Navigating Capital Budgeting Dilemmas: Theory Versus Practice at Clarence Infra Projects Ltd

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Robin Thomas[1]

Abstract

The case study explores the capital budgeting challenges faced by Clarence Infra Projects Ltd, a company deeply committed to maximising shareholder value while navigating the complex world of capital investments. Despite their dedication to value maximisation, the company sometimes made decisions that contradicted this principle due to practical considerations. These contradictions highlight the real-world complexities of decision-making and the need to balance theory with pragmatism. The study presents three investment choices: solar power expansion, wind farm development, and hydroelectric power plant, each with distinct cash flow patterns. The managers traditionally used the payback period method, but they also employed the discounted cash flow methods, including net present value and internal rate of return, to evaluate the projects. Sensitivity analysis under various reduction scenarios is conducted to assess the resilience of the projects. Ultimately, the case highlights the importance of aligning financial theory with real-world complexities to make informed investment decisions.

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[1] Faculty in Management, VEC Ambikapur, Chhattisgarh Swami Vivekanand Technical University, Bhilai, Chhattisgarh, India

Corresponding Author:
Robin Thomas, Faculty in Management, VEC Ambikapur, Chhattisgarh Swami Vivekanand Technical University, Bhilai, Chhattisgarh 491107, India.
E-mail: robinthomas2006@gmail.com

Introduction

In the bustling world of Clarence Infra Projects Ltd, where each decision carried the weight of the company's future, the finance theory was a guiding star. The Managing Director Mr Clarence Lintana held a degree in business management and had been at the helm of affairs from the last 20 years. The baton of affairs he had received from his father, a first-generation entrepreneur, a rancher's son who studied engineering and started the Clarence Infra Projects Ltd, named after his son, who is now the MD. Here, the seasoned managers understood that their choices had a direct impact on the firm's growth and prosperity. As they navigated the complex landscape of capital investments, the mantra remained clear: undertake projects only if they contribute to the company's overall value. With a singular focus on maximising shareholder value, Clarence Infra Projects Ltd's managers were diligent in their pursuit. They combed through potential projects with a discerning eye, identifying those that promised to enhance the company's worth. This commitment to value creation was not just a philosophy; it was a commitment that ran deep within the company's culture, driving every decision and action they took.

The process of choosing corporate projects can be intricate, but organisations design capital budgeting systems to add some order to the decision-making process. A key component of this system involves categorising projects based on specific criteria. Thus, it seems evident that the primary aim of this classification system is to facilitate the selection of capital projects within an organisational setting (Piper, 1980).

However, despite Clarence's managers wholehearted commitment to wealth maximisation, there were instances where the company's legacy choices seemed to contradict the concept of value maximisation. These anomalies arose from practical considerations, as some projects were assessed using the less theoretically robust payback period method rather than the more rigorous DCF (discounted cash flow) method. The reason was the ease of computing the payback period, which provided a simpler and more practical solution, even if it diverged from the ideal of strict value maximisation (Garrett & Garrett, 1989; Oosterom & Hall, 2022).

These contradictions between theory and practice offered a glimpse into the complexities of real-world decision-making at Clarence Infra Projects Ltd. They demonstrated that while theory provided a solid foundation, the company sometimes had to make pragmatic decisions in pursuit of their long-term success.

This case provides a comprehensive view of the capital budgeting problem within a real-life scenario through the eyes of Clarence Infra Projects Ltd. It illuminates the ongoing struggle between legacy practices, which may be rooted in convenience and familiarity, and the practices that theoretically should be followed to achieve maximum value. These dilemmas highlight the practical challenges faced by companies as they strive to align their decisions with the ideal of value maximisation.

This case sheds light on some of the shortcomings of capital budgeting tools. It underscores the fact that while these tools offer valuable insights into investment decisions, they are not without limitations. In the quest for financial prudence, companies must navigate the complexities of actual decision-making, considering factors such as ease of computation and immediate practicality.

About Clarence Infra Projects Ltd

Located at the forefront of the dynamic infrastructure development sector, Clarence Infra Projects Ltd is a visionary company with a legacy dating back to 1995. Notably, the company made its foray into the public stock exchange a decade ago, successfully listing itself through an initial public offering (IPO). Since that pivotal moment, Clarence Infra Projects Ltd has emerged as a distinguished leader in the industry.

The Company's Journey

Clarence Infra Projects Ltd began its journey with a modest team of visionary engineers who collectively aspired to craft sustainable and impactful infrastructure solutions for communities. They initiated their venture with small-scale projects and a shared commitment to uncompromising excellence. Through the years, Clarence Infra Projects Ltd has evolved into a distinguished industry leader, renowned for its steadfast devotion to quality and innovation.

The Company's Vision

The company envisions a world where infrastructure transcends conventional brick-and-mortar constructs and becomes a powerful agent of progress. The company's vision is centred on constructing sustainable, smart and community-oriented infrastructure that not only enhances the quality of life but also contributes to the broader betterment of society.

Clarence Infra Projects Ltd: A Glimpse into Book Value, Market Capitalisation and Order Book

Book Value

Clarence Infra Projects Ltd, a leading firm in the world of infrastructure development, proudly boasts a substantial book value of $700 million. This book value, a testament to the company's financial strength, is derived by meticulously subtracting its liabilities from its substantial asset base.

Over the years, Clarence Infra Projects Ltd has made strategic investments in its infrastructure, assets and ongoing initiatives, resulting in consistent growth of its book value. Shareholders can take comfort in the fact that this figure reflects a firm financial footing and a promising future for the company.

Market Capitalisation

The market capitalisation of Clarence Infra Projects Ltd is an impressive $2,000 million, signifying its substantial standing in the financial markets.

This figure is a product of the company's current stock price, multiplied by its 100 million outstanding shares. It encapsulates the market's perception of the company's value. At the current capitalisation, the per-share price of the company is $2,000 per share.

Clarence Infra Projects Ltd's market capitalisation is a true reflection of its reputation, outstanding performance and the confidence investors place in its trajectory. As the company continues to excel in its infrastructure endeavours and uphold its promises, its market capitalisation steadily climbs, reinforcing belief in its future prospects.

Order Book

The current open order book of Clarence Infra Projects Ltd is robust, amounting to $1,500 million for this financial year, with more than $700 million in orders in the final stages of confirmation. The open order book represents the aggregate value of confirmed contracts and projects that the company has secured but is yet to complete. It provides a window into the company's short- to medium-term revenue and project completion timelines.

Clarence Infra Projects Ltd's order book continues to thrive due to its sterling reputation for timely project delivery and unwavering commitment to quality standards. The company's history of securing and executing projects efficiently has led to a flourishing order book, cementing its position as a foremost player in the infrastructure development sector.

Cutting-edge Technology

In light of Clarence Infra Projects Ltd's successful public offering a decade ago, the company has made strategic use of the proceeds from the IPO to enhance and modernise its infrastructure, including its plant and equipment. This forward-looking approach has positioned the company as a leader in the industry with state-of-the-art equipment and facilities. As a result, many of the company's existing projects benefit from cutting-edge technology and require minimal to no replacement or modernisation.

The company's dedication to maintaining and updating its infrastructure has not only improved operational efficiency but has also significantly extended the lifespan of its assets. This prudent financial strategy has allowed Clarence Infra Projects Ltd to focus on new opportunities, innovation and sustainable growth.

With the majority of its projects benefiting from top-tier equipment and facilities, the company is well prepared to continue delivering high-quality infrastructure solutions and meet the demands of an ever-evolving industry. This commitment to excellence and innovation further solidifies Clarence Infra Projects Ltd's reputation as a pioneering force in the world of infrastructure development. Subsequently, the company does not have any mid-term need for replacement, modernisation or cost-reduction investment strategies.

Recent Board Decision

In a recent board meeting, Clarence Infra Projects Ltd's leadership, recognising the company's strong financial standing and impressive track record, has made a strategic decision to explore new avenues for expansion and diversification. The primary objective is to drive revenue growth and further solidify the company's position in the market.

New Projects (Revenue Expansion Investments)

The resolution in the recent board meeting dictated the managers to come up with new projects, either for related or unrelated diversification with an aim for revenue expansion. However, there was one impediment. The initial outlay which the company can fund was limited to $600 million. With an aim towards green energy and with the brief that the projects have to be mutually exclusive subject to the given maximum outlay, the managers came up with the following project proposals:

Investment Choice 1: Solar Power Expansion

The first investment option, the 'Solar Power Expansion', is a forward-looking project designed to harness the Sun's energy for sustainable power generation. With an initial investment of $600 million, this venture promises a bright future. This choice aligns with the company's commitment to environment-friendly solutions and offers the potential for significant long-term returns.

Investment Choice 2: Wind Farm Development

The second investment opportunity, 'wind farm development', is a venture into wind energy, with an initial investment of $600 million. Wind power represents a clean and renewable energy source, aligning with company's sustainability goals. This choice offers not only financial promise but also an opportunity to contribute to a greener future.

Investment Choice 3: Hydroelectric Power Plant

The third choice, 'hydroelectric power plant', involves the development of a hydroelectric facility, with an initial investment of $600 million. Hydroelectric power is known for its reliability and minimal environmental impact, making it an attractive option. Company's investment in this sector not only promises strong financial returns but also underscores its commitment to sustainable energy solutions. Refer to Table 1 for cash flow projections.

Table 1. Cash Flows of the Alternative Projects.

Year	Choice 1: Solar Power Expansion	Choice 2: Wind Farm Development	Choice 3: Hydroelectric Power Plant
Year 0	−600	−600	−600
Year 1	201	100	−60
Year 2	120	180	250
Year 3	200	220	350
Year 4	203	250	450
Year 5	194	186	−50

Notes: Amounts are in million dollars. Negative sign shows cash outflow.

Conventional Versus Non-conventional Investments

Conventional Investment

A conventional investment exhibits a distinct cash flow pattern, commencing with an initial cash outlay that results in negative cash flows, followed by a series of positive cash inflows. Typically, in such investments, there is just a single change in the direction of cash flows, transitioning from an initial negative investment to subsequent positive cash inflows. This cash flow pattern is often symbolised as − + + +, where the '−' denotes the initial investment and the '+' symbols represent favourable cash inflows in subsequent time periods (Bierman & Smidt, 2012).

Non-conventional Investment

On the contrary, a non-conventional investment portrays a blend of cash outflows and inflows throughout the project's duration. In these types of investments, multiple alterations in the signs of cash flows are observed, encompassing both unfavourable and favourable cash flows occurring at diverse points in time. The cash flow pattern in non-conventional investments can be considerably more intricate, as illustrated by − + + + − ++ − +, in which the '−' stands for initial investments, the '+' denotes positive cash inflows and '++' represents detrimental cash outflows during specific periods (Bierman & Smidt, 2012).

Thus, for a conventional stream of cash flows, the cash flow at time $t = 0$ is negative and subsequently for $t = 1, 2,\ldots,n$, is positive, whereas in a non-conventional cash-flow stream, the cash flow at time $t = 0$ is positive and subsequently for $t = 1, 2,\ldots,n$, are either positive or negative.

Evaluating the Cash Flow Pattern of Alternatives

The finance managers of the company had to evaluate the three alternatives before they could present those before the board. The initial outlay for all three projects is the same, that is, \$600 million. However, the cash inflows for the three projects are quite distinct. While the solar power plant and the wind power plant have conventional cash flows, the hydro-power plant has non-conventional cash flows.

Payback Period of the Projects

Traditionally, the finance managers of the company had evaluated the projects based on their payback period. And this time also, they were adamant to find out the payback period of the project, despite knowing that this method is not consistent with the wealth maximisation criterion. Still, traditions demand it, and so do the managers.

The payback period is calculated as

$$\mathrm{Pb} = Y + \left[\frac{\left(C_0 - \sum \left(\mathrm{CF}\_t \right) \right)}{\mathrm{CF}\_\left(Y + 1 \right)} \right] \tag{1}$$

where Pb is the payback period (in years); Y is the year before full recovery (whole no. of years); C_0 is the initial investment amount; CF_t is the total cash flows from year 1 to Y; CF_(Y + 1) is the cash flow in the year Y + 1.

The shortest payback period in years, which is 3.14 years, is associated with Choice 3, specifically the hydroelectric power plant. This indicates that the hydroelectric power plant is expected to recover its initial investment in the shortest time compared to the other two choices. However, it is important to note that the payback period method has certain limitations and does not provide a comprehensive view of the project's profitability. Refer to Table 2 for payback period calculations.

Disregarding Cash Flows

The payback period method is inadequate for assessing the profitability of an investment project because it disregards crucial aspects of the project's financial performance. In the case of Choice 3, the payback period fails to consider the entire sequence of cash flows. This means it does not account for the full scope of financial returns generated by the project (Lefley, 1996).

Table 2. Payback Period Calculations ($ Millions).

Year	Choice 1: Solar Power Plant	Cumulative Cash Flows Choice 1	Choice 2: Wind Farm Development	Cumulative Cash Flows Choice 2	Choice 3: Hydroelectric Power Plant	Cumulative Cash Flows Choice 3
0	−600	–	−600	–	−600	–
1	201	201	100	100	−60	−60
2	120	321	180	280	250	190
3	200	521	220	500	350	540
4	203	724	250	750	450	990
5	194	918	186	936	−50	940

PBP for Choice 1: payback period = 3 years + (79/203) years = 3.39 years or 3 years and 4.5 months.
PBP for Choice 2: payback period = 3 years + (100/250) years = 3.4 years or 3 years and 4.8 months.
PBP for Choice 3: payback period = 3 years + (60/450) years = 3.14 years or 3 years and 1.6 months.

Neglecting Cash Flow Patterns

Another limitation of the payback period method is its disregard for the patterns of cash inflows, including their magnitudes and timing. It treats returns of equal amounts equally, even when they occur in different time periods. To illustrate, all three choices involve equal initial investments and generate equivalent total cash inflows over nearly identical time periods. However, a closer examination of the cash flows reveals significant differences (Lefley, 1996; Yard, 2000).

Discounted Cash Flow Methods

Net Present Value Method

NPV, which stands for net present value, is a widely utilised financial metric for assessing the profitability of an investment or project. It takes into consideration the concept of the time value of money, recognising that a rupee received or spent in the future is inherently worth less than a rupee received or spent today. NPV is a measure that quantifies the disparity between the present value of cash inflows and the present value of cash outflows over the entire lifespan of an investment or project. In simpler terms, it calculates the net gain or loss of an investment in today's monetary terms (Osborne, 2010).

The formula used to compute NPV is as follows (Fabozzi & Peterson, 2003):

$$\text{NPV} = \sum_{(t=0)}^{t} \left(\frac{\text{Cf}_t}{(1+r)^t} \right) - C_0 \tag{2}$$

where NPV signifies the net present value; Cf_t represents the cash flow at a specific time 't'; C_0 is the initial investment amount; 'r' denotes the discount rate, which reflects the time value of money and 't' is the time period.

In NPV analysis, a positive NPV indicates that the investment is expected to generate more cash flows than its costs, signifying a financially prudent decision. Conversely, a negative NPV suggests that the investment may not generate adequate cash flows to cover its costs and may not be a viable project. NPV serves as a valuable decision-making tool in finance and investment, enabling an assessment of the attractiveness and profitability of diverse projects or investments by offering a comprehensive view of their potential impact on the financial position of a company (Osborne, 2010). The basic opportunity cost of capital was this trade-off, the subtle reminder that for every rupee committed to a particular project, there was another path not taken. A path leading to an alternative opportunity with a guaranteed return of 10%.

As far as the cost of capital of the funds which the Clarence Infra Projects Ltd could avail had been discerningly computed by their finance managers, the capital they could have invested here could have been diverted elsewhere, a different endeavour that might have brought forth a 10% return on investment. This 10% benchmark, this opportunity cost of capital, was the silent sentinel of financial strategy. It stood as a reference point against which all investment opportunities

were measured. Was this project, with its promises and potential, more alluring than the certainty of a 10% return elsewhere?

Tables 3–5 exhibit the NPV of the three projects computed at a discount rate of 10%, and Figure 1 represents the NPV profile of the investments.

The NPV of Project 3 (hydroelectric power plant) is marginally higher than the other two alternatives. Based on NPV, therefore, the choice is clear, Clarence Infra Projects Ltd should go with the third choice. But does it? Or further brainstorming remains?

Table 3. NPV for Choice 1.

Solar Power Plant (Cash Flows in Million $)	PVIF@10%	Present Value
−600	1.000	−600.000
201	0.909	182.727
120	0.826	99.174
200	0.751	150.263
203	0.683	138.652
194	0.621	120.459
NPV		91.274
Profitability index (PV of cash inflow/PV of cash outflows)		1.1521

Note: PVIF—Present value interest.

Table 4. NPV for Choice 2.

Wind Farm Development (Cash Flows in Million $)	PVIF@10%	PV
−600	1.000	−600.000
100	0.909	90.909
180	0.826	148.760
220	0.751	165.289
250	0.683	170.753
186	0.621	115.491
NPV		91.203
Profitability index (PV of cash inflow/PV of cash outflows)		1.1520

Table 5. NPV for Choice 3.

Hydroelectric Power Plant (Cash Flows in Million $)	PVIF@10%	PV
−600	1.000	−600.000
−60	0.909	−54.545
250	0.826	206.612
350	0.751	262.960
450	0.683	307.356
−50	0.621	−31.046
NPV		91.336
Profitability index (PV of cash inflow/PV of cash outflows)		1.1522

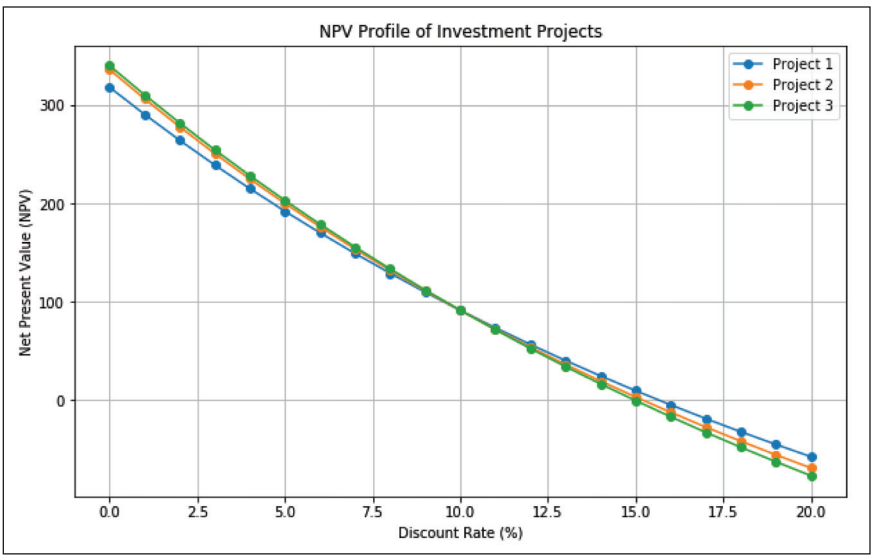

Figure 1. Graph of the NPV Profile.

The Internal Rate of Return

The internal rate of return (IRR) is the discount rate at which the NPV of a series of cash flows becomes zero (Fabozzi & Peterson, 2003; Van Horne, 2002). The IRR is typically found through an iterative approach, and there is not a simple algebraic equation to calculate it directly. The general approach to finding the IRR is as follows:

Set up the NPV equation:

$$\text{NPV} = \sum_{t=0}^{n} \frac{Ct}{(1+r)^t} = 0 \tag{3}$$

where Ct is the cash flow at time t; r is the IRR (which we wish to determine) and n is the time period (numbers).

Subsequently, solve for 'r' by using numerical methods like Newton–Raphson iteration or trial-and-error. The iterative process involves making successive guesses for 'r' and checking if the NPV becomes zero.

We solve Equation 3 by the hit-and-trial method to determine as below.

NPV Versus IRR

No capital budgeting problem can be complete without the discussion on the comparison between NPV and IRR. Please refer to Tables 6–8 for NPV Profile, IRR & Scenario Projection. In our choices too, the NPV and IRR give divergent results. While Project 3 has the highest NPV, it has the lowest IRR. While choosing IRR, the yardstick is that it should be greater than the hurdle rate, in this case, 10%, which it is. While using the IRR method, common problems (Lohmann, 1988; Mackevičius & Tomaševič, 2010; Osborne, 2010; Weber, 2014) are first,

Table 6. NPV Profile.

S. No.	Rate (%)	Project 1	Project 2	Project 3
1	0	318	336	340
2	5	192.05	199.95	202.99
3	10	91.27	91.20	91.33
4	15	9.541	3.12	−0.57
5	20	−57.56	−69.03	−76.92

Table 7. IRR for the Projects.

Choices	IRR (%)
Project 1	15.65
Project 2	15.20
Project 3	14.97

Table 8. Scenario Impact on Cash Flows.

Reduction Scenario (%)	NPV Project 1	NPV Project 2	NPV Project 3
5	56.71	56.64	56.76
10	22.14	22.08	22.20
20	−46.98	−47.03	−46.93

multiple IRRs—the non-conventional cash flows may lead to a polynomial which when solved may have more than one positive roots, that is, two IRRs which will be spurious. Second, the IRR ignores the timings of the cash flows; rather it is focused on the rate of return of the cash flows and this creates a further problem, if the reinvestment rate is different than the assumed internal rate. And lastly and more challengingly, the divergent signals which the NPV and IRR have generated, case in point the third choice Project 3. What will the company do?

Assessing Investment Projects Under Different Reduction Scenarios

Corporate managers engaged in the capital budgeting process employ a variety of techniques. These methods encompass both intuitive, experience-based approaches and analytical strategies, such as sensitivity analysis, scenario analysis, decision-tree analysis and the Monte Carlo method (Karanovic et al., 2010).

Investment decisions are rarely static in the world of finance, and uncertainties often lead to dynamic strategies. As part of Clarence Infra Projects Ltd's financial analysis, the team explored how three different investment projects fare when subjected to various reduction scenarios. These scenarios involve reducing the expected cash flows of the projects by 5%, 10% and 20%. Let us delve into the implications of these scenarios on their investment choices and how they interpreted the sensitivity towards the three scenarios.

Reduction Scenario 1 (5% Reduction)

In this scenario, we consider a 5% reduction in the expected cash flows for each of our three investment projects. This reflects a moderate-risk outlook, recognising

that business conditions may not be as favourable as initially anticipated. The 5% reduction serves as a buffer, allowing us to evaluate how resilient our projects are in the face of a slight downturn.

Reduction Scenario 2 (10% Reduction)

Increasing the level of risk, the 10% reduction scenario presents a more significant challenge. Here, we explore the possibility of a 10% reduction in expected cash flows across the projects. This scenario simulates the impact of a more adverse economic environment, where operational efficiency or market conditions might not align with our initial projections. By reducing cash flows by 10%, we aim to assess whether the projects can still maintain positive NPV values or if they face financial headwinds that call their viability into question.

Reduction Scenario 3 (20% Reduction)

The 20% reduction scenario represents a high-risk exposure. It envisions a substantial setback in cash flows for the investment projects, indicating a scenario where economic conditions have taken a turn for the worse. This serves as a stress test for our investments, intended to evaluate their resilience in the face of severe financial adversity. A 20% reduction in cash flows pushes the projects to their limits, challenging their ability to continue generating positive NPV values. It forces us to consider the worst-case scenario and the potential need for adjustments or mitigating strategies.

Impact on Project 1

Figure 2 exhibits, the sensitivity of Project 1 (solar power plant) NPV, if the cash flows are reduced as depicted in the three scenarios. The percentage reduction in the value of cash-flow slides along the horizontal axis and corresponding NPV values slides along the vertical axis is shown. As exhibited by Figure 2, a decrease of around 13% in the cash flows will render the project untenable.

Figure 3 exhibits NPV profile for Project 1 for the given three reduction scenarios and profiles are compared with the original cash flows, as depicted by the red indicator on Figure 3. The perpendiculars dropped on the horizontal axis represent the IRR for that particular scenario, for example, the original cash flow's IRR is a tad greater than 15%, while for Scenario 3, it is around 6%.

Impact on Project 2

Figure 4 exhibits the sensitivity of Project 2 (wind farm development) NPV, if the cash flows are reduced as depicted in the three scenarios. The percentage reduction in the value of cash-flow slides along the horizontal axis and corresponding NPV values slides along the vertical axis is shown. As exhibited by Figure 4, a decrease

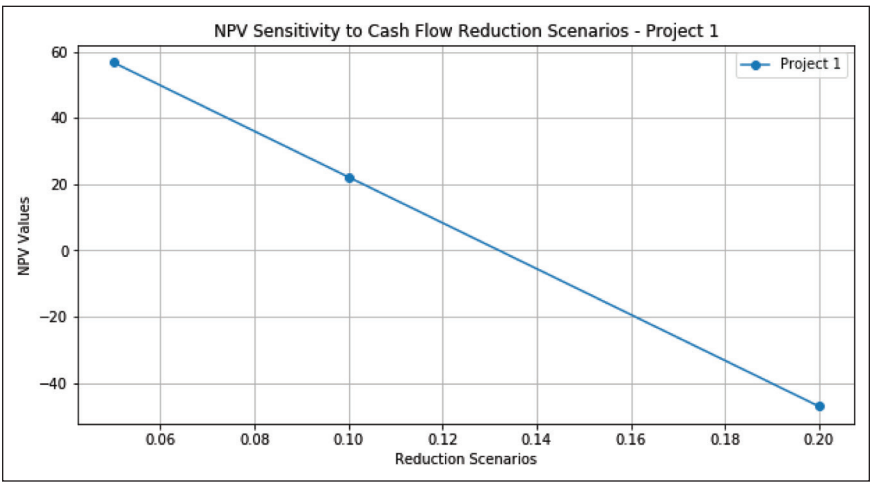

Figure 2. NPV Sensitivity - Project 1.

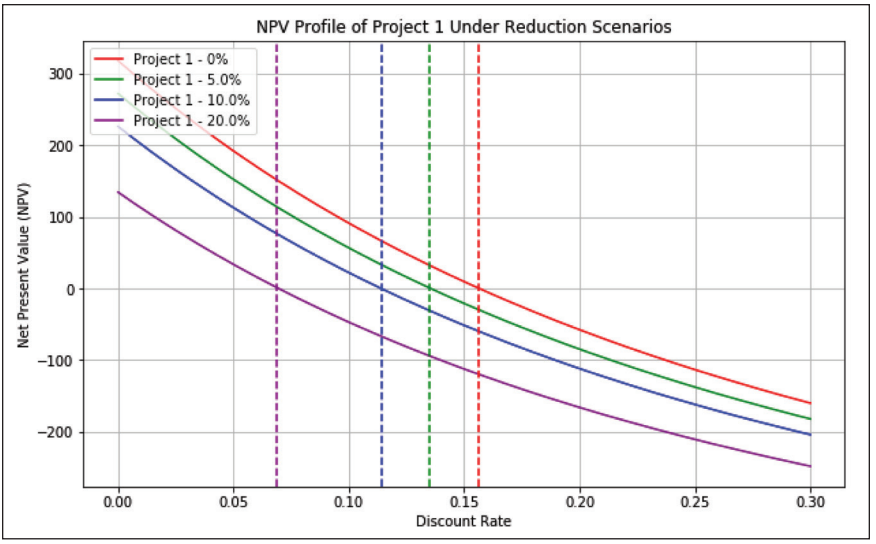

Figure 3. NPV Profile - Project 1, Under Different Scenarios.

of around 13% in the cash flows will render the project untenable, the same as Project 1.

Figure 5 exhibits NPV profile for Project 2 for the given three reduction scenarios and profiles are compared with the original cash flows, as depicted by the red indicator on Figure 5. The perpendiculars dropped on the horizontal axis represent the IRR for that particular scenario, for example, the original cash flow's IRR is a tad greater than 15%, while for Scenario 3, it is around 7%.

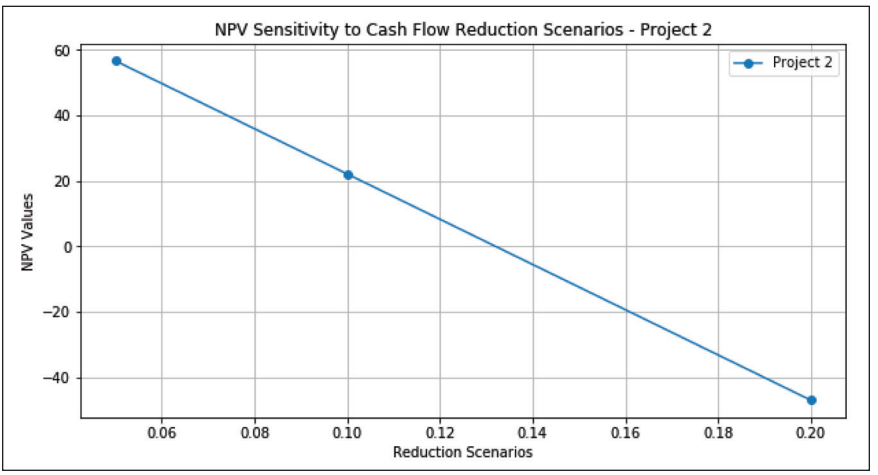

Figure 4. NPV Sensitivity - Project 2.

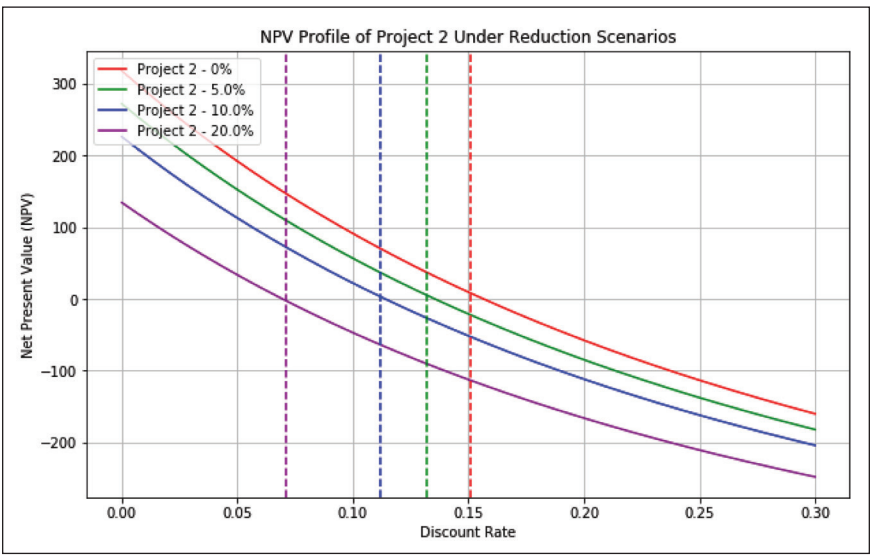

Figure 5. NPV Profile - Project 2, Under Different Scenarios.

Impact on Project 3

Figure 6 exhibits the sensitivity of Project 3 (hydro-electric power plant) NPV, if the cash flows are reduced as depicted in the three scenarios. The percentage reduction in the value of cash-flow slides along the horizontal axis and corresponding NPV values slides along the vertical axis is shown. As exhibited by Figure 6, a decrease of around 13% in the cash flows will render the project untenable, the same as Projects 1 and 2.

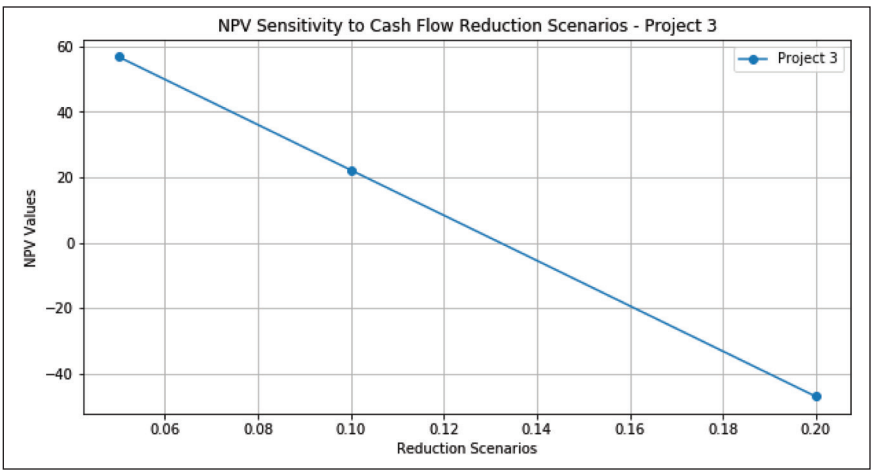

Figure 6. NPV Sensitivity - Project 3.

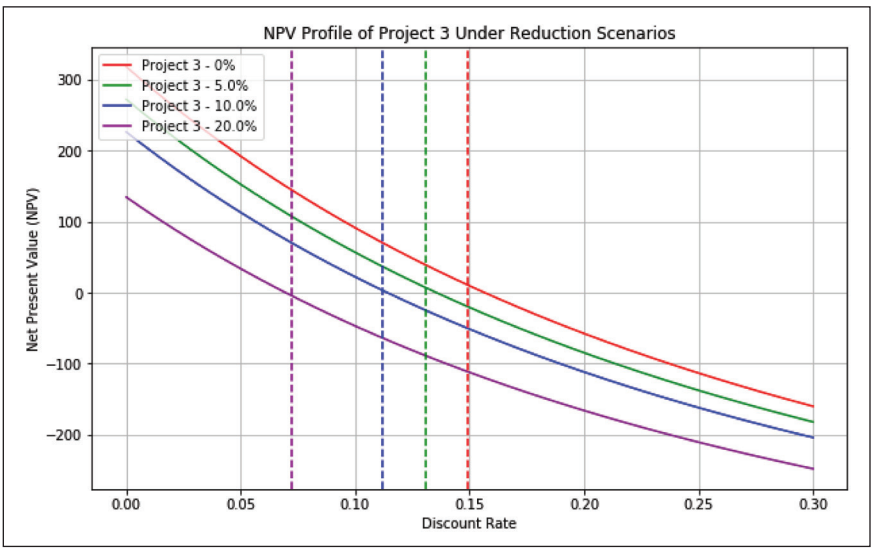

Figure 7. NPV Profile - Project 3, Under Different Scenarios.

Figure 7 exhibits NPV profile for Project 3 for the given three reduction scenarios and profiles are compared with the original cash flows, as depicted by the red indicator on Figure 7. The perpendiculars dropped on the horizontal axis represent the IRR for that particular scenario, for example, the original cash flow's IRR is a tad greater than 15%, while for Scenario 3, it is around 7%.

Critical Review

Clarence Infra Projects Ltd faces a crucial decision regarding green energy investment. While the company has identified three potential projects and analysed

them using payback period, NPV and IRR, some aspects require further scrutiny. The limited investment capital of $600 million restricts options, and the focus solely on revenue expansion might overlook other strategic objectives. Additionally, the chosen discount rate significantly impacts NPV and IRR calculations, highlighting the need for sensitivity analysis. The conflicting rankings between NPV and IRR for the projects further complicate the decision-making process. This gives rise to several key questions. First, how will the company handle the discrepancy between NPV and IRR rankings? Are there established tie-breaking factors or is a pre-defined decision rule needed? Second, exploring additional scenarios beyond cash flow reduction (e.g., energy price changes and regulations) would provide a more robust risk assessment. Finally, investigating the long-term confidence in cash flow projections and potential environmental concerns for each project is crucial. Furthermore, ensuring in-house expertise or strategic partnerships for project development and assessing government incentives and regulations are essential steps before moving forward.

Conclusion

Amid the intricacies of capital budgeting, the Clarence Infra Projects Ltd case serves as a compelling narrative, reminding us of the intricate dance between financial theory and pragmatic reality. While the North Star of shareholder value maximisation guided every decision, the case illuminated the necessity of balancing theory with practical considerations in the corporate landscape.

This tale underscores the importance of employing a multifaceted approach to project evaluation, one that harmonises traditional metrics like the payback period with sophisticated DCF methods, particularly NPV and IRR. The resonance of the time value of money in these methods provides a holistic perspective on project profitability.

NPV consistently spotlighted the hydroelectric power plant as the most lucrative choice, even when faced with non-conventional cash flow patterns. Sensitivity analysis underscored the resilience of projects under various reduction scenarios, accentuating the significance of accounting for risk and uncertainty in investment decisions.

This case is a symphony of financial theory and real-world pragmatism, resonating with the challenges companies face as they pursue the ideal of value maximisation. It shines a light on the limitations of capital budgeting tools, urging financial experts to consider both computational ease and practicality when evaluating investments. The case of Clarence Infra Projects Ltd is a reminder that value maximisation is an art that combines theory with the practicality of today's business world.

Questions for Discussion

1. The case study highlights the company's dilemma between choosing conventional and non-conventional investments, each with unique cash flow patterns. How can an organisation effectively incorporate both types

of investments into its capital budgeting strategy to optimise value creation while managing financial risk?

2. The case emphasises the significance of considering the time value of money through the NPV method. Discuss the advantages and limitations of NPV as a primary decision-making tool for evaluating capital projects. What challenges can arise when applying NPV in scenarios with unconventional cash flows?
3. Clarence Infra Projects Ltd conducts scenario analysis by reducing expected cash flows by 5%, 10% and 20% to assess project resilience. How can scenario analysis enhance decision-making in capital budgeting, and what are the implications for financial risk management? What other sensitivity analyses or scenarios might be relevant in this context?
4. The case underscores the importance of aligning capital budgeting decisions with an organisation's strategic objectives, including environmental and social sustainability. How can companies ensure that their investments not only maximise financial value but also contribute to broader societal and environmental goals? What role should sustainability criteria play in project evaluation and selection?

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ORCID iD

Robin Thomas https://orcid.org/0000-0002-4811-8097

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