (1997) explain the informational advantages that can underpin supplier credit, while Deloof (2003) provides firm-level evidence of association between working-capital components and profitability in a Belgian sample. Neither warrants the claim that every enterprise should minimize all inventory or extend supplier terms without limit. A responsible optimization considers marginal holding costs, expected shortage losses, collection expenses, goodwill, access to replacement inventory and the

supplier's reasonable settlement expectations. The relevant cash-cycle policy is thus an outcome of negotiated and monitored operating design, not a universal numerical target.

24.7 FINANCIAL FORECASTING AND PLANNING

24.7.1 Integrated projections and financing gaps

A coherent financial plan links volume, selling prices, variable and fixed expenses, working capital, capital expenditure, depreciation, debt financing, financing charges, tax assumptions and distributions through a connected set of projected statements. The income statement estimates performance; the projected statement of financial position reconciles assets and funding claims; and the cash-flow forecast tests whether contractual payments can be met. An increased sales forecast can simultaneously increase operating profit and create a funding gap if customer credit and inventory rise faster than supplier finance. A percentage-of-sales model may be serviceable for a first approximation, but it fails when capacity arrives in indivisible steps, fixed costs change sharply or credit policies differ across buyers.

A basic additional-funds-needed calculation can be written AFN = (A*/S_0)ΔS - (L*/S_0)ΔS - M S_1(1 - d), where A *are assets assumed to vary with sales, L* spontaneous liabilities, S_0 baseline sales, ΔS projected sales growth, M projected net profit margin and d dividend payout fraction. This expression is intentionally stylized: it treats capital structure and asset utilization in simplified ways and is unreliable where tax rules, one-off investment, uneven margins and debt amortization dominate. The discipline is to identify the model's implied financing gap and then replace approximations with a dated cash-flow schedule, not to treat AFN as a definitive bank borrowing request.

24.7.2 Forecast validity, scenarios and decision thresholds

Forecasting requires distinguishing a baseline from an optimistic target. A sales manager's quota is an aspiration, not an observed customer commitment; a supplier's quotation may expire; an import duty or interest rate used in a model can change before funds are drawn. The forecast should distinguish verified contracts, conditional forecasts and speculative opportunities. Good practice records the source, observation date, currency, forecast method, owner and sensitivity of each material assumption. Scenarios should combine plausible co-movements: weak sales may coincide with slower collections, unfavorable foreign exchange and higher working-capital needs. Simply lowering every variable by the same percentage does not generate a coherent economic scenario.

A decision may be made robust through thresholds rather than falsely exact probabilities. A board can approve a phased capital commitment only if a signed minimum order book exists, monthly stressed cash never falls below a specified reserve, a lender commits the facility, and no projected covenant breach occurs. The threshold must be linked to the cash-flow model, not chosen after results are known. Model governance requires version control, protected formulas, independent reconciliation, units checks, documented overrides and traceable revisions. Consistent with Chapter 4, predictive calibration and sensitivity are separate from causal claims about what a policy change will achieve.

24.7.3 Inflation, exchange rates, commodity costs and sustainability exposure

Forecasts for import-dependent enterprises should distinguish RWF obligations from foreign-currency prices and settlement timing. A machine purchased in foreign currency may become more expensive before customs clearance; a fuel or energy price movement may affect both unit margin and consumer demand. Hedging, denomination matching, supplier negotiation and contingency reserves can mitigate some risks but are not costless. Exposure must be traced to actual contracts, maturity dates and counterparties. For climate-sensitive assets, physical hazards, energy efficiency, insurance affordability and potential regulation

may affect cash flows and access to finance. IFRS S1 frames sustainability-related financial information around risks and opportunities reasonably expected to affect cash flows, access to finance or cost of capital; its application in any reporting jurisdiction is a separate question requiring verification (IFRS Foundation, 2023).

24.7.4 A 13-week liquidity bridge and its governance uses

To connect valuation to settlement, consider a separate, hypothetical thirteen-week cash forecast for the same illustrative enterprise. Opening unrestricted cash is RWF 12 million. Weekly receipts reflect dated customer payments rather than the gross value of invoices raised, while outflows aggregate contracted operating disbursements and scheduled financing payments. The following table shows the central scenario in RWF million. These numbers are teaching assumptions, not reported activity. In a live model, each week would include payroll, tax, suppliers, capital outlays, lender instalments and restricted cash as separately controlled lines, with receivables grouped by customer and likelihood of collection.

The base-case cash position first turns negative in week 10, reaches a RWF 6 million deficit in week 12, and remains RWF 5 million negative at week 13. This means the assumed cash schedule is infeasible without a committed additional source, altered lawful timing or a redesign of payments. More generally, a business can finish a horizon with an apparently tolerable balance after violating a mandatory minimum in an earlier week. The forecast should consequently specify the lowest projected available balance, the week in which it occurs, the evidence behind material inflows and the actions possible before a deficit arises. For example, management could postpone an optional asset purchase, seek a committed revolving facility, negotiate an agreed payment schedule or accelerate disputed-invoice resolution. Treating delayed wages, unpaid taxes or unapproved supplier lateness as discretionary balancing items would conceal distress rather than resolve it. The independent financial review should compare the base case with delayed collections and a foreign-currency purchasing shock; forecasts should then be updated against actual receipts weekly.

Week	Opening cash	Collections	Payments	Closing cash
1	12.0	6.0	8.0	10.0
2	10.0	8.0	9.0	9.0
3	9.0	9.0	10.0	8.0
4	8.0	7.0	9.0	6.0
5	6.0	11.0	12.0	5.0
6	5.0	9.0	10.0	4.0
7	4.0	12.0	10.0	6.0
8	6.0	6.0	11.0	1.0
9	1.0	11.0	12.0	0.0
10	0.0	10.0	12.0	-2.0
11	-2.0	12.0	13.0	-3.0
12	-3.0	8.0	11.0	-6.0
13	-6.0	15.0	14.0	-5.0

Table 24.3. Illustrative thirteen-week direct cash forecast (RWF million). Source: Author's constructed teaching assumptions; receipts and payments represent cash movements, not accounting profit.

24.8 DIVIDEND AND DISTRIBUTION POLICY

24.8.1 Residual claims, retained resources and payout expectations

Dividend policy addresses how much distributable value should be transferred to owners and how much retained for financing future opportunities. Under frictionless assumptions analogous to the Modigliani–Miller framework, dividend form need not independently create firm value when investment policy is fixed. In practice, transaction costs, taxes, information asymmetry, governance conflicts, investor preferences and restricted financing can make distributions consequential. A dividend can communicate management's confidence, but signals are difficult to identify because firms also alter payouts for liquidity, tax and institutional reasons. Repurchases, ordinary dividends, special dividends and owner withdrawals differ in legal form, timing and effect on ownership; they should not be treated as interchangeable cash outflows without examining the applicable corporate framework.

A residual policy begins by funding legitimate positive-NPV projects and required buffers before distributions. Yet simply retaining all available cash is not necessarily wise. Managers may overinvest in low-return projects, and controlling shareholders may divert resources. Jensen's agency analysis provides a reason for disciplined payouts where free cash flow exceeds defensible investment needs, while growth opportunities and costly external financing can justify retention. Fama and French (2002) found patterns in dividends and debt consistent with several theoretical mechanisms rather than a single universal formula. Owner-managers also face household obligations, so predictable payouts may stabilize family income; these expectations must be represented in a financing plan without permitting withdrawals that breach obligations to workers, suppliers or creditors.

24.8.2 A distribution feasibility test

Before recommending a distribution, finance should establish legally distributable reserves, applicable contractual restrictions, outstanding tax and employment obligations, projected cash after maintenance and debt service, and the downside liquidity margin. A seemingly affordable RWF 15 million distribution should be rejected or deferred if a credible forecast shows the enterprise will miss payroll or breach a loan covenant in the following month. Equally, an indefinite prohibition on payouts needs justification where a mature enterprise retains excess cash without profitable opportunities and minority owners lack meaningful information. Effective distribution governance therefore connects cash forecasts, ownership rights, capital allocation records and transparent board oversight.

24.8.3 Payout decisions as governance and intergenerational allocation

Dividend choices expose a tension between current claimants and future enterprise capabilities. A dominant shareholder may rationally seek near-term distributions to reduce personal concentration risk, while minority investors may prefer retained growth or demand payouts to limit managerial appropriation. Workers and creditors may care most about whether distributions leave enforceable claims adequately protected. The correct distribution analysis is therefore more demanding than applying an arbitrary percentage to earnings: it must reconcile accounting reserves, legally distributable amounts, unrestricted cash, future investment commitments, covenant restrictions and credible downside states. The legal permissibility of a distribution and its economic prudence are separate questions.

Jensen's (2001) insistence on coherent objectives also applies to retained cash. Retention is not virtuous simply because it increases the size of the business; without strong investment opportunities it can finance managerial empire-building, related-party transfers or assets with weak returns. Equally, payouts that force expensive external financing for a foreseeable project may destroy value. A board should compare the marginal value of reinvesting one franc with the value to owners of distributing it, subject to creditor and

employee protections, and publish a consistent rationale. Long-term stewardship does not mean retaining all profit; it means preserving the enterprise's ability to honor legitimate obligations while making ownership returns transparent.

24.9 RISK, RETURN AND DIVERSIFICATION

24.9.1 Expected return, dispersion and covariance

A financial decision under risk may be represented by states s, their probabilities p_s and their associated returns R_s. If probabilities are supported and exhaustive, expected return is E(R) = sum[p_s R_s]; variance is Var(R) = sum[p_s(R_s - E(R))^2]; and standard deviation is its square root. These measures summarize a distribution, not the consequences of every possible event. A 20% expected return is not a commitment to earn 20%, and an asset with low historical volatility can still suffer a severe permanent loss. Estimation error, nonstationary markets, sparse observations and asymmetric downside events become particularly important for young firms or projects exposed to climate, foreign-exchange and political risks.

Markowitz (1952) established that the volatility of a portfolio depends on the covariance among its components, not only on the sum of stand-alone volatilities. For two risky assets with portfolio weight w, variances σ_1^2 and σ_2^2 and correlation ρ, portfolio variance is $w^2\sigma_1^2 + (1 - w)^2\sigma_2^2 + 2w(1 - w)\rho\sigma_1\sigma_2$. Diversification can reduce risk when returns are imperfectly correlated. A Rwandan enterprise that sells into different sectors or sources materials from more than one country may benefit from less correlated operating exposures, although diversification raises coordination costs and may sacrifice specialization. It must be tested with actual cash-flow dependencies, not merely a count of customers or suppliers. A firm may appear geographically diversified while all its markets depend on the same commodity price, border corridor or lender.

Sharpe's (1964) pricing framework distinguishes diversifiable asset-specific variation from systematic risk that remains in an efficiently diversified market portfolio. Fama and French (1993) show that additional common return factors help describe observed market variation; this complicates naive CAPM applications rather than supplying a universally accepted replacement for all enterprise valuations. A private owner with most family wealth invested in one business cannot simply assume that idiosyncratic risk is costless to bear. Financial theory thus supplies distinct perspectives: market pricing of traded claims, decision utility for concentrated owners, and solvency protection for the enterprise as a continuing social and economic organization.

24.9.2 Downside risk, risk capacity and risk appetite

Standard deviation treats positive and negative deviations symmetrically. Managers also need downside measures such as probability of a cash shortfall, expected loss conditional on a stressed state, debt-service coverage at the forecast trough, loss-given-default and cash-flow-at-risk. Value-at-risk is a quantile of a modeled loss distribution and does not reveal the scale of losses beyond that quantile; expected shortfall seeks to describe tail severity but remains model dependent. Stress testing is particularly relevant when observations are insufficient for credible tail estimation. A scenario in which customers pay 30 days late, imported inputs rise 15%, and a lender declines renewal can be more actionable than a statistically precise but structurally implausible forecast.

Risk tolerance must be distinguished from risk capacity. Owners may willingly accept an uncertain investment, but the enterprise may lack the liquidity to survive a moderate adverse event or may have nonnegotiable duties to workers and creditors. Risk governance therefore specifies maximum funding gaps, minimum coverage ratios, limits on currency mismatch and decision rights for contingency responses. It

requires independent challenge of optimistic cash forecasts and a credible mechanism for escalating emerging risks. The enterprise-wide risk-management framework is treated more extensively in Chapter 32; this section establishes how financial exposure enters investment, funding and liquidity decisions.

24.9.3 Portfolio arithmetic and the limits of statistical reassurance

For a reproducible diversification illustration, suppose two hypothetical productive exposures each have a 50% portfolio weight. The first has a return standard deviation of 20%, the second 30%, and their correlation is 0.20. Portfolio variance equals $(0.5^2 \times 0.20^2) + (0.5^2 \times 0.30^2) + [2 \times 0.5 \times 0.5 \times 0.20 \times 0.20 \times 0.30] = 0.0385$; the portfolio standard deviation is therefore approximately 19.62%. This is lower than the equally weighted average of the individual volatilities, 25%, because their imperfect correlation provides diversification. The calculation demonstrates a covariance mechanism, not a forecast of either exposure's actual distribution. Correlation may rise abruptly during a regional disruption, and firms often own operating assets that cannot be liquidated at portfolio-model prices (Markowitz, 1952).

Risk measures should be assessed by the decisions they support. Value-at-risk identifies a loss quantile but cannot describe the magnitude of losses in its tail; expected shortfall aims to capture that severity, yet its estimate may be unstable when adverse observations are rare. Artzner et al. (1999) explain why properties such as subadditivity matter for coherent assessment of aggregate exposures. A firm lacking deep historical data should be reluctant to treat a model-generated 99% loss threshold as an observed physical regularity. Robust stress scenarios for a Rwandan importer should instead investigate correlated delays, exchange-rate movements, supplier failures and credit withdrawals, stating which thresholds would trigger containment, refinancing or suspension of discretionary distributions. Financial risk is not merely volatility: it is exposure to outcomes that alter the organization's feasible choices.

24.10 CORPORATE VALUATION CONCEPTS

24.10.1 Enterprise value, equity value and cash-flow definitions

Valuation converts a set of uncertain economic claims into a date-specific estimate under stated assumptions. Discounted free cash flow to the firm (FCFF) typically values the operating business before payments to capital providers. Under simplified conditions, FCFF = EBIT(1 - T) + depreciation and amortization - capital expenditure - increases in operating net working capital, with adjustments for other relevant noncash and tax items. The enterprise value of forecast FCFF is its present value discounted at an appropriate WACC plus a justified terminal value. Equity value is then obtained by deducting net debt and other prior claims and adding nonoperating assets as appropriate, avoiding double counts. Free cash flow to equity (FCFE) instead reflects cash potentially available to residual owners after debt-related cash flows and is discounted using a consistent equity required return.

Valuation is sensitive to terminal value assumptions. In a simplified stable-growth model, terminal value at year n is FCFF_(n+1)/(WACC - g), provided WACC exceeds g and reinvestment is sufficient to sustain the projected growth. A one-percentage-point increase in g can shift estimated value materially when the spread between WACC and g is small. Terminal assumptions should be compared with plausible long-run nominal economic growth, sector structure, competition and asset renewal, rather than extrapolated from an unusually profitable initial phase. Market multiples such as EV/EBITDA, price/earnings and price/book offer comparators but depend on accounting policies, growth, debt, risk, asset intensity and the comparability of transactions. A multiple is not a substitute for explaining why another firm has a similar opportunity set.

24.10.2 Intangible assets, control and model uncertainty

A brand, software platform, skilled workforce, contract portfolio or distribution relationship may drive future cash flows without appearing as a separately recognizable item in statutory accounting. A valuation can consider these economic capabilities through forecast earnings, customer retention and competitive life, but should not automatically add a separately estimated 'brand value' to a DCF that already incorporates the brand's incremental revenues. Distinctions among market value, investment value to a particular owner, liquidation value, fair value under a specified reporting standard and a negotiated transaction price are essential. Control rights, marketability, minority protections and due diligence can materially influence what a purchaser is willing to pay.

The most defensible valuation communicates a range and the variables that produce it. It should identify which quantities derive from verified contracts or historical observations, which are forecasts, and which require judgment. An estimated equity value is not proof of saleability at that amount. For a thinly traded or family-controlled enterprise, uncertainty about records, ownership claims and enforcement may be as important as the arithmetic of forecast EBITDA. Accurate valuation is therefore a reasoned conditional argument, not an output independent of governance, information and institutional context.

24.10.3 A fully specified free-cash-flow valuation demonstration

Consider a hypothetical mature operating business with forecast annual free cash flow to the firm of RWF 14 million, 16 million, 19 million and 21 million over years one through four. Suppose the relevant WACC is a constant 15%, long-run nominal growth after year four is assumed to be 4%, and appropriate reinvestment to sustain that growth is already reflected in the free-cash-flow forecasts. Under the stable-growth convention, year-five FCFF is $21 \times 1.04 = \text{RWF } 21.84$ million, so terminal value at the end of year four is $21.84/(0.15 - 0.04) = \text{RWF } 198.545$ million. Discounting the four explicit annual flows and the terminal amount at 15% gives an illustrative operating enterprise value of approximately RWF 162.29 million. If net debt and other prior claims total RWF 45 million, with no distinct nonoperating assets, simplified equity value is approximately RWF 117.29 million. These are model implications rather than evidence of a saleable market price.

The terminal amount is much larger than any one forecast annual cash flow; it represents the present-at-year-four value of all subsequent assumed claims and therefore carries a disproportionate share of the valuation's uncertainty. For the same year-four FCFF, increasing nominal perpetual growth from 4% to 5% raises the terminal multiple from approximately 9.45 to 10.50 times year-four FCFF, even before considering whether the growth and reinvestment assumptions are compatible. Rather than conceal this sensitivity, the valuer should report a range of terminal assumptions, explicit maintenance capital expenditure and working-capital requirements, and the implied competitive and market conditions. The chosen discount rate and growth rate must share currency and inflation conventions. No valuation calculation licenses the addition of a second brand value when that brand's expected contribution is already reflected in forecast free cash flows.

24.11 SME AND GROWTH-COMPANY FINANCE: RWANDAN EVIDENCE AND INSTITUTIONAL CONTEXT

24.11.1 What national sources establish, and what they do not

The NISR's Integrated Business Enterprise Survey 2024 reports 278,060 business enterprises and describes at least 87% of the business landscape as informal under its survey definitions. Its published summary identifies insufficient collateral as a finance-access barrier for 11.4% of formal enterprises and 19.6% of

informal enterprises in the reported measure (NISR, 2026). These figures warrant attention to enterprise heterogeneity and the informational and asset-security requirements of finance. They do not establish that 87% of firms are insolvent, that informal entrepreneurs reject regulation, or that every collateral-constrained enterprise has a positive-NPV project.

AFR's Rwanda MSME FinMap, based on a 2024 sample of 2,116 MSMEs, found 83% financially included, 75% formally served, and 60% reporting no borrowing during the preceding twelve months. The report distinguishes formally sourced credit, mixed formal–informal borrowing and family support. These measures describe an MSME sample, not the financing decisions of all registered corporate entities; the categories and denominator must be preserved (AFR, n.d.). NISR's FinScope 2024 household survey separately reported 96% financial inclusion among adults and 92% formal financial inclusion, with 22% banked. Those *adult-level* indicators cannot be treated as enterprise access to term loans or investment capital (NISR, n.d.). The three sources address related but different units of analysis and financial constructs.

The economic diagnosis is not simply that finance is 'missing'. Financing gaps may originate in collateral, unverifiable revenue, limited bookkeeping, unpredictable sales, loan size relative to administration cost, geographic access, costly currency mismatch or the lender's expected recovery in default. Some firms correctly decline borrowing because projects lack sufficient returns. Conversely, an enterprise with a strong commercial opportunity may be excluded because its assets or transaction history do not fit standard collateral models. A useful policy assessment distinguishes information failures, enforceability problems, pricing, transaction costs and demand for credit from evidence of productive additionality.

24.11.2 A context-sensitive financing pathway

For an early-stage Rwandan enterprise, the practical sequence may begin with a credible separation of household and business cash, documented daily sales and expenses, monthly cash forecasts, supplier statements and verified ownership of productive assets. These instruments do not guarantee financing; they reduce ambiguity about cash generation and liabilities. The firm should next compare retained cash, supplier terms, equity contribution, secured or partially guaranteed debt and any eligible public or development financing. Concessional finance must be assessed using current eligibility rules and lender documentation rather than presumed availability. Fintech-enabled records and payment histories may improve evidence, but do not substitute for profitability or automatically eliminate adverse selection.

An owner seeking RWF 80 million for a productive asset should supply an investment specification, realistic installation schedule, supplier quotation, customer basis, incremental cash-flow estimate, adverse scenario, collateral inventory and projected debt-service schedule. The file should state which obligations are secured, any guarantees demanded from individuals, who bears foreign-currency risk and what happens if commissioning is delayed. A finance provider likewise has duties of truthful disclosure and proportionate credit assessment. The alternative of remaining smaller may be economically rational when borrowing threatens a household's only dwelling or when delayed collection makes repayment implausible.

24.11.3 Comparative international scholarship and transferability

Berger and Udell's (1998) financing life-cycle model explains why a transparent, asset-rich enterprise in a deep financial market may access diversified debt and equity claims unavailable to a microenterprise. Graham and Harvey (2001) document US corporate finance practices, not the Rwandan market. Deloof's (2003) Belgian working-capital evidence concerns comparatively large nonfinancial firms in a different creditor and enforcement setting. International models remain analytically useful when their assumed instruments, reporting quality, market liquidity, legal enforceability, currency stability and borrower risk-sharing arrangements are stated. Directly transferring a US equity risk premium, a European DSO benchmark or a listed-firm leverage target without adjustment would conflate institutional context with

economic law. Rwanda's small-enterprise structure makes the question of transferability central to sound finance rather than a peripheral footnote.

24.11.4 Growth finance, asymmetric risk and the comparative evidence

SME financing is heterogeneous even within a single jurisdiction. A market trader requiring seasonal stock may prefer a revolving working-capital facility; a processor buying durable equipment may require maturity-matched investment credit; a software firm with little tangible collateral may need staged equity, customer prepayments or revenue-linked terms. Venture investment offers risk-bearing capacity but can also produce intensive governance, exit and control obligations that are inappropriate for an owner seeking a stable family enterprise. Guarantees can relax collateral constraints but create public contingent liabilities and moral hazard if losses are socialized without reliable underwriting. The financial instrument should fit the cash-generating mechanism rather than the prestige of a funding label.

Cross-country evidence should discipline, not replace, local inquiry. Beck et al. (2005), using enterprise-level evidence from 54 countries, find that finance, legal and corruption constraints are more adverse to growth for smaller firms, with institutional development mitigating their effects. The result identifies a patterned association with firm size in the studied data, not the causal effect of any present Rwandan financing product. In an experimental study of Sri Lankan microenterprises, de Mel et al. (2008, 2009) document high but heterogeneous returns to grants of capital; their research also highlights important differences across types of owners. The study is valuable precisely because it challenges a simple assumption that any small firm offered more capital will produce a uniform return. Productive opportunity, entrepreneurial capability, sector, household constraints and market conditions mediate the effect, and national transfer requires fresh evidence.

The policy implication is methodological. A lending intervention should state whether it aims to improve viable borrowers' access, reduce transaction costs, enable genuinely additional investment, correct discriminatory informational practices or protect vulnerable applicants from harmful credit. Counts of loans, registered wallets and business registrations do not by themselves establish higher productivity, additional investment or welfare. Evaluation should examine counterfactual financing, defaults, displacement of existing lending, profitability, borrower burden and who ultimately bears losses. The unit of analysis must remain the enterprise or transaction when the policy question concerns business credit, even where household inclusion statistics provide useful contextual information (AFR, n.d.; Beck et al., 2005; NISR, 2026).

24.12 FINANCE ETHICS AND EMERGING TOOLS

24.12.1 Honest valuation, fair contracting and responsible lending

Financial integrity requires refusing to hide predictable costs, manipulate forecast denominators or present conditional outcomes as guaranteed returns. A lender's affordability and repayment assessment is not ethically neutral when the financing contract transfers severe risk to households through personal guarantees. Equally, borrowers must not misstate sales, duplicate collateral claims or conceal debt. Appropriate disclosure involves the true cost of finance, fees, default consequences, variable-rate exposure and any foreign-currency mismatch. The most profitable contract for one party is not necessarily a just contract where meaningful comprehension and bargaining alternatives are absent.

A finance manager can face conflicts through related-party financing, supplier kickbacks, selectively timed payments and the use of confidential forecasts for private dealing. These conflicts need early declaration, independent approval, documented valuation and auditable procurement and payment controls. When

financial stress arises, a responsible response distinguishes legitimate restructuring from coercive delay of wages or payments to vulnerable suppliers. The moral judgment is that enterprise continuity does not justify deception or unlawful harm; the empirical question of which restructuring arrangement is most effective must be examined separately.

24.12.2 Artificial intelligence, alternative data and model governance

AI tools can classify invoices, detect anomalous transactions, forecast receipts, simulate funding gaps and assist with credit assessment. Their output quality depends on the relevance, completeness and representativeness of training and operating data. Alternative data drawn from digital payments may be useful for customers lacking traditional credit records, yet can encode location, gender, network or device-access differences. A predictive score need not be a valid causal statement about willingness to repay or a fair basis for exclusion. Auditable deployment therefore requires explicit use cases, data permissions, feature review, model validation on relevant populations, calibration under distribution shift, human appeal, cybersecurity safeguards and clear ownership of consequential decisions.

Financial-model automation raises operational risks: a spreadsheet formula can be silently altered; a conversational system may generate confident but nonexistent regulatory provisions; a third-party service can withdraw access or expose confidential client records. The control architecture should separate model preparation, approval, execution and monitoring, with independent checks of cash-flow identities and investment outputs. Emerging systems may reduce processing costs but do not remove the principal's duty to understand the decision. Specialist enterprise information and AI governance are developed in Chapters 28 and 29.

24.12.3 Sustainable, climate and transition finance

Green loans, sustainability-linked instruments and impact capital can potentially alter investment economics through different contractual prices, eligibility or reporting conditions. Labels alone do not demonstrate environmental additionality. A credible project appraisal compares life-cycle energy use, maintenance, rebound effects, operational resilience and independently defensible outcomes. It distinguishes reductions that would occur without the financing from changes attributable to a new investment. Climate-related financial information also affects lenders' perception of future cash flows, collateral and operating continuity. IFRS S1 is an internationally issued disclosure standard effective for reporting periods beginning on or after 1 January 2024, but its legal adoption and scope in a particular jurisdiction must not be assumed (IFRS Foundation, 2023). An ethical green-finance case should disclose methods, baselines, verification arrangements and uncertainty rather than claim sustainability from a product name.

24.12.4 Digital credit, assurance and transition-finance additionality

Digital traces may widen access to information without solving every problem of trust or justice. Berg et al. (2020) show that digital-footprint information can predict consumer default in the setting they study, but their findings do not establish that a similar model trained elsewhere will be accurate or fair for Rwandan microenterprises. Fuster et al. (2022) identify unequal distributional implications of machine-learning methods in US mortgage credit, demonstrating why better predictive performance need not entail equally shared benefits. If digital data correlate with device quality, network coverage or platform participation, a lender may mistake unequal access to technology for an independent measure of creditworthiness. A responsible credit model should therefore be evaluated for discrimination, calibration, explainability, stability through time, lawful data use, human appeal and the availability of alternative documentary pathways.

The finance function should require an evidence trail linking model outputs to authorized decisions. Predictions should be tested against an out-of-time dataset and monitored for deterioration when economic conditions change. Systems should record who approved a model, which variables are prohibited, what adverse-action explanation is available, and how exceptions are escalated. These provisions are business controls, not proof of compliance with any unverified Rwandan AI or privacy rule. Similarly, a green-labelled loan requires evidence of environmental consequences additional to a credible baseline. Lower energy bills may improve project NPV without demonstrating net climate benefit if production and consumption rebound. Where IFRS sustainability disclosure standards are relevant, the distinction between an issued international standard and legally mandated national adoption must remain explicit (IFRS Foundation, 2023; Organisation for Economic Co-operation and Development, 2023).

24.13 INTEGRATED RWANDAN TEACHING CASE: INVESTMENT, CASH AND LEVERAGE

24.13.1 Enterprise, alternatives and method

Consider *Kigali Integrated Foods Ltd*, a wholly fictitious enterprise producing packaged foods for retail and institutional customers. It has been considering two **mutually exclusive** deployment options for its available management and working-capital capacity. Alternative A installs a larger packaging and sealing line; alternative B redesigns distribution, adds route-management equipment and expands contract deliveries. Cash flows are stated in **millions of Rwandan francs (RWF million)** at each year-end, before financing flows, in nominal terms. The appraisal is explicitly a simplified **pre-tax training model**: any implementation would require applicable tax, depreciation allowances, inflation, foreign-exchange, maintenance and legal considerations to be added consistently. Assume initial investments include commissioning and any investment-specific working-capital requirements; year-five cash flows include explicit net disposal and working-capital recovery.

Alternative A requires RWF 75 million immediately. Incremental operating net cash receipts in years 1–5 are RWF 24m, 26m, 28m, 30m and 32m, with RWF 10m of net terminal recovery added in year 5. Alternative B requires RWF 58m, generates RWF 20m, 21m, 22m, 24m and 25m, and recovers RWF 7m at year 5. The required return of 16% annually is **assumed for comparison**, not claimed as a market-derived WACC. Cash flows are positive after routine operating outflows and incremental working-capital effects already assumed in the case, excluding financing payments; no independent probability estimates are asserted.

Year and timing	Alternative A cash flow	Alternative B cash flow	Discount factor at 16%
0, initial commitment	−75.00	−58.00	1.00000
1, year end	24.00	20.00	0.86207
2, year end	26.00	21.00	0.74316
3, year end	28.00	22.00	0.64066
4, year end	30.00	24.00	0.55229
5, including recovery	42.00	32.00	0.47611

Table 24.4. Constructed investment cash flows and year-end discount factors. Source: Author's hypothetical teaching assumptions; figures are RWF million and factors are rounded for presentation. Calculations use unrounded factors.

24.13.2 Fully reconciled capital-budgeting comparison

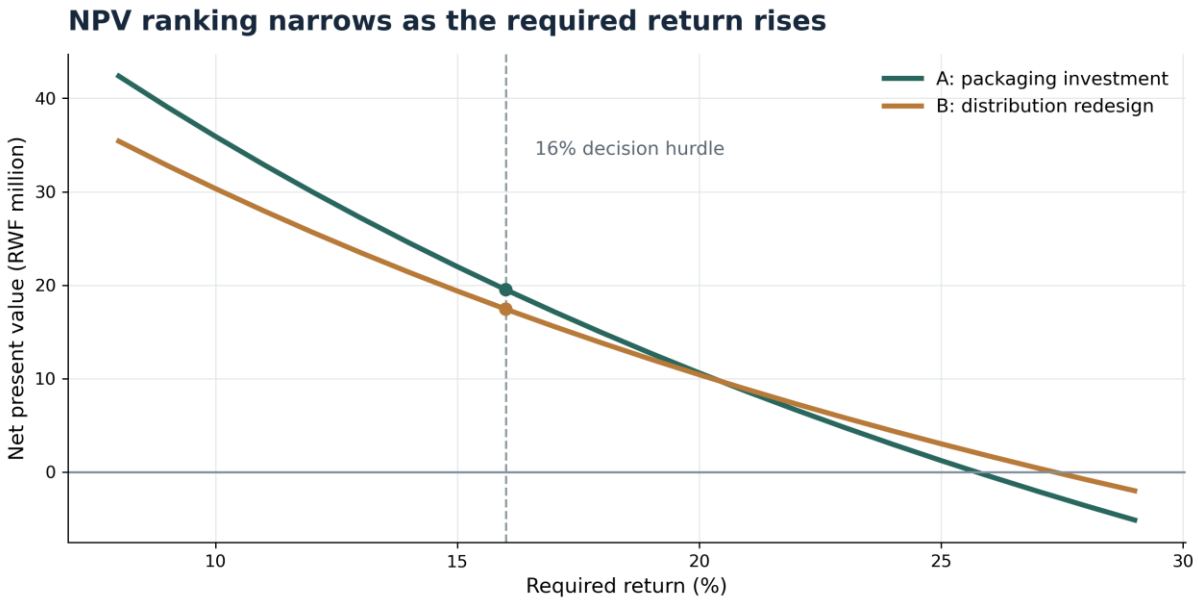
For A, NPV = −75 + 24/1.16 + 26/1.16^2 + 28/1.16^3 + 30/1.16^4 + 42/1.16^5 = **RWF 19.516 million** after rounding. For B, NPV = −58 + 20/1.16 + 21/1.16^2 + 22/1.16^3 + 24/1.16^4 + 32/1.16^5 = **RWF 17.433 million**. Both projects clear the assumed 16% hurdle on expected cash flows; because they are mutually exclusive, A offers RWF 2.083 million greater absolute NPV if the enterprise can finance and execute it without violating liquidity constraints. Excel-style IRR calculations applied to the entire signed annual cash-flow sequences yield approximately **25.73% for A** and **27.34% for B**. IRR therefore ranks B ahead of A, demonstrating the scale-and-timing conflict rather than an arithmetic contradiction. At the assumed hurdle, the profitability indexes are **1.260** and **1.301**, respectively, again preferring the smaller option on value per initial franc while A creates more total modeled value.

Criterion	Alternative A	Alternative B	Decision implication
Initial funds, RWF m	75.000	58.000	B needs 17m less at inception
NPV at 16%, RWF m	19.516	17.433	A maximizes modeled absolute value
IRR	25.73%	27.34%	B leads by percentage return
Profitability index	1.260	1.301	B leads in value per initial franc
Simple payback, years	2.893	2.773	B recovers nominal cash sooner
NPV at 12%, RWF m	29.983	25.667	A leads under lower hurdle
NPV at 20%, RWF m	10.606	10.416	A leads narrowly under higher hurdle

Table 24.5. Capital-budgeting results for two mutually exclusive constructed projects. Source: Author calculations from Table 24.4, using full numerical precision. Payback interpolates within the recovery year and is not a dated-cash-flow value measure.

Simple payback for A is two full years plus (75 − 24 − 26)/28 = 2.893 years. For B it is two years plus (58 − 20 − 21)/22 = 2.773 years. These results are not by themselves evidence of resilience: collections may be delayed and a project can have a positive expected NPV with a severe short-term cash deficit. A responsible authorization memo should request an installation schedule, validated supplier quotations, customer commitments, capacity assessment, staged drawdown options, and a separate 13-week liquidity forecast. Because the difference between the NPVs narrows to approximately RWF 0.190 million at 20%, there is little justification for treating the ranking as robust to all estimation errors. The supplied Excel workbook preserves the base-case and alternative rates, provides input-formula separation and allows independent recalculation.

Figure 24.3. Sensitivity of the competing project NPVs to the assumed opportunity cost of capital



Note. Curves are calculated from the constructed cash flows in Table 24.4. The figure displays modeled values under alternative assumptions, not observations or market forecasts. Source: Author calculations.

24.13.3 Cash-conversion-cycle illustration

The same hypothetical enterprise reports annual credit sales of RWF 600 million, annual cost of goods sold of RWF 456 million, average inventory of RWF 95 million, average trade receivables of RWF 68 million and average eligible payables of RWF 56 million. Using a 365-day convention and cost of goods sold as the **simplified payables denominator**, DIO = 95/456 × 365 = **76.04 days**; DSO = 68/600 × 365 = **41.37 days**; DPO = 56/456 × 365 = **44.82 days**; and CCC = 76.04 + 41.37 − 44.82 = **72.58 days**. These average-balance measures are descriptive, not evidence of excessive inventory or poor payment conduct without industry, seasonality and contractual comparisons.

Suppose management can reduce inventory holding by 10 days without compromising safe supply, reduce customer collections by 7 days through correcting invoice disputes and better documentation, and extend supplier terms by 5 days **only through voluntary renegotiation**. Approximate cash released is (10 × 456/365) + (7 × 600/365) + (5 × 456/365) = **RWF 30.247 million**. The revised CCC is (76.04 − 10) + (41.37 − 7) − (44.82 + 5) = **50.58 days**, a reduction of **22 days**, reflecting the fact that different sales and cost bases determine the cash effect. An apparent improvement that merely delays overdue payments outside agreed terms would be a misleading and unethical representation of liquidity improvement. Further, releasing cash already owed to a lender or needed for maintenance does not make it freely distributable.

24.13.4 Capital structure under stress

Suppose management considers funding RWF 70 million through a five-year fully amortizing loan at a hypothetical fixed annual 15%, with equal end-year payments and no fees. The payment is P = 70(0.15)/[1 − (1.15)^(-5)] = **RWF 20.882 million per year**. If the relevant annual cash flow available for debt service is RWF 30 million, DSCR is 30/20.882 = **1.44**; under a stress case of RWF 18 million, DSCR falls to **0.86**, leaving a **RWF 2.882 million** annual debt-service shortfall before considering any additional liquidity reserve. A high project IRR does not automatically cure the contractual shortfall. The capital structure must be evaluated with repayment sequencing, restrictive covenants, interest reset terms and asset cash-flow

maturity. It would be misleading to subtract the loan payment from the project operating cash flows and then value those residual flows using an unchanged enterprise-wide WACC.

Stress test	Central case	Adverse case	Board-relevant interpretation
Cash available for debt service, RWF m	30.000	18.000	Excludes uncommitted balance-sheet cash
Fixed annual debt payment, RWF m	20.882	20.882	Equal payments over five years
DSCR	1.44	0.86	Adverse case falls below full cash coverage
Annual cash after debt service, RWF m	9.118	−2.882	Shortfall must be funded or terms revised

Table 24.6. Fictional capital-structure stress case. Source: Author calculations. This table illustrates annual contractual capacity, not a covenant definition accepted by any actual lender.

A conditional recommendation follows. A's slightly higher absolute NPV supports preference under the base assumptions, but only if committed funds, credible receivable collection, appropriate leverage terms and operational feasibility are demonstrated. Where a binding liquidity constraint makes A infeasible, B or phased implementation may be the responsible alternative. Positive NPV is not an exemption from liquidity discipline; a lower-NPV feasible project may dominate a higher-NPV infeasible one. Decision-makers must record why any investment was selected, rejected or deferred and specify the evidence that would reopen the question.

24.13.5 Investment committee decision and evidence checkpoints

The illustrative decision should not be reduced to 'choose A because its NPV is larger'. At 16%, the modeled incremental value advantage of A is approximately RWF 2.083 million, modest relative to the scale of assumptions about commissioning, revenue realization and financing. The appropriate decision first tests whether each project satisfies legitimate operating and legal conditions, then compares its value subject to resources and survival. If A requires borrowing terms that breach a minimum cash balance or create an adverse-case DSCR below an authorized threshold, the apparent superior NPV does not identify an executable preference. Conversely, assuming B is always safer because it is smaller would ignore the character and timing of its own cash receipts.

An investment committee should require independently checked supplier quotations, source-cited sales assumptions, a dated commissioning plan, operational capacity sign-off, maintenance cost coverage, written debt terms and a linked 13-week rolling cash projection. It should then document which decision conditions are presently satisfied, which remain open, and which managerial actor is accountable for resolving each. The committee may authorize a controlled pilot, conditional approval or deferral where information is valuable and commitment is irreversible. Post-approval monitoring should distinguish changes in the external environment from errors in the initial investment logic. The board's obligation is to make an intelligible decision under uncertainty, not retrospectively to make every observed outcome appear inevitable.

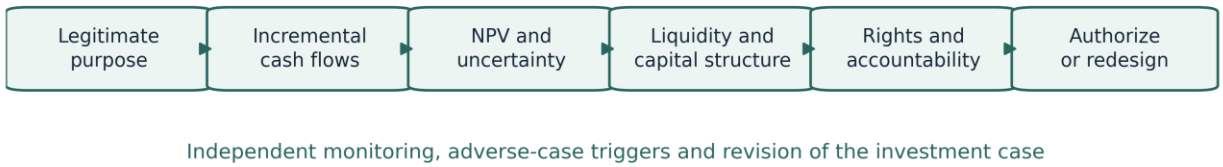
24.14 COMPARATIVE SYNTHESIS, CROSS-FUNCTIONAL CONSEQUENCES AND RESEARCH AGENDA

24.14.1 What finance theory explains, and what remains unresolved

The intellectual traditions examined here illuminate different dimensions of financial choice. Discounted cash flow supplies a coherent intertemporal opportunity-cost comparison; it does not independently verify its inputs or identify a socially legitimate objective. Modigliani–Miller reasoning reveals the conditions under which financing structure would be irrelevant; real enterprise financing requires precisely the institutional frictions their benchmark removes. Trade-off and pecking-order perspectives explain different correlations between firm characteristics and financing, but neither identifies a universal leverage target. Portfolio theory clarifies covariance, while borrowing capacity and concentrated ownership draw attention to tail events that price-based equilibrium models may underrepresent. Working-capital economics explains why a profitable sale may produce a funding shortfall, but a shorter cycle is not automatically a more ethical or resilient cycle.

The proposed integrated framework is therefore a finance feasibility–value–accountability sequence. It begins by making explicit the enterprise purpose, the contractual rights of affected parties and protections that cannot be overridden by an attractive return. Within those boundaries, analysts construct incremental alternatives, with cash-flow dates, currencies, source provenance and the uncertainties material to choice. An NPV comparison then establishes the conditional expected surplus, while dated cash balances and debt-service schedules test whether that surplus is attainable under feasible financing terms. The investment case is incomplete until its consequences for customers, workers, suppliers and other functions are examined. Authorization should finally identify accountable decision-makers, adverse-case thresholds and a review process capable of revising the original judgment when evidence changes. This synthesis integrates established approaches without claiming that the resulting decision architecture is a newly validated causal model.

Figure 24.2. A finance decision architecture integrating value, survival and accountability



Note. Failed feasibility or integrity tests return the proposal to redesign rather than automatically leading to approval on the strength of a favorable ratio. Source: Author's conceptual synthesis of the chapter's finance theories and professional decision requirements.

24.14.2 Interfunctional dependencies

An enterprise's financial results emerge from operating commitments that cannot be determined inside the finance department. In marketing and sales (Chapters 13–16), price, demand forecasts, customer credit terms and collection quality determine realized cash receipts rather than merely booked revenue. Operations and quality (Chapters 17 and 20) determine capacity feasibility, reject costs, maintenance, workplace safety and asset life. Procurement and logistics (Chapters 18–19) determine supplier obligations, inventory buffers and import exposure. Management accounting (Chapter 23) supplies relevant cost analysis, but the corporate-finance model translates incremental economic consequences into dated cash flows rather than using allocated averages indiscriminately. Governance (Chapter 8) determines the

integrity of authorization, conflicts, financing commitments and owner distributions. Human-resource decisions (Chapters 9–12) influence skill availability, installation delays and essential payroll obligations. Investment therefore becomes a test of interfunctional coherence.

The integration is especially important in small enterprises where the same founder negotiates credit, authorizes expenditures and controls reported sales figures. Personal proximity does not remove conflicts of interest or justify weaker reconciliation. Proportionate controls can be simple but disciplined: separate personal and business accounts, reconcile bank and mobile-money receipts, document borrowings and guarantees, approve material investments in writing and review customer collections alongside payroll commitments. As enterprises scale, the necessary arrangements become more formal, but the underlying principles of traceability and separation of duties remain.

24.14.3 Integrative conclusion: value, resilience and responsibility

A finance decision is best understood as a claim about the future rather than a verdict on the past. Financial statements reveal recognized transactions and obligations; capital budgeting evaluates incremental alternatives; and cash forecasts test the dates on which settlement will become unavoidable. The same enterprise may report profit, forecast positive NPV and nevertheless enter distress if receipts arrive after wages and principal must be paid. A convincing analysis must therefore demonstrate compatibility among value, liquidity and legally enforceable commitments.

Theories of capital structure, portfolio choice and valuation illuminate necessary but different parts of that demonstration. Frictionless financing models clarify when financing labels would not change underlying productive value, while information asymmetry, collateral constraints and distributional conflicts explain why financing may determine which positive-value investments can be implemented. Diversification and flexibility can reduce exposure but impose real organizational costs. None of these mechanisms justifies a universal debt ratio, risk premium or cash-cycle target independent of business conditions.

The African comparative perspective strengthens the analytical framework by making institutional assumptions visible. Markets with incomplete transaction histories, concentrated ownership, thin trading and costly collateral enforcement cannot simply import rates, covenant norms or capital-market instruments derived from highly liquid listed-company samples. Yet local constraints also do not invalidate the logic of incremental cash flows or the opportunity cost of resources. Responsible transfer requires retaining the mathematical principles while re-estimating empirical parameters and redesigning governance arrangements to match actual capabilities.

Finally, a financial outcome cannot be declared responsible only because an expected present value is positive. Employee safety, lawful payments, meaningful disclosure, proportionate credit assessment and enforceable stakeholder claims determine which alternatives are admissible. The proposed integrated architecture is consequently a conditional decision discipline: establish legitimate aims and evidence; construct incremental choices; test value and cash feasibility; govern funding rights and risks; and subject the resulting commitments to independent monitoring and revision. Its intellectual contribution is the connection among these tests, not an assertion that they have already been empirically validated.

24.14.4 Research opportunities and a transparent evaluation design

Research in Rwanda and comparable African settings could investigate whether improvements in the verifiability of sales and receivables change financing terms after accounting for enterprise size, sector and prior creditworthiness; whether observed reductions in CCC reflect genuine collections or shifts in bargaining power; how guarantee design influences additional lending rather than substitution for commercial loans; and whether alternative digital-payment records improve credit decisions without

disadvantaging lower-connectivity entrepreneurs. Another relevant question is whether discount-rate methods based on internationally traded securities produce systematic appraisal errors for privately held, heavily concentrated family firms. Green-finance research should measure incremental physical outcomes rather than count product labels or concessional disbursements.

A replicable secondary-data study would first register its unit of observation, sampling frame, period, outcome and explanatory variables. IBES, MSME FinMap, official macroeconomic series and company-level financial statements, where lawfully accessible, would be treated as different datasets with noninterchangeable populations. Estimates would require transparent variable definitions, comparable nominal or real units, explicit missing-data treatment, sensitivity to selection and documented data licenses. A causal question about financing availability would need an identification design, such as a plausibly exogenous eligibility threshold or staged policy change, and careful examination of spillovers and concurrent reforms. Cross-sectional associations cannot automatically establish credit-market failure or the effect of a financing intervention. These commitments make the proposed research agenda open to correction rather than dependent on a preferred policy outcome.

24.15 KEY TERMINOLOGY, FURTHER READING AND LEARNING ASSESSMENT

24.15.1 Concise disciplinary glossary

The following definitions identify the meaning of frequently used terms within the financial decisions examined in this chapter; the qualifications provided in the corresponding sections govern their technical application.

Concept	Working definition
Capital budgeting	Comparing dated incremental capital outlays with contingent future benefits and costs.
Cost of capital	Required return consistent with a specific financing claim and cash-flow risk.
Cash conversion cycle	DIO + DSO − DPO, measured in days using declared denominators.
Debt-service coverage	Defined cash available to repay scheduled interest and principal, divided by the debt service.
Equity	Residual ownership claim after settlement of prior legally recognized claims.
Financial flexibility	Capacity to meet contingencies or pursue options without disproportionate financial cost.
Internal rate of return	Discount rate at which a cash-flow stream has zero NPV, where a meaningful solution exists.
Liquidity	Capacity to settle monetary obligations in the amounts and at the dates required.
Net present value	Present value of all incremental dated inflows and outflows at a declared required return.
Profitability index	PV of future net inflows divided by initial outlay for a conventional single-outlay project.
Solvency	Longer-term capacity to honor financial obligations without default or untenable refinancing.
Systematic risk	Risk that remains relevant to prices of claims under the specified market-pricing model.
Terminal value	Estimated value at the explicit forecast horizon of later economic claims.
Weighted-average cost of capital	Weighted required returns on relevant financing claims with compatible tax and market-value assumptions.

24.15.2 Questions for conceptual mastery

Foundational question (LO1–LO3): A firm reports positive net profit but cannot pay a RWF 12 million loan installment. Explain, without assuming fraud, how accounting profit, operational cash, NPV and solvency differ. Then calculate the present value of RWF 15 million payable in three years at a stipulated annual effective 13%, stating every timing assumption.

Applied exercise (LO3–LO5): Reproduce Tables 24.4–24.6 using formulas rather than typed results. Test hurdle rates of 12%, 16% and 20%. Assume the first two years of A's receipts are delayed one year while its other cash flows and terminal date remain unchanged; calculate the new NPV and explain whether the scenario is a pure delay or alters terminal recovery. Recalculate CCC if annual credit sales fall to RWF 540 million and average receivables remain RWF 68 million; interpret the result without claiming that a causal reduction in efficiency has been demonstrated.

Critical discussion (LO4, LO6–LO8): An investor claims that a startup with only intangible assets should use a 'Rwanda country risk premium' added to a US-listed-firm WACC and simultaneously reduce every forecast cash flow for the same national risk. Critique possible double-counting, currency inconsistency and the transferability of traded-security prices. Propose a transparent, defensible alternative and identify what cannot be measured credibly from the information supplied.

Capstone assessment (LO1–LO8): Prepare a 2,500–3,500-word investment committee memorandum for the hypothetical enterprise, with a reproducible workbook, comparing A, B, phased A and deferral. Model at least three internally consistent sales–collections–foreign-exchange scenarios; prepare a 13-week liquidity schedule and annual debt-service plan; identify distribution restrictions, customer and supplier consequences, assumptions requiring verification, owner and lender conflicts, and explicit authorization and review thresholds. Include a two-page appendix mapping each recommendation to evidence, calculation and accountable decision maker. The assignment requires a reasoned choice, not merely a ranking of ratios.

24.15.3 Educator guidance and indicative rubric

A strong response demonstrates correct formula construction, timing discipline, nominal/real and currency consistency, treatment of financing without double-counting, a feasible cash forecast, critical interpretation of competing measures and ethically defensible treatment of suppliers, workers and lenders. The indicative grading weights are: theoretical and conceptual reasoning (20%); reproducible quantitative work (30%); evidence quality and sensitivity (20%); interfunctional and ethical analysis (20%); clarity, reference accuracy and decision discipline (10%). Where actual loan terms, taxes or customer data are absent, exemplary students should disclose the missing evidence and use clearly marked assumptions; inventing 'current Rwanda rates' should not receive credit. The capstone can be adapted for advanced undergraduate or postgraduate levels by varying the extent of uncertainty modeling and causal-evidence requirements.

24.15.4 Selected further reading

Modigliani and Miller (1958) supply the benchmark for financing irrelevance and its institutional assumptions. Myers and Majluf (1984) explain information asymmetry and external funding. Markowitz (1952) and Sharpe (1964) develop distinct portfolio-allocation and market-pricing perspectives. Graham and Harvey (2001) provide a useful empirical contrast between finance theory and reported managerial practice. Berger and Udell (1998) offer a structured financial growth-cycle account relevant to SMEs, while Kaplan and Zingales (1997) demonstrate why common empirical proxies for constraints require caution. NISR's 2024 enterprise-survey release and AFR's MSME FinMap support an applied reading exercise in denominator discipline and context-sensitive financial analysis.

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