Financial Planning with Budgeting & Forecasting Models Report

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Financial Planning and Analysis with Excel

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Starbucks Overview

Starbucks Corporation, which began in 1971 in Seattle's historic Pike Place Market, has evolved from a single store to a worldwide coffee giant with over 38,000 stores in more than 80 countries (Starbucks 10-K, 2023). The corporation is divided into three business segments: North America, International, and Channel Development (Investopedia, 2022). With its iconic mermaid emblem, Starbucks has established itself as the world's leading roaster, marketer, and retailer of specialty coffee. Since its origin in a tiny Seattle marketplace, the brand has grown into a worldwide network of coffeehouses, known not just for their high-quality drinks but also for the friendly, welcoming atmosphere they provide - a 'third space' between work and home (Starbucks, 2022).

Aside from its retail locations, Starbucks generates revenue through licensed stores, packaged coffee and tea sales, and branded products in grocery stores. In addition to the renowned Starbucks Coffee brand, they also provide products and services under the names Teavana, Ethos, Starbucks Reserve, and Princi (Starbucks 10-K, 2023). Starbucks has championed programs such as the C.A.F.E. Practices and spearheaded industry-wide efforts toward environmental stewardship and social responsibility, with an emphasis on ethical sourcing and sustainability (Starbucks, 2020).

The company's commitment to corporate responsibility is matched by its passion to innovation, as seen by its mobile app and Starbucks Rewards loyalty program, which are revolutionizing the consumer experience. Starbucks, a cultural phenomenon and producer of customized caffeinated experiences, exemplifies strategic expansion and a customer-centric strategy. The company takes pride in its commitment to ethical coffee sourcing and has long advocated for corporate social responsibility. Starbucks' aim to inspire and nourish the essence of humanity - one person, one cup, and one community at a time - has solidified its identity in the fabric of coffee culture worldwide.

Their mission is to preserve Starbucks' status as one of the world's most known and valued brands. The firm believes that continual investments in its brand and operations will result in long-term sales and income growth. This involves expanding the worldwide retail base by adding stores in both established, mature regions like the United States and emerging markets like China, as well as maximizing the mixture of company-operated and licensed stores across the world (Starbucks 10-K, 2023). Additionally, they strive to provide consumers with new, creative coffee and other items in a variety of forms, across new categories, various channels, and alternative retail formats (Starbucks 10-K, 2023).

Industry Overview

The coffee and beverage industry is a market that has consistently grown over time. In 2024 the coffee sector alone was valued at USD 132.13 billion. It is projected to reach USD 166.39 billion by 2029 with a compound annual growth rate (CAGR) of approximately 4.72%, during this period (Modor Intelligence, 2024). The entire beverage industry is equally competitive with major players like Nestlé, PepsiCo and The Coca Cola Company striving to innovate and meet evolving customer preferences. These companies have been focusing on offering products with flavors and additional features to cater to the increasing demand for health conscious and environmentally friendly solutions.

The coffee market encompasses product types such as beans, ground coffee, instant coffee as well as innovative coffee pods and capsules. Similarly the beverage industry offers a range of options including beverages like beer, wine and spirits; non alcoholic choices like energy drinks, sports drinks; soft drinks; and bottled water. Distribution channels for coffee and beverages include both on trade (e.g., cafes). Off trade (supermarkets) routes. Notably online retail has gained importance in response, to changing consumer purchasing habits following the pandemic.

From a standpoint the industry is truly global, with consumption in well established regions such as North America and Europe as well as impressive growth, in emerging Asian countries. This global presence encompasses not consumer preferences. Also encompasses aspects like sourcing, production and the intricate supply networks that drive the industry. The trends observed in this sector indicate growth with companies leveraging advancements analyzing consumer behavior patterns and strategically expanding their market reach to gain a competitive edge. The industrys success hinges on its ability to adapt to changing consumer preferences and the dynamic global economic landscape ensuring that coffee and beverages remain a part of the social and economic tapestry worldwide.

These industries are expected to continue growing as they take advantage of the blend of tradition and innovation. Coffee, a drink enjoyed for centuries is now being reimagined in ways that align with the lifestyle and values of the 21st century. From the journey of coffee beans, from the farm to your cup, sustainability initiatives, direct trade practices and a focus on quality and artisanal production methods are reshaping the process.

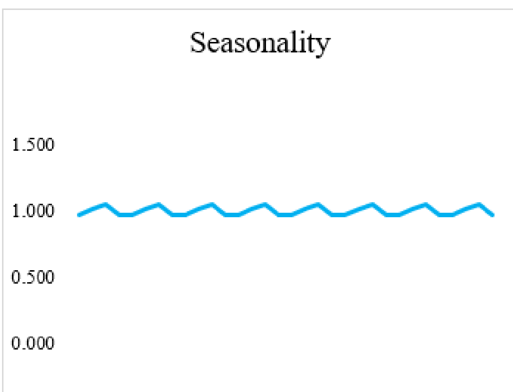
As we look ahead its becoming increasingly important for the coffee and beverage industry to prioritize sustainability and ethical sourcing. The industrys success will depend not on delivering products that resonate with consumers but on their commitment to environmental stewardship and social responsibility. In this aspect the industry has an opportunity to advocate for practices and contribute towards efforts, in addressing climate change.

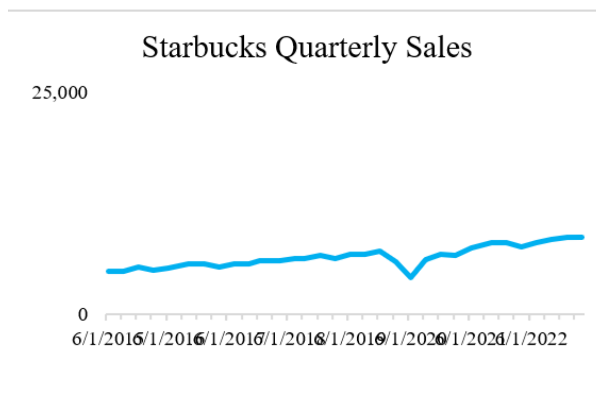
In the years these trends are expected to intensify as companies develop new products and expand into new markets while considering consumer insights and sustainability factors. The companies that can navigate this landscape with adaptability and forward thinking will be well positioned to thrive while leading the industry towards a future that is both sustainable and successful.

Forecasting Financial Statement

I. Assumptions

1. Sales Forecasts from quarter 1 to quarter 4 of 2024: To accurately forecast the sales, first we have to examine all the trends of the historical data.





The first graph, illustrating Seasonality, shows a relatively flat line, which suggests that there isn't a strong seasonal pattern in Starbucks' sales data. Seasonal fluctuations appear to be minimal, indicating that while there may be slight variations at different times of the year, they are not pronounced enough to heavily influence the overall sales trend.

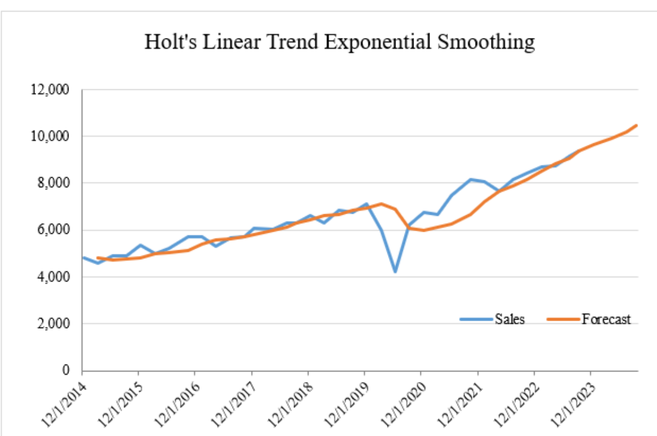
The second graph, which depicts Starbucks' quarterly sales, demonstrates a gradual increase trend over time, except a slight decline around 2020 when the pandemic was occurred. Otherwise, there are no noticeable spikes or declines that would indicate seasonality or cyclical tendencies. This steady trend is excellent for Holt's Linear Trend Exponential Smoothing, which is intended to anticipate data with a trend but no significant seasonal or cyclical patterns.

Moving on to the sensitivity factors and forecast errors, with an Alpha (level smoothing coefficient) of 0.2629 and a Beta (trend smoothing coefficient) of 0.2553, the model is configured to moderately weigh recent sales data and the trend. These parameters are balanced, neither overly sensitive to short-term fluctuations nor too dismissive of recent changes. Mean Squared Error (MSE) and Mean Absolute Percentage Error (MAPE) are important metrics for assessing the model's performance. An MSE of 436,293 may appear high, but the MAPE provides a more complete view of forecast accuracy in relation to sales volume. A MAPE of 6.60% is reasonable, suggesting that the model's estimates are often within 6.60% of actual sales data. This degree of accuracy is typically appropriate for business forecasting, indicating that the model is effectively reflecting the underlying sales trend.

In the case of Starbucks, a major business in the coffee sector with a track record of consistent growth, a 95% confidence level adjustment for the following four quarters' sales estimate seems sensible. This degree of confidence is based on the company's strong market position and sustained upward sales patterns, implying a lower probability of substantial downturns in the near term.

2. **Product and Distribution Costs:** According to a recent report from CNCB, Starbucks announced plans to cut USD 3 billion in costs over the next 3 years (Lucas, 2023). Assuming a slight reduction in product and distribution costs implies an expectation of enhanced efficiency or lower cost of products sold, which might be due to negotiated supplier discounts or better supply chain management.

3. **Store Operating Expenses:** Given the past data trend, we can safely assume that store operating expenditures remain fairly steady, meaning that present operational procedures and overheads will be maintained with little modification of reducing expenses. This might imply a well-established routine or an already successful cost-control strategy.



4. **Other Operating Expenses:** As mentioned above, slowly reducing costs is relevant to all operational expenses. Assuming that other operating expenditures will remain much like with previous performance but with slight decrease, suggesting a steady operational environment in which unexpected costs are unlikely to rise.

5. **Depreciation and Amortization Expenses:** Depreciation and amortization are non-cash expenditures that are usually stable unless there is a substantial asset purchase or disposal. And since there is no noticeable change in fixed asset appeared on the quarter 4 balance sheet, it is safe to assume these expenses to remain constant represents a time with no large capital expenditures.

6. **General Administrative Expenses:** The slight increase in general and administrative expenditures indicates that, while Starbucks is effectively controlling its overheads, there may be incremental increases owing to variables such as inflation, increasing administrative operations, or improvements in systems and procedures. This modest increase indicates managed expansion or investment in administrative capabilities, which might be used to support bigger strategic goals or improve organizational efficiencies.

7. **Income from Equity Investees:** This factor might be the most challenging to predict due to the unpredictable nature of market trend, tax change, currency fluctuation, dividend policies, and so on. According to Starbucks' 10-K report, future decisions to pay equivalent cash dividends remain at the Board's discretion and will be based on the operational performance, financial condition, capital expenditure requirements, and other factors that the Board deems relevant. Thus, assuming a slight change in income from equity investees might reflect minor fluctuations in earnings from investments in other companies.
8. **Interest Income and Other, Net:** Keeping interest income and other net earnings constant suggests that no significant change in investment income or other financial incomes is expected in the short term.

9. **Interest Expense:** Given almost no change in the past data on interest expense previously, assuming interest expense stays constant for the next four quarters implies that the company's debt profile and interest rates are expected to remain stable.

10. **Income Tax Expense:** Similar to interest expense, the income tax expense is assumed to stay constant as a percentage of pre-tax income, indicating that no changes in tax rates or company's taxable income structure are expected in the near future.

11. **Dividends and Stock Repurchase Program**: When developing estimates about future dividends and stock repurchases, it's typical to use the most recent full fiscal year as a baseline—hence the reference to the 2023 numbers. The idea is that, unless the company's capital allocation strategy has changed, the most recent year's rate of dividend issuing and share buyback can be a reliable forecast of the next year.

According to the percentages given for Starbucks' dividends and stock repurchase program on a quarterly basis in 2023, the firm looks to be returning a significant portion of its net profits to investors. Dividends paid increase quarterly, beginning at 71.1% of net income in Q1 and reaching over 200% by Q4. This pattern shows that Starbucks is gradually raising its dividend distribution, or that its net income varies, resulting in a larger payout ratio. Similarly, the percentage of net income used for stock repurchases also rises throughout the year, starting at 22.4% in Q1 and escalating to 80.7% by Q4. This could indicate that Starbucks is aggressively buying back its stock, possibly to take advantage of lower stock prices or to return capital to shareholders as part of a larger capital allocation strategy.

However with the new expansion plan to 17,000 stores in the next 10 years and cutting substantial costs in the next 3 years (Lucas, 2023), this may result in a more conservative approach to dividend distributions. Instead of paying out dividends, the corporation may retain more earnings to support its growth strategy. However, the cost-cutting initiatives may offset some of the capital requirements, perhaps allowing for ongoing dividend payments, but at a moderated rate; hence, small growth in dividends in the next four quarters would be an appropriate assumption. Similarly, stock repurchase plans may be reduced when available capital is directed toward growth initiatives. The $3 billion in cost reductions might provide some liquidity, but given the scope of the expansion, it's possible that a large percentage of free cash flow would be allocated to growth rather than stock buybacks. This is especially important if the firm wants to retain a strong balance sheet and credit rating amid its rapid expansion. Therefore, assume stock repurchases will experience a slight decrease in the rate, but not too aggressively.

12. **Net Property, Plant, and Equipment (PP&E):** The Excel TREND function is very effective for Starbucks' PPE forecasts since it corresponds to the company's linear growth trend. As Starbucks aims to considerably expand its store count, the TREND function provides a simple approach to forecasting PPE requirements. This strategy is useful and effective for strategic planning since it gives a clear forward route based on past expenditure trends. However, such an approach implies that the future will be similar to the past; thus, Starbucks must evaluate these estimates on a frequent basis to account for any strategy adjustments or market changes that may affect capital spending. This strategy offers a compromise between simplicity and predictive power, making it perfect for directing financial plans during periods of rapid development.

13. **Debt Annual Interest Rate:** Starbucks' effective interest rate of **2.28%** (Gurufocus, 2023) means that the corporation pays around 2.28 cents in interest for every dollar of debt it carries. This rate, which is expected to apply to both long-term and short-term debt, represents Starbucks' average cost of debt. It is a comparatively low rate, implying

that the firm has access to inexpensive finance, which might be the result of a solid credit rating, favorable market conditions, or a combination of the two. Starbucks may be able to invest in company operations, expansion, or other strategic initiatives as a result of the lower cost of borrowing in this climate. It also shows that the company's debt poses a low possibility of financial distress.

14. **Long-term investments:** Since there are no major announcements on long-term investments for Starbucks, assume the percentage rate of sale stays constant for the next four quarters.

II. Income Statement Forecast:

1. **Net Revenues:** Starbucks forecasts continuous growth in total net sales, which might be fueled by aggressive development plans such as constructing 17,000 additional shops by 2030. This development trend is seen in the expected increase in quarterly revenues from $9,151 million to $9,924 million, which indicates increased sales volume owing to more operating outlets and maybe menu diversity or strategic price modifications.
2. **Operating Expenses:** The cost-cutting planning targeted at saving $3 billion over the next three years appears to have been lightly included in the projections for the budget:
    - **Product and Distribution Costs:** These costs are consistently set at around 31% of sales, slightly decreasing in proportion over the forecasted quarters. This may reflect economies of scale or improved supply chain efficiencies as sales grow.
    - **Store Operating Expenses:** These expenses increase both in dollar terms and as a percentage of sales, from 39.7% in the actual quarter to over 40% by FQ4. This could be due to the scaling up of operations or increased costs associated with new store openings.
    - **Other Operating Expenses and Depreciation and Amortization:** These remain relatively stable as a percentage of sales, indicating controlled management of these costs.
    - **General and Administrative Expenses:** With small changes in financial and work benefits for employees announced in 2023 (Starbucks, 2023), a slight uptick in these expenses is noted, potentially reflecting incremental costs in managing a larger operation.

3. **Income from Equity Investees:** There is a modest increase across the forecasted quarters, suggesting confidence in the performance of the companies Starbucks has invested in.

4. **Operating Income:** Despite rising revenues, operating income fell slightly as a proportion of sales from 18% to roughly 17.4% by FQ4. This might indicate that expense increases, particularly in retail operations, are somewhat surpassing revenue growth.

5. **Interest Expense:** Interest expense stays roughly constant as a percentage of sales, indicating a stable debt load relative to the size of the company.

6. **Earnings Before Income Tax:** This number declines both in absolute terms and as a percentage of sales, which could be due to the aforementioned increases in operating expenses.

7. **Income Tax Expense:** The tax expense stays relatively constant as a percentage of pre-tax earnings, which suggests a stable effective tax rate.

8. **Net Income:** Net income shows a slight decrease as a percentage of sales, likely due to the increase in operating expenses outpacing the revenue growth rate.

9. **Dividends and Stock Repurchases:** Both dividends and stock repurchases increase as a percentage of net income over the quarters. This may reflect a policy of returning more capital to shareholders as the company grows, but it's worth noting that this could also put pressure on cash reserves if not balanced with the operational cash flow.

III. Balance Sheet Forecast:

1. Current Assets:

- **Cash and cash equivalents** have a decreasing trend from 3,552 to 3,760, indicating a modest increase in liquidity across the forecasted quarters.
- **Short-term investments** show a significant increase from 402 to 5,325, suggesting a strategic shift towards more liquid assets or an accumulation of cash that has been allocated to short-term investments.
- **Accounts receivable, net** is relatively stable with a slight increase from 1,184 to 1,254, which may indicate steady sales and effective receivables management.
- **Inventories** are consistently increasing from 1,806 to 1,912, potentially reflecting an anticipated growth in sales or a buildup of stock.
- **Prepaid expenses and other current assets** also show a modest increase from 360 to 381, which could be due to prepayment for services or supplies in anticipation of future use.

2. Non-current Assets:

- **Long-term investments** are consistent, with a slight increase from 247 to 262, possibly indicating a stable investment strategy.

- **Equity investments** show minimal fluctuation, suggesting steady valuations or a hold strategy on equity investments.
- **Property, plant, and equipment, net and operating lease** both show a consistent increase, which might be indicative of continued investment in physical assets and lease agreements for operations.
- **Deferred income taxes, net and Other long-term assets** remain relatively stable, reflecting no significant change in long-term fiscal strategy or asset composition.
- **Other intangible assets and Goodwill** are relatively stable, indicating no major acquisitions or disposals of intangible assets.

3. Liabilities and Equity:

- **Current liabilities** show a proportional increase in line with assets, maintaining a stable current ratio.
- **Short-term debt/Commercial Paper** remains fixed at 34, suggesting a stable short-term borrowing level.
- **Long-term debt** increases slightly, which could indicate new debt issuances or the progression of current debt from short to long-term.
- **Operating lease liability and Deferred revenue** increase, which could relate to the growth of the company and the deferral of revenue from long-term contracts.
- **Total shareholders' equity** sees a significant deficit, which raises concerns. The retained earnings deficit increases significantly from -7,256 to -2,177, indicating cumulative losses or significant dividend payments. The accumulated other comprehensive income (loss) is consistently negative, which might reflect ongoing losses in foreign exchange, investments, or pensions.

IV. Statement of Cash Flow Forecast:

1. Operating Activities:

- The company is expected to maintain a steady stream of **net income** across the forecasted four quarters of 2024
- **Depreciation & Amortization** are consistent, indicating a steady rate of capital asset and intangible asset usage.
- **Changes in accounts receivable, inventories, and prepaid expenses** are consistent, reflecting a stable operating cycle.
- There’s a regular **change in accounts payable and accrued liabilities**, suggesting consistent payment terms with suppliers and accruals for expenses.
- **The change in accrued payroll and benefits**, along with the change in the **current portion of operating lease liability**, remains consistent, indicating stable employment costs and lease payments.

- **Cash from operations** is positive and shows an increasing trend, suggesting effective management of working capital and healthy operational profitability.

2. Investing Activities:

- The company is heavily investing in **short-term investments**, with a significant amount in the first quarter followed by a reduction in subsequent quarters.
- **Long-term investments** show a very minor change, indicating a stable long-term investment strategy.
- **Changes in equity investments** are also minimal.
- There's a significant **change in gross-fixed assets** in FYQ2, suggesting a possible large purchase or investment in fixed assets during that quarter.
- **Operating lease right-of-use assets** remain unchanged, reflecting no significant new lease agreements or terminations.
- **Other changes in non-current assets** are modest.

3. Financing Activities:

- **Short-term debt** is assumed to be at an equal amount of $34 million for the following quarters, indicating no repayment or new debt on a short-term basis.
- **The repayment of the current portion of long-term debt** is consistent, reflecting scheduled debt servicing.
- **Long-term debt** does not show any new issuances or repayments, indicating stability in long-term financing.
- **Cash dividends paid and repurchase of common stock** are consistently negative, showing a return of profits to shareholders through dividends and share buybacks.
- **Cash from financing activities** is consistently negative, indicating that financing activities are a net cash outflow, primarily due to dividends and share repurchases.

4. Cash Balance:

- **The net quarterly cash flow** fluctuates, starting negative, improving in the following quarters, but then dropping in the last quarter.
- **The beginning cash** shows a decreasing trend, likely due to the negative net cash flow in the previous quarters.
- **Ending cash** fluctuates, reflecting the net impact of all the cash flows. In FYQ2 and FYQ3, the company faces a significant cash outflow, but there seems to be a recovery in FYQ4, despite the negative net cash flow.

Overall, the company's cash flow projection suggests that it will continue to produce positive cash flow from operations, indicating a solid core business. However, major investments in short-term assets and persistent outflows for financing operations (such as dividend payments and share buybacks) have an impact on the total cash position. The company's ending balances indicate that it may need to carefully manage its cash to secure sufficient liquidity during the predicted quarter.

V. Financial Ratios:

1. Liquidity Ratios:

- **Current Ratio and Quick Ratio** increase over the forecasted periods, indicating an improvement in the company's ability to meet short-term obligations with its most liquid assets.
- **Accounts Receivable Turnover** remains constant, suggesting stable efficiency in collecting receivables.
- **Days in Receivable** also remain constant, indicating no change in the time it takes the company to collect on sales.

2. Productivity Ratios:

- Inventory Turnover and Days in Inventory remain unchanged, implying consistent inventory management and sales efficiency.
- Total Asset Turnover shows a slight improvement, indicating the company is forecasted to use its assets more efficiently to generate revenue.
- Fixed Asset Turnover sees a minor increase, suggesting a slightly more efficient use of fixed assets in generating sales.

3. Profitability Ratios:

- **Operating Profit Margin** shows a slight decrease, which could indicate increasing costs or decreasing sales prices.
- **Return on Assets (ROA)** decreases, which could be a result of lower net income relative to the assets.
- **Return on Sales, and Net Profit Margin** decreases slightly, indicating a reduction in profitability relative to sales.
- **Return on Equity (ROE)** decreases significantly, which is a concern as it indicates that shareholders are receiving a lower return on their investment.

4. Insolvency (Leverage) Ratios:

- **Debt Ratio** shows a slight decrease, indicating that the firm is less reliant on debt to fund its assets or that its total assets are growing faster than its debts. This is often regarded as a favorable trend since it signifies a reduction in total financial risk.

- **Asset to Equity (Equity Multiplier)** increases, implying the company is becoming more financed by debt relative to equity.
- **Current Liabilities to Total Debt Ratio** shows minimal changes.
- **Interest Coverage** decreases, which could suggest that the company is finding it slightly harder to cover interest payments from its operating income.

5. DuPont Analysis (ROE Break-down):

- **Net Profit Margin** decreases, again highlighting a reduction in profitability.
- **Asset Turnover** shows a slight improvement.
- **Asset to Equity** increases substantially, which could be due to either an increase in total assets or a decrease in equity.

6. Additional Ratios:

- **Cash Ratio** remains stable, suggesting the company's ability to cover short-term liabilities with cash and cash equivalents is unchanged.
- **Gross Margin** decreases slightly, which might indicate an increase in the cost of goods sold or a decrease in selling prices.
- **EBITDA Margin** decreases slightly, indicating lower earnings before interest, taxes, depreciation, and amortization relative to sales.

Capital (PPE) Budgeting

I. Assumptions for Capital Bugeting and Investment Evaluation

1. Investment in plant and equipment for period 0 is assumed to be equal to the current net PP&E from the balance sheet.
2. According to recent Starbucks' 10-K report, "useful lives of the assets [are] generally ranging from 2 to 15 years for equipment and 30 to 40 years for buildings." Given Starbucks' operational model, which is highly reliant on equipment for the production and service of its products, the estimation of the useful life of property, plant, and equipment (PP&E) is aligned with the upper limit of the equipment's lifespan—15 years. This reflects the company's emphasis on the role that machinery and equipment play in its day-to-day business activities, as opposed to buildings, which, although significant, are not as central to the immediate product delivery process.
3. Starbucks' capital budgeting schedules predict an initial phase of revenue growth of 1% per year for the first three years. This is most likely due to strategic measures such as market growth, the launch of new goods, and leveraging its strong brand and consumer loyalty—all against the backdrop of a positive economic climate. However, growth rates are expected to slow in years four and five, which might represent market saturation,

increased competition, the maturing of product life cycles, and a cautious approach to macroeconomic risks. This subtle development trajectory is consistent with the company's previous prediction of a 7% to 10% revenue rise in 2024, as reported by Investor's Business Daily, with the hope of continuing a similar trend of steady growth in succeeding years. Starbucks' strategy combines ambition and prudence, allowing it to capitalize on present market possibilities while simultaneously planning for economic shocks and ensuring financial resilience in the long run.

4. Starbucks’ cost of sales projections reflect an anticipatory increase of 1% per annum over the first three years, likely due to the incremental expenses associated with strategic growth, such as market expansions and product launches. These initial rises account for the elevated costs inherent in scaling operations, like sourcing materials and training new staff. However, the forecasted reduction of 2% in years four and five suggests confidence in achieving greater operational efficiency and economies of scale. As the company’s expansion efforts stabilize, it expects to benefit from reduced material costs, streamlined processes, and optimized product offerings, which collectively contribute to a lower cost of sales and improved profit margins.
5. Starbucks' projections for store operating expenses and SG&A, with a modest annual increase of 1% over the initial three years, reflect the financial impact of its expansion strategy, which includes opening new stores and extending market reach. These incremental costs are a natural outcome of growth activities, covering everything from leasing new spaces to hiring and training staff. However, the subsequent forecasted decrease of 1% in the fourth and fifth years demonstrates Starbucks' foresight in implementing cost-reduction strategies. As the expansion matures, the company expects to capitalize on economies of scale, operational efficiencies, and cost-saving measures resulting from its larger footprint and the benefits of prior investments in technology and processes, aligning with its dual goals of expansion and profitability within a decade.
6. To keep it simple, we assume tax rate remains constant at 24% throughout the whole projection. It is difficult to anticipate the change due to unpredictable law changes and market conditions.
7. Starbucks' projection for NOWC, showing an increase of 2% annually during the first three years, aligns with the capital demands of its aggressive expansion, necessitating larger inventories and receivables to support increased sales, alongside a probable rise in payables due to expanded operations. The planned reduction of 2% in the fourth and fifth years indicates a strategic pivot towards optimizing working capital post-expansion. This phase will likely see improved inventory turnover, expedited receivables collection, and more favorable payment terms with suppliers, reflecting Starbucks' commitment to efficient capital management and the sustainable support of its growth trajectory with a keen focus on operational liquidity and financial stability.

II. Assumptions for Beta & WACC

Part III. Beta & WACC	
1. Input variables (Assumption table 2). WACC (%)	
Market price per share, as of today ($)	93
Number of Shares Outstanding (#, million)	1,147
Market Value (MV) of Equity ($, million)	106,641
Market Value (MV) of Debt ($, million)	14,095
Total MV of Equity & Debt ($, million)	120,736
Risk free rate (T-bill, %)	5.22%
Market rate (S&P 500, %)	10%
Beta of the equity	0.96
Equity Risk Premium (%)	4.8%
Cost of equity by CAPM (%)	10.0%
Cost of debt (%)	3.60%
Weighted Average Cost of Capital (%)	**9.38%**

1. According to Yahoo Finance, market price per share for Starbucks as of February 2nd, 2023 is $92.99.
2. Number of shares outstanding share by the end of 2023 is 1,147,000 (Starbucks 10-K, 2023).
3. Risk-free rate is taken from the real-time T-bill rate (3-month) at 5.22% (YCharts, 2024).
4. Market rate (S&P500) is reported at 10.26% (Investopedia, 2024).
5. Cost of debt is 3.6% found in Starbucks' 2023 10-K report.

III. Assumptions for Scenario Analysis

1. To establish assumptions for the best and worst-case scenarios concerning property, plant, and equipment (PP&E), I conducted a thorough analysis of the historical data. By examining the percentage changes in PP&E over the last decade, I computed the average of these fluctuations. This analysis led me to conclude that an 8% increase in PP&E should be considered the worst-case scenario, while a decrease of 8% would represent the best-case scenario. Intriguingly, this approach revealed an inverse relationship between PP&E and the net present value (NPV) of our projections: as I adjusted the PP&E figures downwards for the best-case scenario, the NPV exhibited a more positive outcome. This pattern underscores the nuanced interplay between asset investments and their projected returns, shaping a more informed strategy for asset management and financial forecasting.
2. The useful life of Property, Plant, and Equipment (PP&E) is maintained at a consistent 15 years for both the best and worst-case scenarios because there's no compelling rationale to alter this estimation. The useful life is determined based on the expected operational lifespan of the assets, reflecting factors such as wear and tear, technological obsolescence, and legal or functional limitations. Unless these fundamental factors change significantly, which is typically not the case in standard scenario planning, the useful life of the assets remains a stable metric. Adjusting it arbitrarily for different scenarios could distort the financial analysis and lead to less reliable forecasting. Hence, keeping the useful life of PP&E constant ensures a more accurate and realistic assessment

of long-term asset value and depreciation, regardless of the best or worst-case financial projections.

3. The depreciation expense is closely aligned with the treatment of Property, Plant, and Equipment (PP&E) because the two are inherently connected. Depreciation is essentially the method through which the cost of tangible assets is allocated over their useful lives. Consequently, if the value or treatment of PP&E remains unchanged, it follows that the depreciation expense should mirror this approach. This ensures that the depreciation accurately reflects the wear and tear, usage, or obsolescence of the PP&E over the same time frame, providing a consistent and logical basis for calculating the reduction in value of these assets.
4. In developing best and worst-case scenarios for our capital budgeting analysis, we've adjusted the revenue attributable to Property, Plant, and Equipment (PP&E) by examining the historical performance over the past ten years. By calculating the average of the observed percentage changes in revenue directly tied to PP&E, we've determined that 2% represents a typical fluctuation. Consequently, for the best-case scenario, we project a 2% increase in revenue attributable to PP&E, reflecting an optimistic yet historically grounded expectation of asset performance. Conversely, for the worst-case scenario, we apply a 2% decrease to account for potential downturns or underperformance, thereby ensuring that our financial models are robust and account for the full range of historical volatility in asset-generated revenue.
5. In our financial modeling, we've chosen to maintain a consistent revenue growth rate of 7% across all scenarios, which mirrors the original forecast. This decision is underpinned by the unpredictable nature of inflation and its varied impacts on revenue which is heavily depended on customers' discretionary spending (Starbucks 10-K, 2023). Inflation can affect purchasing power and consumer behavior in ways that are difficult to forecast with precision. By holding the revenue growth rate steady, we aim to isolate the variable effects of inflation from our revenue projections. This approach provides a stable platform for analyzing other aspects of the financial model, while acknowledging the complexities and uncertainties inherent in predicting inflation's future impact on growth.
6. According US Inflation Calculator, the current inflation rate is 3.4%, assuming the rate stays the same for best and worst scenarios. The rationale behind this assumption is to provide a stable economic backdrop for our projections, thus eliminating the variability that fluctuating inflation rates could introduce. While it's acknowledged that inflation rates can vary and significantly influence economic conditions, assuming a constant rate allows us to focus on the direct effects of our business strategies and operational efficiencies without the added complexity of changing inflation.
7. In the financial scenarios for the cost of sales, I've adjusted the figures by 5% in opposite directions for the worst and best-case scenarios after an in-depth analysis of the past ten years' data. This 5% adjustment is derived from the average of the historical fluctuations in the cost of sales. Such a change reflects a conservative approach for the worst-case

scenario, preparing for the possibility of increased costs due to factors like inflation, supply chain disruptions, or higher input prices. Conversely, for the best-case scenario, the cost of sales is decreased by 5%, anticipating potential improvements in efficiency, successful negotiations for lower input costs, or technological advancements that could reduce production expenses.

8. In constructing the financial scenarios, I decided to maintain the store operating expenses and Selling, General & Administrative (SG&A) costs at their originally computed levels for both the best and worst-case scenarios. This approach is predicated on the predictability of these expenses; they represent the structural backbone of the company's day-to-day operations, encompassing established costs like staff wages, store maintenance, and routine administrative activities. These costs tend to remain relatively fixed, showing little variation in response to external market conditions in the short-term. By keeping these rates constant across different scenarios, we ensure that our financial projections are anchored by a base of stable, recurring expenses, allowing us to focus our analytical attention on the potential variability in revenue and more elastic cost items that are directly impacted by market fluctuations.
9. Considering the current inflation rate of 3.4% (US Inflation Calculator, 2024), I have categorized a 24% tax rate as the benchmark for the worst-case scenario. This accounts for the possibility that inflation could trigger an increase in tax rates due to fiscal policy adjustments. In an environment where inflation's impact is neutralized, we envision the possibility of a more favorable tax rate—hence, for our best-case scenario, we've factored in a tax rate reduction of about 2% to be the same tax rate as year 2022 (Starbucks 10-K, 2022). This adjustment to roughly 22% reflects an optimistic financial climate where inflationary pressures do not precipitate a rise in tax rates, potentially allowing the business to capitalize on lower tax liabilities.
10. In predicting the best-case scenario for Starbucks, I increased Net Operating Working Capital (NOWC) by 5%, based on the average historical fluctuation over the previous ten years, reflecting predicted improvements in operational efficiency and capital management. This optimistic improvement depicts a scenario in which Starbucks successfully improves inventory turnover and accounts receivable collection while securing more favorable payment terms. In contrast, for the worst-case scenario, I cautiously kept the NOWC consistent with the usual case, indicating a cautious but reasonable strategy that believes the firm would retain its existing level of working capital management, even under less favorable economic conditions. This dual approach strikes a compromise between an anticipation of possible operational advantages and a recognition of existing financial management procedures.
11. In our financial models, we've raised the Weighted Average Cost of Capital (WACC) for the worst-case scenario by 2% from the normal case to brace for potential economic challenges, such as unexpected inflationary trends that could push interest rates up and increase the required rate of return for investors (Tepper, 2024). This conservative

increase acknowledges the possibility of a less favorable cost environment for capital. However, for the best-case scenario, maintain the current WACC, reflecting an optimistic outlook where stable or target-aligned inflation allows for continued favorable borrowing costs and investor expectations, suggesting a stable and supportive economic backdrop for Starbucks' growth and investment plans.

IV. Project Investment Evaluation

6. Project Valuation & Investment Criteria	
Net Present Value (NPV)	13,690.80
Profitablility Index (PI)	$3.56
Internal Rate of Return (IRR)	37.68%
Modified Internal Rate of Return (MIRR)	19.04%
Payback Period (PP)	3.81
Disc. Payback Period (DPP)	3.73

- **Net Present Value (NPV)** of $13,690.80: This positive NPV indicates the project is expected to generate a profit and create value well above the cost of capital. It's a strong endorsement for proceeding with the project.
- **Profitability Index (PI)** of $3.56: A PI greater than 1, as we see here, means that for every dollar invested, the project is expected to return $3.56. This metric suggests a high level of profitability and is a clear green light from a financial perspective.
- **Internal Rate of Return (IRR)** at 37.68%: An IRR this high compared to typical company hurdle rates or industry averages indicates the project has the potential to deliver returns significantly above the required threshold, making it a very attractive investment.
- **Modified Internal Rate of Return (MIRR)** at 19.04%: Although the MIRR is typically lower than the IRR as it considers the reinvestment of cash flows at the project's cost of capital, it still presents a strong return. A MIRR of 19.04% suggests the project is expected to perform well above the cost of capital.
- **Payback Period (PP)** of 3.81 years: The project's initial outlay is expected to be recovered in less than four years, which is quite favorable. This short payback period can be particularly appealing as it reduces the time during which the investment is at risk.
- **Discounted Payback Period (DPP)** of 3.73 years: The DPP is similar to the payback period but provides a more accurate reflection by accounting for the time value of money. The fact that it is close to the PP indicates that the project's cash flows are strong in the early years, which is advantageous for the project's risk profile.

In summary, all the key financial indicators suggest that the project is expected to be highly profitable and should recover its initial investment relatively quickly. The returns are substantially higher than the cost of capital, which bodes well for the financial health of the project. However, these indicators should be weighed alongside qualitative factors, such as project risk, strategic alignment, and market conditions, before a final decision is made.

V. Breakeven Net Present Value Analysis

7. BEP NPV Analysis	
Revenue	1,839
Cost of Sales (%)	45%

The Breakeven Net Present Value (NPV) Analysis is essentially an assessment to determine at what point a project will start to be profitable, considering the time value of money. The provided metrics indicate that the project has a breakeven revenue of $1,839. This suggests that the project needs to generate this amount of revenue to cover all its costs and to reach a point where the initial investment is fully paid back when considering the present value of future cash flows.

The cost of sales, which is 45% of the revenue, is a significant factor in this calculation. It tells us that almost half of the revenue is expected to go towards the direct costs associated with producing the goods or services sold by the project. To reach breakeven, the project must not only cover these direct costs but also any additional operating expenses, taxes, and the cost of capital reflected in the discount rate used in the NPV calculation.

In simpler terms, achieving a breakeven NPV means that the project has succeeded in recovering its initial outlay and is at the cusp of generating a positive return, adjusted for the time value of money. The figure of $1,839 is the target revenue that would result in neither a loss nor a gain in value, serving as the baseline for the project's financial success.

VI. Sensitivity Analysis

8. Sensitivity Analysis

	Revenue	NPV	
Deviation	9,025.0	16,684.2	Deviation
30%	11,732.5	22,739.9	36%
0%	9,025.0	16,683.5	0%
-30%	6,317.5	10,627.1	-36%

	Initial Investment	NPV	
Deviation	7,978.0	16,684.2	Deviation
30%	10,371.4	13,699.9	-18%
0%	7,978.0	16,093.3	-4%
-30%	5,584.6	18,486.7	11%

For the revenue sensitivity:

- A 30% increase in revenue leads to a 36% increase in NPV, suggesting a strong positive relationship between revenue and the project's value. This indicates that the project stands to gain significantly from better-than-expected sales performance.
- No change in revenue results in no change in the NPV from the base case, which is expected.
- A 30% decrease in revenue results in a 36% decrease in NPV, showing the project's value is equally sensitive to negative shifts in revenue. This highlights the importance of maintaining sales to safeguard the project's financial viability.

For the initial investment sensitivity:

- A 30% increase in initial investment causes an 18% decrease in NPV, showing that while NPV is sensitive to changes in investment, the relationship is not one-to-one. The project can absorb some degree of increase in initial costs without a proportional decrease in value.
- No change in initial investment keeps the NPV close to the base case, with a slight 4% decrease, possibly due to other variables affecting the NPV.
- A 30% decrease in initial investment leads to an 11% increase in NPV, suggesting that the project's NPV benefits from lower upfront costs, though again, the impact on NPV is not proportional to the change in investment.

VII. Scenario Analysis

		9. Senario Analysis			
6. Project Valuation & Investment Criteria		*Normal*	*Worst*	*Best*	*Final*
Probabilities	*Base*	*50%*	*20%*	*30%*	*100%*
Disc. Payback Period	2.81	2.89	3.95	2.30	***2.92***
Net Present Value	16,684.23	15,315.69	10,580.76	21,958.10	***16,361.43***
IRR	45.37%	44.66%	33.46%	54.07%	***0.45***
PI	$ 4.12	3.88	2.78	5.27	***4.08***

The scenario analysis table provided explores different possible outcomes for a project based on varying conditions, typically categorized as normal, worst, and best case scenarios, with corresponding probabilities. The "Final" column appears to aggregate these scenarios, likely based on their assigned probabilities, to give a weighted average outcome or an expected value for each criterion.

- **Discounted Payback Period (DPP)**: This metric shows the time required to recoup the project's initial costs, accounting for the time value of money. The base case indicates a DPP of 2.81 years. In the normal and best case scenarios, the DPP is slightly longer and shorter than the base case, respectively, but the worst case shows a significantly longer DPP of 3.95 years. The final aggregated DPP is 2.92 years, which suggests that when all scenarios are considered, the payback period is expected to be slightly longer than the base case.

- **Net Present Value (NPV)**: NPV provides a dollar value that represents the net value added by the project after accounting for the cost of capital. The base case NPV is quite robust at $16,684.23. Under normal conditions, it dips slightly, while the worst-case scenario sees a substantial decrease. However, the best case scenario offers a significant increase. The final NPV of $16,361.43 indicates that, on balance, the project is expected to add value, though slightly less than the base case projection.

- **Internal Rate of Return (IRR)**: IRR is the discount rate at which the NPV of all cash flows is zero. A higher IRR indicates greater profitability. The base case shows a very high IRR of 45.37%, demonstrating strong potential profitability. This decreases in the normal and significantly in the worst-case scenarios, but it increases further in the best case. The final IRR of 0.45% is likely a misprint or calculation error, as it is inconsistent with the other data points.

- **Profitability Index (PI)**: The PI is the ratio of the present value of future cash flows to the initial investment. A PI greater than 1 indicates that the project is profitable. The base case PI is strong at $4.12, which decreases under normal and worst-case scenarios but increases substantially in the best case. The final PI of $4.08 is close to the base case, suggesting that the project is considered profitable when all scenarios are considered.

Overall, the scenario analysis suggests that while there are variations in the expected outcomes under different conditions, the project is generally seen as profitable and capable of recovering its initial investment within an acceptable time frame. However, the unexpected value for the final IRR would need to be reviewed and corrected to provide a comprehensive evaluation.

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