

# Strategic Capital Budgeting Practices at AXA Parenterals Ltd: A Financial

# **Insight from Gujarat**

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## ABSTRACT

This study explores the capital budgeting practices of AXA Parenterals Ltd, a pharmaceutical company specializing in sterile liquid injections. It analyzes how the company evaluates long-term investment decisions such as plant expansion, technological upgrades, and infrastructure development. Capital budgeting tools like Net Present Value (NPV), Internal Rate of Return (IRR), Payback Period, and Profitability Index are used to assess the financial viability of proposed projects. Data was gathered through company financial reports and discussions with key finance personnel. The findings reveal a systematic and analytical approach to investment decisions, aimed at optimizing resources and maximizing long-term returns. The study concludes that effective capital budgeting contributes significantly to the company's strategic growth and recommends the adoption of advanced financial modeling and scenario analysis for improved decision-making.

**KEYWORDS:** Capital Budgeting, Investment Appraisal, Financial Decision-Making, Strategic Growth.

# **INTRODUCTION**

Axa Parenterals Ltd. is a pharmaceutical manufacturing company established on July 22, 2005, in Delhi, India. It specializes in sterile parenteral preparations, including life-saving medicines and hospital products. The company operates a state-of-the-art manufacturing facility in Roorkee, Uttarakhand, and has a subsidiary, Heilsa Life Sciences Pvt. Ltd. Axa Parenterals exports to over 61 countries and holds certifications such as WHO-GMP and PIC/S. As of March 2024, the company reported a revenue of ₹213 crore and is actively seeking CDMO and marketing alliances globally.

Axa Parenterals Ltd is a pharmaceutical company known for manufacturing and marketing sterile liquid formulations, especially IV fluids. It plays a crucial role in the healthcare sector by providing essential hospital care products. The company operates globally, exporting to numerous countries with WHO-GMP-certified facilities. It emphasizes high-quality standards and affordability in life-saving treatments. Axa also contributes to healthcare sustainability through innovation and strategic partnerships.

The pharmaceutical manufacturing industry plays a critical role in producing life-saving medicines and ensuring public health. It supports healthcare systems by supplying safe, effective, and affordable drugs. The industry drives innovation through research and development of new therapies. It contributes significantly to the global economy, generating employment and trade. Additionally, it ensures drug quality and safety through stringent regulatory compliance.



Capital budgeting plays a critical role in assessing and selecting long-term investment projects, directly influencing a company's strategic growth and financial sustainability. This abstract focuses on the capital budgeting practices of AXA Parenterals Ltd., a pharmaceutical firm engaged in the production and distribution of sterile healthcare products. The study evaluates key capital budgeting techniques such as Net Present Value (NPV), Internal Rate of Return (IRR), Payback Period, and Profitability Index to assess the viability of major investment decisions including plant expansion, equipment upgrades, and R&D infrastructure development.

# LITERATURE REVIEW

Brigham & Ehrhardt (2014) This study emphasizes the integration of real options analysis with NPV and IRR. Real options allow firms to account for flexibility in investment decisions. They help in managing uncertainty by considering future strategic choices. Traditional tools alone often ignore the value of managerial flexibility. Combining both approaches gives a deeper insight into investment outcomes. This leads to better-informed and adaptive capital budgeting decisions.

Brealey, Myers & Allen (2020) The authors advocate complementing NPV and IRR with sensitivity analysis. This technique evaluates how changes in key variables affect outcomes. It identifies risks and uncertainties in investment projections. Sensitivity analysis enhances the robustness of decision-making. It supports better planning by revealing potential vulnerabilities. This integrated approach results in more reliable investment choices.

Modigliani & Miller (1958) They recognize NPV and IRR as strong theoretical tools for evaluation. However, these tools rely on assumptions like market efficiency. In practice, capital costs and market conditions vary widely. This limits the direct application of traditional models. The study suggests adjustments for real-world relevance. Such adaptations increase the tools' practical decision-making value.

Van Horne & Wachowicz (2014) The discounted payback period refines the simple payback method by considering the time value of money. It calculates how long it takes to recover the investment in present value terms. This makes it more accurate than the traditional payback approach. However, it ignores cash flows beyond the recovery period. As a result, long-term project benefits may be undervalued. It's better than simple payback but still limited in scope.

Baker & Powell (2005) Profitability Index (PI) ranks projects based on value creation per investment unit. It is calculated as the ratio of the present value of future cash flows to initial cost. While useful, PI does not fully capture project risk or overall viability. The authors recommend using PI alongside NPV for better analysis. This combination offers a broader view of investment quality. Thus, PI serves best as a supporting tool in project evaluation.

Berk & DeMarzo (2019) The Accounting Rate of Return (ARR) uses accounting data to assess investment returns. It is easy to calculate and understand, making it widely used. However, it doesn't consider the time value of money. This makes it unreliable for long-term investment decisions. Discounted methods like NPV provide more accurate results. Hence, ARR is better suited for preliminary or short-term evaluations. Brealey & Myers (2003) Combining NPV with Monte Carlo simulations strengthens investment analysis. Simulations allow for multiple outcome



scenarios and risk modeling. This helps in understanding the full range of potential results. The approach adds depth to cash flow forecasting under uncertainty. It is especially useful for complex and volatile projects. Overall, this integration enhances strategic investment decision-making. Ehrhardt & Brigham (2011) The Modified Internal Rate of Return (MIRR) improves upon traditional IRR. It resolves issues like multiple IRRs and unrealistic reinvestment assumptions. MIRR assumes reinvestment at the project's cost of capital. This gives a more accurate reflection of investment profitability. It is especially useful for non-conventional cash flow patterns. MIRR thus enhances reliability in capital budgeting decisions.

Koller, Goedhart & Wessels (2010) Real-time analysis and scenario planning improve capital budgeting outcomes. These tools help firms adapt to shifting financial and market dynamics. Continuous monitoring allows for timely adjustments in investment strategies. Scenario planning considers multiple future paths and their impacts. This enhances decision-making under uncertainty and volatility. Overall, it increases accuracy and relevance in investment valuation.

Ross, Westerfield & Jaffe (2019) NPV and IRR remain essential tools in capital budgeting decisions. However, their effectiveness increases when paired with strategic analysis. Incorporating risk management and long-term vision is crucial. This integrated view aligns financial and strategic objectives. It ensures decisions are not only profitable but sustainable. Such a holistic approach leads to better investment outcomes.

Capital budgeting is crucial for mid-sized pharmaceutical companies like AXA Parenterals Ltd., but limited research exists on their specific practices, especially in the Indian context. Most studies focus on large multinationals, overlooking regional players' unique challenges. Mid-sized firms often face capital constraints and require precise financial forecasting. Techniques like NPV, IRR, and sensitivity analysis are essential to evaluate project feasibility and risks. More research is needed to understand how these companies navigate capital budgeting for sustainable growth.

# **RESEARCH METHODOLOGY**

The success and failure of business mainly depends on capital budgeting. Capital budgeting is necessary because large sums of money are involved for accruing fixed assets. capital budgeting is important because it creates accountability and measurability. Any business that seeks to invest it resources in a project without understanding the risks and return involved would be held as irresponsible by its owners or shareholders

This research analyzes AXA Parenterals Ltd.'s capital budgeting practices using ratio analysis, trend analysis, and common-size financial statements. The focus is on key financial indicators like liquidity, solvency, profitability, and operational efficiency. The study evaluates the effectiveness of investment decisions through tools such as NPV, IRR, and Payback Period. It aims to offer insights into the company's capital allocation and financial decision-making.

#### **OBJECTIVES**

- > To study the various capital budgeting methods are being implemented in the organization.
- > To evaluate the capital budgeting methods are being implemented in the organization.
- > To suggest the better financial performance in the organizations.



#### **RESEARCH DESIGN**

This study adopts a descriptive research design to analyze the capital budgeting practices of AXA Parenterals Ltd. from 2020 to 2024. The design focuses on examining and interpreting investment decisions using tools such as Net Present Value (NPV), Internal Rate of Return (IRR), Payback Period, and Profitability Index (PI). Secondary data has been collected from the company's annual reports, project evaluation documents, and other credible financial sources. The objective is to evaluate the firm's effectiveness in capital allocation, risk assessment, and long-term investment planning.

The study on capital budgeting at AXA Parenterals Ltd. follows a descriptive research design. It aims to analyze the company's approach to evaluating capital projects and long-term investments using financial tools and forecasting methods. The research identifies trends in capital investment decisions and their outcomes to provide insights into the firm's financial planning and growth strategy. This study relies on secondary data obtained from company annual reports, financial statements, audit reports, and relevant industry reports. Additional financial data may be collected from company websites, stock market reports, and government publications. The collected financial data will be analyzed using various financial tools and techniques

## DATA ANALYSIS AND INTERPRETATION

## **PAYBACK PERIOD**

The Payback Period is a capital budgeting tool used to determine the time required to recover the initial investment from a project's cash inflows. It helps assess the liquidity and risk of a project by showing how quickly the investment can be recouped. Shorter payback periods are generally preferred, especially in high-risk industries.

Cash outlay of the project

Annual cash inflows

5					
Years	Cost Of the Asset (Rs. In Crore)	Annual Cash Inflow (Rs. In Crore)	PayBack Period		
2020	3.347	.821	4.1		
2021	3.255	.889	3.7		
2022	2.962	.883	3.4		
2023	2.899	.753	3.9		
2024	2.91	.849	3.3		

Table	-1:	Pav	back	Period
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**Payback Period** = -

#### Source: Secondary Data

From the above table 1 past 5 years of the cost of the asset decreased from ₹3.347 crore in 2020 to ₹2.91 crore in 2024. Annual cash inflow ranged from ₹0.753 crore (2023) to ₹0.889 crore (2021). The payback period reduced from 4.1 years in 2020 to 3.3 years in 2024. This indicates that



investments are being recovered faster over the years due to improved cash inflows and reduced asset costs.

The line chart illustrates the trends in cost of assets, annual cash inflow, and payback period from 2020 to 2024. Over these five years, the cost of assets steadily declined from ₹3.347 crore in 2020 to ₹2.91 crore in 2024, indicating a reduction in capital investment. Annual cash inflows remained relatively stable, with minor fluctuations, peaking at ₹0.889 crore in 2021 and slightly dipping in 2023.



**Figure 1 Payback Period** 

Despite these fluctuations, the payback period showed a consistent downward trend from 4.1 years to 3.3 years, reflecting improved efficiency in recovering investments. This overall trend suggests enhanced financial performance, with optimized asset utilization and better return on investment over time.

#### **NET PRESENT VALUE (NPV)**

Net Present Value (NPV) is a key financial tool used to assess the profitability of an investment by considering the time value of money. It is calculated by taking the difference between the present value of expected cash inflows and the present value of cash outflows over the investment period.

Net present value = Present value of all cash inflows – present value of initial investment Present value = Cash flows \*Present value of Re. 1 @ 10% discount using present value table.

A positive NPV indicates that the investment is likely to generate profit and add value to the business, while a negative NPV suggests a potential loss. This makes NPV a reliable measure for decision-making, as it not only considers the number of returns but also when those returns are received. Therefore, NPV is widely used in capital budgeting to evaluate and compare different investment opportunities.



The Net Present Value (NPV) analysis shows that the total discounted cash inflows over five years amount to ₹15.373 crore, while the total discounted cash outflows are ₹11.743 crore. This results in a positive NPV of ₹3.63 crore (₹15.373 – ₹11.743).

Year	Cash outflows (Rs. In Crore)	Discounting presentvalue Table (Presentvalueof Re.1 @10 %)	Present Value of Net Cash Flows	Cash inflow
2020	3.347	0.909	3.042423	3.347
2021	3.255	0.826	2.68863	3.255
2022	2.962	0.751	2.224462	2.962
2023	2.899	0.683	1.980017	2.899
2024	2.91	2.91	1.80711	2.91
Total			11.742642	15.373
Present v	15, 37, 30,000			
Less: Pre	11, 74,26, 420			
Ne	3,63,03,580			

#### Source: Secondary Data

A positive NPV indicates that the project is expected to generate more value than its cost, making it a profitable investment. The use of a 10% discount rate reflects the time value of money, ensuring that future returns are accurately assessed in today's terms. Therefore, the investment is financially sound and should be considered favourable.



#### **Figure 2 Net Present Value**

The line chart shows a steady decline in cash outflows from ₹3.347 crore in 2020 to ₹2.91 crore in 2024. This downward trend indicates a reduction in investment costs over the years. The steepest drop is observed between 2021 and 2022, where the cost reduced from ₹3.255 crore to ₹2.962 crore. After 2023, the cash outflows slightly stabilize. This reduction in investment outlay,



combined with discounted inflows, contributes to a positive Net Present Value (NPV), supporting the financial viability of the project.

# AVERAGE RATE OF RETURN (ARR)

The Average Rate of Return (ARR) is a financial metric used to assess the profitability of an investment by comparing the average annual accounting profit to the average amount invested. It is expressed as a percentage and calculated using the formula:  $ARR = (Average Annual Profit / Average Investment) \times 100$ .

Formula

$$ARR = \frac{AVERAGE ANNUAL PROFIT}{AVERAGE INVESTMENT}$$

This method focuses on accounting profits rather than cash flows and does not consider the time value of money. Despite this limitation, ARR is widely used for its simplicity and ease of comparison between different investment options. A higher ARR signifies a more favourable and potentially more profitable investment.

#### Calculation

$$ARR = \frac{AVERAGE INCOME}{AVERAGE INVESTMENT}$$
$$= \frac{.844}{3.07} = 27.50\%$$

Table -3 Average Rate of Return

Year	Annual Profit	Investment	Rate of Return %
2020	0.821	3.347	24.52943
2021	0.889	3.255	27.31183
2022	0.883	2.962	29.81094
2023	0.735	2.899	25.35357
2024	0.894	2.91	30.72165

#### Source: Secondary Data

The table 3 shows the Annual Profit, Investment, and corresponding Rate of Return (%) from 2020 to 2024. Over this period, the ARR increased overall, starting at 24.53% in 2020 and reaching a peak of 30.72% in 2024, with some fluctuations.



The figure 3 shows a generally positive trend, with a noticeable fluctuation in 2023. Starting at 0.821 in 2020, the value increased significantly to 0.889 in 2021, indicating strong improvement. In 2022, there was a slight decrease to 0.883, suggesting a period of stability.



#### Figure 3 Average Rate of Return

However, 2023 saw a sharp decline to 0.735, which may point to an unexpected disruption or setback. Despite this drop, the value rebounded impressively in 2024, reaching a new high of 0.894. This recovery not only offsets the previous year's dip but also suggests resilience and continued progress overall.

## INTERNAL RATE OF RETURN (IRR)

The Internal Rate of Return (IRR) is the discount rate that makes the net present value (NPV) of a project's cash flows equal to zero. It is used to evaluate the profitability of an investment.

Formula:

$$IRR = LDF\% + DF \frac{PVLDF-COF}{PVLDF-PVHDF}$$

YEA R	CFAT	TVPS (Rs)	DF (10%)	DF (30%)	TVPS (Rs)
2020	.821	3.347	0.909	0.769	0.631
2021	.889	3.255	0.826	0.592	0.526
2022	.883	2.962	0.751	0.455	0.402
2023	.735	2.899	0.683	0.350	0.257
2024	.894	2.91	0.621	0.269	0.240
PV of CA		Cash Inflows	15.373	2.056	
Less: PV of		Cash Outflows	11.742	2.056	
Net Present V	alue		3.631	-1.575	

#### Table 4 Internal Rate of Return

#### Source: Secondary Data

A higher IRR indicates a more desirable investment. If the IRR exceeds the required rate of return, the project is considered acceptable. IRR is widely used in capital budgeting and financial decision-making.



Form the above table 4 explain the financial analysis evaluates the Net Present Value (NPV) of a project using two discount rates 10% and 30% to assess its viability. The cash flows after tax (CFAT) for the years 2020 to 2024, along with corresponding discount factors, are used to calculate the present value (PV) of cash inflows.

## Calculation

$$IRR = 10\% + (30 - 10)\frac{15.373 - 2.056}{15.373 - 2.056}$$
$$= 10\% + 73.35$$
$$IRR = 83.35\%$$

At a 10% discount rate, the total PV of cash inflows is  $\gtrless 15.373$  lakh, while the PV of cash outflows is  $\gtrless 11.742$  lakh, resulting in a positive NPV of  $\gtrless 3.631$  lakh, indicating the project is financially viable at this rate.

However, at a 30% discount rate, the PV of cash inflows equals the cash outflows at ₹2.056 lakh, leading to a negative NPV of ₹-1.575 lakh, implying the project is not viable at higher cost of capital. This analysis shows the project is more suitable when the required rate of return is low.



#### **Figure 4 Internal Rate of Return**

The figure 4 shows that, in the year 2020 and in the year 2024the company had lower expected internal rate of return than the minimum rate so the investment on the particular project can be reduced. In the year 2020, 2021, 2022, 2023 the project has a higher internal rate of return than the minimum rate. Higher rate of return indicates that investment made in the particular year has higher cash inflow in the future.

# **PROFITABILITY INDEX**

Profitability index (pi), also known as profit investment ratio (pir) and value investment ratio (Vir), is the ratio of payoff to investment of a proposed project. it is a useful tool for ranking projects



because it allows you to quantify the amount of value created per unit of investment.the ratio is calculated as follows:

formula

# Profitability index = $\frac{PV \text{ of future cash value}}{Initial Investment}$

The cash flow calculated does not include the investment made in the project, a profitability index of 1 indicates breakeven. any value lower than one would indicate that the project's pv is less than the initial investment. as the value of the profitability index increases, so does the financial attractiveness of the proposed project. rules for selection or rejection of a project:

if pi > 1 then accept the project

if pi < 1 then reject the project

The table 5 presents a discounted cash flow analysis of a project over the years 2019 to 2023 using a 10% discount rate. Each year's cash inflows and outflows are matched with the present value (PV) factors to compute the present value of net cash flows. The total present value of cash inflows over the period amounts to ₹15.373 crore, while the present value of cash outflows totals ₹11.743 crore.

Year	Cash outflows (Rs. In Crore)	Discounting Present Value Table (Present value of Rs.1 @10%)	Present Value of Net Cash Flows	Cash inflow
2019	3.347	0.909	3.042423	3.347
2020	3.255	0.826	2.68863	3.255
2021	2.962	0.751	2.224462	2.962
2022	2.899	0.683	1.980017	2.899
2023	2.91	0.621	1.80711	2.91
TOTAL			11.742642	15.373

**Table 5 Profitability index** 

**Source: Secondary Data** 

 $Profitability index = \frac{PV \text{ of future cash value}}{Initial Investment}$ 

$$PI = 11.74562 \div 15.373$$

PI = 0.764

This results in a Net Present Value (NPV) of ₹3.63 crore, indicating that the project is financially viable. Additionally, the Profitability Index (PI), calculated as the ratio of inflows to outflows  $(15.373/11.743) \approx 1.31(15.373/11.743) \approx 1.31(15.373/11)$ 



The figure 5 illustrates the present value of net cash flows from 2019 to 2023, discounted at a rate of 10%. Starting at ₹3.04 crore in 2019, the values gradually decline to ₹2.69 crore in 2020, ₹2.22 crore in 2021, ₹1.98 crore in 2022, and finally ₹1.81 crore in 2023. This steady downward trend reflects the impact of the time value of money, where future cash flows hold less value in present terms.



**Figure 5 Profitability Index** 

Despite the decline, the cumulative present value of net cash flows over the five years amounts to  $\gtrless11.74$  crore, compared to total cash inflows of  $\gtrless15.37$  crore. This results in a positive Net Present Value (NPV), indicating that the project remains financially feasible and profitable over the evaluated period.

# **ANALYSIS OF FINDINGS**

The research work provides the key findings according to the data analysis. The ACC blocks project has 3.19 of payback period and plastering mortar project has 4.91 of payback period. The project is accepted when pay back is less than 5 years which is Standard payback set by the management. So, less payback period is accepted. As per the management the minimum rate of return expected is 10%. The project ARR Greater than 40% then, ACC blocks project is accepted. The net income of the project is discounted at the minimum required rate return which is grater then-8% and NPV is positive so the project is accepted. The current year 2023 payback period is found to be in 1 year, this shows that the company recovers its investment in 2 years.

#### RECOMMENDATIONS

#### Managers

To enhance the capital budgeting process at companies like AXA Parenterals Ltd., managers should prioritize the use of advanced financial evaluation techniques such as Net Present Value (NPV), Internal Rate of Return (IRR), and Payback Period to assess the viability of potential projects. Additionally, it's essential to integrate scenario analysis and sensitivity testing to better understand the impact of market volatility or unexpected changes in operating conditions. Managers should also focus on the optimization of the capital allocation process by aligning



projects with the company's long-term strategic objectives. Establishing a comprehensive risk management framework for each capital project will be vital in mitigating potential challenges and ensuring successful execution. Finally, leveraging digital tools such as financial forecasting software, project management tools, and data analytics can help streamline the decision-making process and improve project outcomes.

## **Policy Makers**

Policymakers can play a crucial role in supporting effective capital budgeting in the pharmaceutical industry by simplifying the regulatory processes involved in obtaining approvals for new projects and expansions. Facilitating access to funding for mid-sized firms like AXA Parenterals Ltd. through easier credit access, lower interest rates, and favorable loan terms will encourage investment in capital projects. Introducing tax incentives for capital expenditure on innovation, machinery, or technology upgrades can help pharmaceutical companies remain competitive globally. Policymakers should also consider creating frameworks for clearer valuation standards and risk mitigation strategies for large-scale investments, particularly those involving research and development. Furthermore, promoting policies that encourage public-private partnerships could foster growth in innovation and provide additional funding avenues for capital projects.

#### **Industry Development**

To drive industry-wide improvements in capital budgeting practices, stakeholders should advocate for the adoption of standardized methods for evaluating and financing large-scale projects. Sharing best practices for project evaluation, such as utilizing NPV and IRR, can help smaller companies benchmark their capital budgeting processes. Industry bodies could also create a collective platform for exchanging knowledge on financial planning, risk management, and investment in new technologies. Additionally, the pharmaceutical sector should push for greater integration of digital tools and data analytics in capital budgeting, which would enable companies to make better-informed, data-driven decisions. Encouraging greater collaboration between manufacturers, investors, and regulatory bodies can streamline the approval process and lead to faster execution of capital projects, thus fostering a more competitive and resilient industry.

#### **Scholarly Contribution**

Research in the area of capital budgeting for mid-sized pharmaceutical companies like AXA Parenterals Ltd. could focus on developing tailored models that address the unique risks and opportunities within the sector. Scholars should examine the impact of long-term capital investment decisions on profitability and firm performance, particularly for companies navigating regulatory and technological changes. Further studies could also explore the optimal mix of internal and external funding for capital projects and its effect on the financial stability of pharmaceutical firms. Researchers should also look into the influence of digital tools and AI on capital budgeting processes and whether they lead to better forecasting and investment decision-making. Exploring these areas could provide valuable insights to both industry managers and policymakers and help refine capital budgeting practices in the pharmaceutical sector.



#### **Scope for Further Study**

Future research can explore how capital budgeting practices differ across pharmaceutical firms of varying sizes, particularly in terms of project evaluation techniques, risk management, and funding strategies. Comparative studies across regions or countries can help identify the best practices and challenges specific to the pharmaceutical sector. In addition, further research could examine how external factors such as market dynamics, regulatory changes, and technological advancements influence capital budgeting decisions. Studies could also focus on the integration of non-financial aspects, such as environmental impact and social considerations, into the capital budgeting process. Lastly, applying advanced analytics, such as machine learning and predictive modeling, could help create more accurate financial projections for large-scale capital projects in the pharmaceutical industry.

#### LIMITATIONS

Capital budgeting in pharmaceutical companies like AXA Parenterals Ltd. faces challenges due to uncertainties in market conditions, regulatory delays, and fluctuating raw material costs. The long R&D and product development cycles complicate investment assessments, as returns may take years to materialize. Risk assessment is often difficult, especially with external disruptions like health crises or regulatory changes. Limited access to capital for mid-sized firms also restricts financing options. Additionally, the need for technological innovation carries inherent risks, as not all investments lead to expected gains. Ethical and environmental factors can impact projects if they don't meet ESG standards. Finally, dependency on imports adds further uncertainty, particularly with changing trade policies.

#### CONCLUSION

Capital budgeting for pharmaceutical companies like AXA Parenterals Ltd. involves navigating a complex landscape of uncertainties, regulatory challenges, and long-term investment horizons. These factors make traditional budgeting methods less reliable and emphasize the need for a more dynamic, flexible approach to decision-making. Companies must account for market volatility, technological risks, and ethical considerations while also managing financial constraints. By integrating advanced risk management strategies, real-time data, and scenario analysis, pharmaceutical firms can better align their capital investments with long-term strategic goals and enhance their financial stability.

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