# Advanced Financial Management Exam _ June 2025

## Answer for Question One: SAVANNAH Co

### (a) Relationship between Business Risk and Financial Risk

**Business risk** refers to the inherent uncertainty in the company's operations, which affects operating income. This includes variability in sales, costs, market demand, regulatory environment, and the sectoral exposure (e.g., agribusiness vs. renewable energy).

**Financial risk** arises from the use of debt in the capital structure. The more debt a firm uses, the higher the fixed financial obligations (interest payments), increasing the variability of equity returns.

**Relationship**:

- Business risk and financial risk are **interrelated**. A firm with **high business risk** should typically **avoid high financial risk** (i.e., maintain lower leverage) to control overall risk.
- Combining **high business and financial risk** results in **high total risk**, which increases the required return by equity holders and creditors, thus raising the WACC.

**Impact on Cost of Capital**:

- **Risk mitigation** (e.g., diversification, ERM) can **lower business risk**, improving credit rating and reducing the cost of debt and equity.
- **Diversification** may reduce **unsystematic risk**, making cash flows more stable, potentially reducing the beta and cost of equity (through CAPM).
- **Risk-reducing strategies** can therefore **lower the WACC**, enabling more investment opportunities.

**Marking Guide (6 marks)**

- Explanation of business risk and financial risk (2 marks)
- Relationship and interaction between both (2 marks)
- How risk strategies affect cost of capital (2 marks)

**(6 marks)**

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**(b) Report to the Board of Directors of SAVANNAH Co**

**The Report to BOD:**

**To:** Board of Directors, SAVANNAH Co
**From:** Financial Consultant
**Subject:** Evaluation of Strategic Proposals and Capital Structure Impact
**Date:** [ DD/MM/YYYY]

**Part (i): Estimate Current and Revised Cost of Equity and WACC**

**1. Current Capital Structure (Market-based)**

Share Capital:

- $0.50/share → 40,000 / 0.5 = 80 million shares
- Share price = $3 → Market value of equity = 80m × $3 = **$240m**

Debt:

- Bonds = $100m (assume trading at par) → Market value of debt = **$100m**

**Capital Structure (Market Value):**

- Equity = 240m - Debt = 100m - Total Capital = 340m

**Current Cost of Equity – CAPM**

$$Ke = R_f + \beta \times \text{MRP}$$
$$Ke = 3.6\% + 1.1 \times 6.5\% = 10.75\%$$

**Current Cost of Debt (Post-tax)**

- Credit rating: **BBB → spread 1%**
- Pre-tax cost = 3.6% + 1.0% = **4.6%**
- Post-tax = 4.6% × (1 − 0.19) = **3.726%**

**Current WACC**

$$\text{WACC} = \left(\frac{240}{340} \times 10.75\%\right) + \left(\frac{100}{340} \times 3.726\%\right) = 7.588\% + 1.096\% = \boxed{8.68\%}$$

**<u>First Director's Proposal</u>**

- Divest renewable energy → non-current assets ↓ 25% = 260m × 25% = **$65m**
- Current liabilities ↓ 12% = 20m × 12% = 2.4m → new CL = **$17.6m**
- After-tax gain = 18% of $65m = $11.7m → total cash inflow = **$76.7m**
- Use $76.7m + cash (assumed $0) to repay 75% of bonds → repay 75m → new debt = **$25m**
- New credit rating = A → debt spread = 0.5% → cost of debt = 3.6% + 0.5% = **4.1%**
- Post-tax cost of debt = 4.1% × (1 – 0.19) = **3.321%**

**Beta Adjusted for Divestment**

Use asset beta approach:
Let B_total = 1.1, B_RE = 0.55
Weight of renewable = 65/260 = 25%
So:

$$\text{Beta}_{agribusiness} = \frac{1.1 - (0.25 \times 0.55)}{0.75} = \frac{1.1 - 0.1375}{0.75} = 1.283$$
$$\text{New Ke} = 3.6\% + 1.283 \times 6.5\% = \boxed{11.94\%}$$

New Capital Structure:

- Equity = $240m + 11.7m gain = **$251.7m**
- Debt = $25m
- Total = 276.7m

$$WACC = \left(\frac{251.7}{276.7} \times 11.94\%\right) + \left(\frac{25}{276.7} \times 3.321\%\right) = 10.86\% + 0.30\% = \boxed{11.16\%}$$

**Second Director's Proposal**

- Add $60m in debt → total debt = 160m
- Credit rating = B → spread = 2.2% → cost = 5.8% given
- Post-tax = 5.8% × 0.81 = **4.698%**
- Beta of diversified firm = 1.18
- Ke = 3.6% + 1.18 × 6.5% = **11.27%**

New Capital Structure:

- Equity = 240m - Debt = 160m - Total = 400m

$$WACC = \left(\frac{240}{400} \times 11.27\%\right) + \left(\frac{160}{400} \times 4.698\%\right) = 6.76\% + 1.88\% = \boxed{8.64\%}$$

**Marking Guide (15 marks)**

- Cost of equity (current and revised): 4 marks
- Cost of debt (current and revised): 3 marks
- WACC calculations: 5 marks
- Beta adjustments and assumptions: 3 marks

**(15 marks)**

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**Part (ii): Impact on After-tax Earnings and Financial Position**

**Current earnings:** $24m

**First Proposal:**

- Non-current assets ↓ 25% → fall in earnings = 10% = $2.4m
- New earnings = **$21.6m**
- Net cash gain (sale + gain): 76.7m
- Bonds reduced to $25m
- Equity increases by $11.7m (gain added to retained earnings)
- CL falls by $2.4m

**Second Proposal:**

- Assets ↑ by $60m → Return = 8.5% × $60m = **$5.1m**
- New earnings = 24m + 5.1m = **$29.1m**
- Bonds ↑ to $160m, CL ↑ to $24m
- No change in equity

**Marking Guide (6 marks)**

- Earnings impact: 2 marks
- Debt and equity effects: 2 marks
- Asset and liability changes: 2 marks

**(6 marks)**

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**Part (iii): Critical Evaluation and Recommendation**

**First Proposal:**
Pros:

- Deleveraging → reduced financial risk
- Improved credit rating → cheaper debt
- Increased focus on core sector

Cons:

- Lower earnings
- Reduced diversification
- Potential missed growth in renewables

**Second Proposal:**
Pros:

- Revenue diversification
- Higher earnings
- Modernizing the business

Cons:

- High financial risk (downgrade to B−)
- Risk of failure in digital ventures
- Increased gearing

**Recommendation:**

- Second proposal provides long-term growth with acceptable WACC (8.64% vs. current 8.68%)
- First proposal increases WACC to 11.16% and reduces earnings
- Recommend a **hybrid strategy** or gradual diversification with ERM support to manage financial risk.

**Marking Guide (7 marks)**

- Pros and cons: 4 marks
- Recommendation and justification: 3 marks

**(7 marks)**

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**Professional Marks – Report Format, Structure, and Clarity**

**(7 marks)**

- Clear headings, logical structure (To, From, Subject)
- Use of tables, formulae
- Effective explanation and clarity in analysis

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**(c) Enterprise Risk Management vs. Structural Change**

**Definition**:
ERM is a structured approach to identifying, assessing, and managing risk across an enterprise.

**Reasons to Choose ERM Over Structural Changes**:

- Enables ongoing risk monitoring without drastic disruption
- Preserves valuable diversification
- More flexible and cost-effective
- Reduces both operational and financial risks through informed decision-making
- Supports better capital allocation
- Avoids short-term shocks to performance, debt ratings, and market confidence

**Marking Guide (6 marks)**

- Definition and function of ERM: 2 marks
- Strategic advantages of ERM: 4 marks

**(6 marks)**

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**Professional marks** - for the structure, clarity, and presentation of your report.

**(3 marks)**

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## Answer for Question Two – Kordofan Co

### (a) Calculation and commentary on cost of equity and WACC before and after the proposal

- **1: Current capital structure and values**

**Step 1: Cost of Equity – Before the Proposal**

Equity beta = 1.1 , Risk-free rate (Rf) = 4% , Market risk premium (Rm – Rf) = 6%

Cost of equity (Ke)} = Rf + beta (Rm-Rf) = 4% +1.1×6%= 10.6. **Ke = 4%+6.6%=10.6%**

**Step 2: Cost of Debt – Before the Proposal**

Debt is BBB rated, Credit spread = 0.9% , Risk-free rate = 4%

Cost of debt = 4% + 0.9% = 4.9% . After tax cost of debt, **Kd = 4.9% × (1-0.20) = 3.92%**

**Step 3: Market Value of Equity**

FCFE = $2.6m, and 60% of that is distributed, so:

Dividends = 0.6 × 2.6 = $1.56m , Growth = 0.4 × 2.6 = $1.04m reinvested

Using the constant growth FCFE model:

g =1.04m/2.6m =40% g (reinvestment rate = growth rate).

E = FCFE / (Ke−g) = 2.60 / (1.06 – 0.4) = $38.24 million

**Step 4: Market Value of Debt (Assume at par)**

Since the bonds are not traded, and they are redeemable at par in 3 years, we assume:

Market value of debt (D) = $42 million

**Step 5: WACC – Before the Proposal**

E=38.24 , D=42D , V=E+D=80.24

WACC =(E/V ×Ke)+(D/V×Kd) , WACC = (38.24 / 80.24 × 10.6%)+(42 / 80.24 × 3.92%)

WACC = (0.4766×10.6%)+(0.5234×3.92%) **= 7.10**

- **Now After the Proposal:**

**Assumptions:**

The company will reduce debt by **70%**, so:

D new =0.3×42 = $12.6 million

Credit rating improves to **A+**, so credit spread = 0.6%

New after-tax cost of debt = (4% + 0.6%) × (1 − 0.2) =4.6% × 0.8 **= 3.68%**

Business becomes **100% hotel services**, so we re-estimate asset beta.

**Step 6: Recalculate Beta – After the Proposal**

We're told:

Current business mix: 60% hotel services - 40% property , Current equity beta = 1.1

Debt beta = 0 - Tax rate = 20%

- Current capital structure:

  Equity = $38.24m , Debt = $42m

  D/E = 42 / 38.24 = **1.0986**

We calculate asset beta (unlevered beta):

$\beta a=\beta e / \{1+(1-T)xDE\} =1.1/\{1 +(0.8 x1.0986\} =1.1/1.8789 = 0.5854$

Now that the company focuses solely on **hotel services**, we use this asset beta as the beta for hotel operations.

Relever using new D/E:

- New D = 12.6 million , E stays at 38.24 million, D/E = 12.6 / 38.24 = 0.3296

$\beta e\_new = \beta a \cdot [1+(1-T) \times D/E] = 0.5854 \times \{1+ (0.8 \times 0.3296)\} = 0.5854 \times 1.2637 =$ **0.7397**

**Step 7: Cost of Equity – After the Proposal**

Ke_new =4% + (0.7397 × 6%) **= 8.44%**

**Step 8: WACC – After the Proposal**

- D = $12.6m - E = $38.24m - V = 50.84m

**WACC = {38.24 / 50.84 × 8.44%} + {12.6 / 50.84 × 3.68%} = 7.26%**

The assumption that Kordofan Co's market value of equity will remain unchanged after the proposal may be unrealistic and should be examined critically. Several factors could lead to a change in equity value following the implementation of the proposal:

| Metric | Before | After |
|---|---|---|
| Cost of equity | 10.6% | 8.44% |
| After-tax cost of debt | 3.92% | 3.68% |
| Equity beta | 1.10 | 0.74 |
| WACC | **7.10%** | **7.26%** |
| Gearing (D/E) | 1.10 | 0.33 |

**(16 marks)**

Professional marks will be awarded in part (a) for the clarity, and professional presentation.

**(5 marks)**

**(a) Discuss the validity of the assumption that the market value of equity will remain unchanged after the implementation of the proposal.**

**1. Change in Business Risk Profile**

By refocusing exclusively on hotel services, the company is effectively changing its business mix. The hotel services business may carry different operating risks compared to the property segment. Based on the information provided:

- The asset beta of the current business is estimated at 0.585, reflecting a blend of hotel and property risks.
- Focusing only on hotel services may lead to increased operating volatility, especially due to dependence on tourism, occupancy rates, and economic cycles.

As risk perception changes, so may the required return on equity, affecting the valuation.

**2. Change in Capital Structure**

The proposal involves reducing non-current liabilities (debt) by 70%, which significantly reduces financial leverage.

- Lower leverage generally reduces financial risk, leading to a lower equity beta and potentially a lower cost of equity.
- However, less debt also reduces the benefit of the tax shield, potentially increasing the weighted average cost of capital (WACC).
- A higher WACC could reduce the present value of future cash flows and hence lower equity value, unless offset by improvements in free cash flows.

**3. Impact on Free Cash Flow to Equity (FCFE)**

The proposal may impact future FCFE in several ways:

- Lower interest payments due to reduced debt would increase FCFE.
- However, refocusing the business may result in initial restructuring costs, transitional inefficiencies, or even lower revenue if non-core (property) income is lost.
- Thus, future FCFE may increase or decrease, affecting equity valuation.

**4. Market Perception and Strategic Focus**

- Investors may view the strategic shift positively if the hotel services segment has higher growth potential or stronger core competencies, possibly increasing equity value.
- On the other hand, if the property segment provided stable cash flows, its removal might be seen as increasing earnings volatility, which could reduce perceived value.

**5. Information Asymmetry and Signaling**

- The restructuring may be perceived by investors as a signal of internal challenges, particularly if the property segment is seen as being exited due to poor performance.
- Alternatively, reducing debt and improving the credit rating might signal strength and lower risk, increasing investor confidence.

**Conclusion**

It is unlikely that the market value of equity will remain exactly unchanged after the proposal. While reduced debt and increased business focus may lead to some positive valuation effects, other factors such as the loss of diversification, changes in business and financial risk, and changes in FCFE can influence equity value both positively or negatively.

Thus, the assumption may be overly simplistic, and a detailed valuation reassessment should be conducted post-implementation.

**(4 marks)**

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## Answer for Question Three – Zoraya Ltd

### (a) Hedging Strategy for the €10 million Payment

Zoraya Ltd is due to make a **€10 million payment in 6 months** and faces euro appreciation risk. We will evaluate three hedging strategies: **forward contract**, **money market hedge**, and **options**, then recommend the most suitable.

**1. Forward Contract Hedge**

Forward rate (6-month) =1.1500 GBP/EUR

GBP payable = €10,000,000 /1.1500 **= £8,695,652**

- Fixed outcome: no upside if EUR depreciates.
- Suitable for budgeting certainty.

**2. Money Market Hedge**

**Step 1: Calculate present value of €10m payable (discounted at EUR deposit rate)**
6-month deposit rate (EUR) = 2.5% p.a. → 1.25% for 6 months

PV = €10,000,000 / 1.0125 = €9,876,543

**Step 2: Convert to GBP at spot rate**

GBP = €9,876,543 / 1.1700 = £8,439,781

**Step 3: Borrow GBP today and repay in 6 months**
GBP 6-month borrowing rate = 3.8% p.a. → 1.9% for 6 months

Repayment=£8,439,781 x 1.019 **= £8,599,139**

**Effective cost = £8.6 million**, lower than forward.

**3. Options Hedge**

**Buy EUR put / GBP call at strike rate 1.1600 (6 months)**
Premium = 0.0120 × €10,000,000 = **£120,000**

- If EUR appreciates (GBP weakens), exercise option:

GBP payable = €10,000,000 / 1.1600 = £8,620,690GBP

Total cost = £8,620,690 + £120,000 = **£8,740,690**

- If EUR weakens below 1.1600, let option lapse and use spot or forward market.

Advantage: **Upside flexibility**, downside protection.
Disadvantage: More expensive due to premium.

**4. Summary Table**

| Method | GBP Outflow | Comments |
|---|---|---|
| Forward Contract | £8,695,652 | Simple and certain |
| Money Market Hedge | £8,599,139 | Cheapest, but operationally more complex |
| Option | £8,740,690 | Flexibility if EUR weakens, costly premium |

**Recommendation:**

The money market hedge offers the lowest GBP cost. However, it involves borrowing and early conversions, which may have cash flow implications.

If certainty is preferred, the forward contract is simple and effective.

If Zoraya Ltd expects EUR to weaken or values flexibility, the option provides protection with upside potential.

Recommendation: Use a forward contract to lock in costs and support budgeting, given the firm's exposure and operational focus.

**(10 marks)**

**Professional Presentation Marks (5):**

- Clear structure (headings, steps, and summaries)
- Logical flow of calculations and explanation
- Concise and relevant commentary
- Clear final recommendation
- Professionally formatted tables and financial reasoning

**(5 marks)**

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**(b) Hedging the $12 Million Receivable**

Zoraya Ltd expects to receive $12 million in 4 months, exposing it to the risk of USD depreciation.We evaluate forward, money market, and options.

**1. Forward Contract**

4-month forward not provided, approximate using 6-month forward rate:

Forward rate (GBP/USD)=1.2700

GBP inflow = 12,000,000 / 1.2700 = £9,448,819

**2. Money Market Hedge**

**Step 1: Discount USD receivable at 2.5% for 4 months → 0.833%**

PV = 12,000,000 / 1.00833 = $11,900,047}

**Step 2: Convert to GBP at spot: 1.3000**

GBP = 11,900,047 / 1.3000 = £9,153,882GBP

**Step 3: Invest in GBP deposit at 3.0% p.a. for 4 months → 1.0%**

Future GBP inflow = £9,153,882 x 1.01 = £9,245,421

**3. Options**

Buy **USD call / GBP put** (strike: 1.2900, premium: £0.0105)

Exercise if spot < 1.2900

GBP = 12,000,000 / 1.2900 = £9,302,326

Premium = 0.0105 x 12,000,000 = £126,000
Net inflow = £9,302,326 – £126,000 = **£9,176,326**

**Summary and Recommendation**

| **Method** | **Net GBP Inflow** |
|---|---|
| Forward | £9,448,819 |
| Money Market | £9,245,421 |
| Option | £9,176,326 |

**Recommendation**: **Forward contract** gives the highest guaranteed GBP inflow and is operationally simple. Unless the firm expects significant USD appreciation, this is the most effective hedge.

**(4 marks)**

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**(c) Interest Rate Risk & Interest Rate Swap**

**Exposure:**

- Zoraya Ltd has a £15 million floating-rate loan linked to 6-month SOFR, currently 3.5%, forecast to rise to 5.0%.
- This creates exposure to rising interest payments and cash flow volatility.

**Interest Rate Swap Solution:**

Use a pay-fixed, receive-floating interest rate swap to:

- Lock in a fixed interest rate, creating certainty over future debt servicing costs.
- Receive SOFR to offset actual loan payments.

**Financial Considerations:**

- If SOFR rises as forecast (to 5.0%), the swap protects against higher costs.
- Certainty in interest costs supports cash flow planning and budgeting.
- May limit benefit if SOFR unexpectedly falls.

**Strategic Considerations:**

- Swap aligns with the company's objective to reduce volatility in cash flows.
- Enables more predictable performance, which can support credit ratings and investment decisions.
- Possible opportunity cost if interest rates fall below the fixed swap rate.

**Conclusion:**

Given rising interest rate forecasts and the firm's desire for stability, an interest rate swap is an effective hedge, offering protection and cash flow predictability.

**(6 marks)**

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## Answer for Question Four – Verda plc & NovaTech Ltd

**(a) Estimate the value of NovaTech using the Gordon Growth Model.**

**Formula:**

Value of Equity =

$$\text{Value of Equity} = \frac{E_1}{r_e - g}$$

E1 = Next year's earnings =4.5 x 1.10 = £4.95m

re = Cost of equity = 3.5% + (1.6×6%) =13.1% %

g = 10%

Equity Value = 4.95 / (0.131−0.10) = 4.95 / 0.031 ≈ £159.68 million

**Presentation Note:** The Gordon Growth Model is appropriate here as NovaTech has maintainable earnings and a long-term growth expectation.

**(4 marks)**

**(b) Calculate WACC for NovaTech (Post-acquisition structure)**

**Target Capital Structure:**

Equity: 60% - Debt: 40% - Tax rate: 19%

Cost of equity (re) = 13.1% (from part a)

After-tax cost of debt = 5% x (1 − 0.19) =4.05%

WACC = (0.6 x 13.1%) + (0.4 x 4.05%) = 7.86% + 1.62% =9.48%

**(4 marks)**

**(c) Evaluate whether the cash offer of £48m is financially justifiable**

**Step 1: Adjust GGM Value for Synergies and Integration Costs**

Synergy value (PV of perpetuity) = 1 / 0.0948 ≈ £10.55 million

Integration cost (discounted for 1 year) = 3 / 1.0948 ≈ £2.74 million

**Total Adjusted Value:**

159.68 + 10.55 − 2.74 = £167.49 million

**Value per share:**

167.49 / 10 = £16.75 per share

**Compare with offer:**

Cash offer = £48 million total = £4.80/share

**Conclusion:** The intrinsic value (£16.75/share) far exceeds the offer price (£4.80/share). The acquisition appears financially very favorable to Verda if synergies are realized.

**(8 marks)**

Professional marks will be awarded in part (a) for the clarity, and professional presentation.

**(5 marks)**

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**(d) Strategic and Financial Considerations in Offer Method**

| **Criteria** | **Cash Offer** | **All-Share Offer** |
|---|---|---|
| **Control** | Verda retains full control | Dilution of existing shareholders |
| **Cash Flow Impact** | Reduces cash reserves / increases debt | No immediate cash outflow |
| **Valuation Risk** | Low risk – locked price | Risk if Verda's share price fluctuates |
| **Shareholder Perception** | Clear cost, may show strength | May be preferred if Verda shares are overvalued |
| **Integration Signal** | Strong commitment | Potential alignment via shared ownership |

Verda should consider its share price strength, liquidity, and shareholder preferences. If its shares are perceived as fairly valued or undervalued, a cash offer may be strategically stronger and more accretive.

**(4 marks)**