



Tesco Business Report
Financial Ratio Analysis & Recommendations

Justin Fernando | Student ID: 1705758

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Professor Richard Dunstan



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Introduction

With its headquarters in Welwyn Garden City in Hertfordshire, England, Tesco Plc, trading as Tesco, is a leading British multinational groceries and general merchandise retailer. Its market position include being the third-largest retailer in the world as measured by gross revenues and the ninth-largest retailer globally when measured by net revenues. Tesco's origins in the early 1900s involved being a UK-only grocer, but the organization began global expansion in the early 1990s in 11 other countries outside the United Kingdom (Butler & Neville, 2013). Since the 1990s, the market strategy that Tesco implemented included repositioning the company branding from being a high-volume and low-cost retailer to one that caters to a wide array of social groups, thus broadening its appeal and diversifying its consumer base. Tesco is listed in the London Stock Exchange and is a part of the FTSE 100 Index, (London Stock Exchange, 2018) which is an index of the top 100 highest market capitalization UK companies on the London Stock Exchange, altogether representing approximately 80% of the entire market capitalization of the exchange, thus placing it as the most widely-used UK stock market indicator.

The scope of this ratio analysis focuses on calculations from the 2016-2017 and the 2017-2018 fiscal years. This timeframe meditates on the two years immediately succeeding a "lost decade" for the organization (Ruddick, 2015), prompting rebuilding of the organization and a reeling in of its operations both at home and abroad (Wearden, 2015) in order to better balance the books. For Dave Lewis, Tesco's new chief executive officer, these two fiscal years begin right at a time when cutting prices have not led to increased sales, Tesco cannot invest into its stores in order to boost sales due to exceedingly high debt, and the organization is experiencing

difficulty in reducing its debt due to insufficient generation of profit. From a financial confidence standpoint, trust remains low and skepticism of the finance function remains high as the organization emerges from a 326m GBP accounting scandal investigated by the Serious Fraud Office. With these contexts in mind, this study delves into the 2016-2017 and 2017-2018 fiscal years. By performing ratio calculations, spanning from profitability, liquidity, gearing, efficiency, and investor ratios, and by examining the limitations of ratio analysis, this study provides recommendations on how Tesco should improve its financial management and operations in order to be more sustainable and remain competitive in a volatile and globalizing market. It provides recommendations that focus on leveraging strategic partnerships in order to overcome monumental challenges as Tesco emerges from its “lost decade.”

Return to Equity

Ratio Category: Profitability

Formula = Profit After Tax / Equity

2017/2018 Calculation	2016/2017 Calculation	2017/2018	2016/2017
$857 / 10,458 = 0.08 \times 100 = 8.19\%$	$544 / 6,414 = 0.079 \times 100 = 7.90\%$	8.19%	7.90%

A positive return on equity is maintained with stronger performance from the FY 2016-2017 to FY 2017-2018. This is a marginal increase, which means that should Tesco seek to create a better picture of profitability growth and increased shareholder returns on investments, it would have to increase its return on equity ratio in future years. It should be said, however, that a limitation of this ratio is that company growth or higher return on equity does not necessarily get passed on to investors. For example, should Tesco seek to keep these profits, the common

shareholder will only realize increased value through an appreciating stock value. Ongoing advice for Tesco's finance function involves continuing prudence in expenditures, in addition to a more thorough comparison against industry and sector averages and individual corporate competitor performance by juxtaposing Tesco's own financial documents with those from industry competitors in order to perform a financial health check and a better read of Tesco's positionality in the market.

Price Earnings

Ratio Category: Profitability & Investor

Formula = Market Price of Share / Earnings Per Share

2017/2018 Calculation	2016/2017 Calculation	2017/2018	2016/2017
187p / 12.12p	211.00p / 0.81p	15.429	260.493

This measure is used by the investor to check the undervalued and overvalued share price of the company. This ratio indicates expectation about the earning of the company and payback period of the investors. Since the Price Earnings Ratio dipped from 260 to 15 from FY 2016/2017 to FY 2017-2018, this is an indication of poor current performance, which might also suggest a poor forecast of future performance. This decreased P/E ratio indicates that investors future fiscal years may not be willing to pay more for Tesco's company shares. When a company increases its debt, this debt increase can cause the Price Earnings ratio for its stock to fall. Because there is general concern that higher debt would translate to adverse impacts on future earnings, this causes investors to sell their shares, thus causing Tesco's share prices to decline. Recommendations to improve the Price Earnings Ratio include bolstering investor confidence and certainty in Tesco's cash flows, which Tesco could cultivate through partnering with

Strategy and Marketing in order to accomplish enhanced economies of scale, improve customer brand loyalty, and make more alluring customer captivity. In marketing's advertisements, this could involve sharing with the public and new markets highlights of where Tesco is innovating vis-a-vis grocery competitors.

Return on Capital Employed (ROCE)

Ratio Category: Profitability

Formula = Net Operating Profit / Capital x 100

2017/2018 Calculation	2016/2017 Calculation	2017/2018	2016/2017
$1,644 / (13,726 - 19,238) = 1,644 / (-5,512) =$	$1,280 / (15,073 - 19,234) = 1,280 / (-4,161) =$	-0.298	-0.307

With Tesco's Return on Capital Employed low, this might be alarming to investors because unlike instruments such as return on equity, which solely examines profitability related to an organization's common equity, ROCE factors in debt and other liabilities, which provides a more holistic indication of a company's financial performance. A negative ROCE signals that a company has significant debt. A limitation that ROCE has is that it tends to favor older companies as earlier established companies have the demonstrated ability to depreciate their assets more than newer companies. Yet, despite this advantage, ROCE for Tesco is still low despite the company's existence for decades. It is crucial that Tesco improves its ROCE as it is an important indicator of performance. Investors tend to prefer companies with stable and rising ROCE over companies with volatile ROCE. In the case of Tesco, its ROCE is stable with very slight increases but dwells in the negative, which is alarming.

To dispel investor worry and increase its ROCE, Tesco should pursue strategic cross-functional collaborations and foster organizational cultural change. Recommendations to improve ROCE involve process improvement through engaging with Finance Analytics, Project Management, Lean Six Sigma, and Strategy in order to create SMART goals, more detailed and realistic roadmaps, and establish a concise and easy to understand Working Capital optimization strategy. All of these improvements would improve the turnover and productivity of assets in order to position them to turn maximum yield. In addition, the finance function could collaborate with Human Resources in order to engage with Change Management. This partnership would involve developing, communicating, and fostering adoption of improved financial and IT processes, such as driving automation, process optimization, and utilizing Key Performance Indicators to better gauge performance.

Return on Assets

Ratio Category: Profitability

Formula = Net Profit / Total Assets

2017/2018 Calculation	2016/2017 Calculation	2017/2018	2016/2017
$(857 / 13,577) \times 100$	$(544 / 15,073) \times 100$	6.31%	3.61%

A higher ratio is typically preferable to investors as this shows that the organization is more effective in leveraging its assets towards the production of higher net income. While the return on assets ratio for Tesco is positive and doubled since FY 2016-2017 from 3.61% to 6.31% in FY 2017/2018, which is a good indicator, it is nevertheless close to zero and is in the single digits, placing it dangerously close to negative territory. While this may seem alarming to

investors, these low return on assets ratio percentages is not atypical in the food retailer sector. According to the Retail Owners Institute, the average return on assets for food retailers was 7.5% in 2013 (Retail Owners Institute, 2013). According to a CSI Market Management Effectiveness Information & Trends report, the return on assets in Q3 of 2018 in the grocery stores industry averaged at 8.47% (CSI Market, 2018). Compared to these sector averages, Tesco rests just below the field average.

It would behoove Tesco management to improve its ability to turn assets into higher net income by collaboration with a Lean Six Sigma department in order to eliminate waste in asset management so as to decrease it without hurting net income. For example, Lean Six Sigma's Just-In-Time (JIT) production would eliminate the need for as many shelving, refrigerators, machinery to accept delivery, lift, and stock shelves, and other fixtures. Applying Lean Six Sigma Just-In-Time production principles (Rhea, 1984) would also reduce the amount of perishable inventory and thus free up Tesco's working capital (Deloitte, 2018). These Lean Six Sigma waste elimination in asset management would decrease the divisor of average total assets in the division equation in the Return on Assets ratio calculation, thus increasing the ROA ratio percentage. The pursuit of elimination of waste could be combined with pursuit of increasing cash flow and improving productivity, which could be done by selling or leasing older equipment, properties, and processing plants to other organizations. Additionally, partaking in joint ventures and assessing their return on investment in order to foster increased returns and conducting sector-based benchmarks in order to continually gauge Tesco's ability to innovate and turn profits would improve the Return on Assets ratio.

Acid Test

Ratio Category: Liquidity

Formula = (Total Current Assets - Inventory - Prepaid Expenses) / Current Liabilities

2017/2018 Calculation	2016/2017 Calculation	2017/2018	2016/2017
(13,726 - 2,263 = 11,463) / 19,238	(15,073 - 2,301= 12,772) / 19,234	59.58%	66.40%

Quick assets are current assets that can be converted to cash within 90 days or in the short-term. This quick assets ratio measures the ability of an organization to pay its current liabilities when they arrive using quick assets. From FY 2016-2017 to FY 2017-2018, Tesco's Quick Ratio decreased from 66.4% to 59.58%. This decrease in the ratio demonstrates Tesco's worsening ability in paying off its current liabilities without selling any long-term assets. Additionally, this decreased and low quick ratio also tells investors that Tesco is becoming less liquid with fewer assets, such as cash, cash equivalents, short-term investments, current receivables, are available to be converted into cash if absolutely needed. These figures could discourage creditor confidence in Tesla as the numbers show that creditors may not be paid back on time unless longer-term investments are sold.

Recommendations that Tesco management should consider include paying off current bills while concurrently increasing sales. This simultaneous action would increase cash-on-hand and short-term assets for Tesco. From additional financial perspectives, Tesco could facilitate improving its liquidity by improving its management of asset productivity, stock turnover, payables, and debtor receivables. From a borrowing perspective, Tesco could renegotiate interest and repayment of short-term borrowings with banks.

To further bolster its quick ratio, Tesco could shore up the inventory turnover ratio, meaning that the organization would more quickly convert inventory into cash. This could be accomplished through a collaboration between the finance and marketing functions for example, where marketing would utilize neuromarketing strategies in market research, real estate and facilities, and operations (MacInnes & Steidl, 2016) and assist in the spatial positioning of products on specific shelves in certain parts of the store that would most allure customers to pick them up. The market research from the Marketing function could also be leveraged and triangulate with HR's Diversity and Inclusion department and Lean Management by implementing of Just-In-Time production of specific and most highly in-demand products in diverse neighborhoods and localities where a Tesco brick-and-mortar store is located (Leishman & Nygaard, 2003), a strategic collaboration cross-functionally that would boost sales, improve cash flow, improve the inventory turnover ratio, and also the quick ratio. Another path that Tesco management could take to boost the organization's quick ratio is to discard unproductive assets. One way to do discard unproductive assets is to standardize machinery and ensure they are working efficiently in energy consumption. If for example refrigerators are not environmentally friendly, they would consume more energy than needed and driving up the organization's electricity bills (Dutt, 1995), thus increasing Tesco's costs and further cutting into profits. Standardization in the adoption of energy-efficient machinery would be useful in driving long-term costs down (Sorrell, 2015). This could be a collaboration between Tesco's finance department and its corporate social responsibility department, where financial targets such as the improvement of its quick asset ratio could be achieved through environmentally sustainable goals (Tesco, "2018 Strategic Report," 2018) that the organization has.

Working Capital (Current)

Ratio Category: Liquidity & Investor

Formula = Current Assets / Current Liabilities

2017/2018 Calculation	2016/2017 Calculation	2017/2018	2016/2017
13,726 / 19,238	15,073 / 19,234	71.34%	78.36%

The Current Ratio, also called the Working Capital Ratio, measures an organization's ability to pay off its short-term liabilities with its present assets. This is an important financial measure as short-term liabilities are typically due within the year, meaning that the organization has a set time in garnering funds to pay off the liabilities. Given that the current ratio of Tesco is less than 100%, this is risky territory as it means that the organization would have to sell off its current assets in order to meet and pay off its liabilities. A ratio less than 100 would mean that Tesco cannot easily pay off its existing liabilities, demonstrating to investors that the organization is not making enough from operations in order to support its activities, simply informing investors that the organization is losing money.

Recommendations to improve current assets is to increase cash flow for Tesco, which could be accomplished through increased sales, decreasing short-term borrowings, increasing trade payables, and diversifying its market presence and increasing its operations in jurisdictions with lower corporate taxes. Partaking in Corporate Social Responsibility and Diversity and Inclusion could have positive financial returns. This could take the form of leveraging corporate philanthropy and participation in venture capital investing in Minority- and Women-Owned start-ups could also act as tax shelters, depending on the jurisdiction. Collaborating with Strategy, Corporate Social Responsibility, and Diversity & Inclusion departments in order to

identify enhanced ways to increase corporate tax deductions that would decrease Tesco's current liabilities and thus increase its Working Capital ratio. Additional recommendations to pursue include applying Just-In-Time manufacturing to decrease supply chain and storage costs and improving its collections of accounts receivable. The finance function should expand to invoicing early (CICM, 2017), making payment terms clear, cultivating and obtain all-level buy-in towards a cash management culture through Prosci Change Management (Deloitte, 2017), and establishing alternative means of payment both in store and online to make payments easy and customized for customers (Niven, 2013), such as expansion into using PayPal, Venmo, all credit cards, debit cards (CICM, 2017), Apple Pay, Google Wallet, Android Pay to accommodate those who do not carry cards or cash, multiple currencies to accommodate tourists, and even cryptocurrency like Bitcoin, Ethereum, and LiteCoin (Bradford, 2018) in order to accommodate younger generations like Millennials and Generation Zs.

Times Interest Earned

Ratio Category: Gearing

Formula = (Revenue - Operating Expenses) / Interest Expenses

2017/2018 Calculation	2016/2017 Calculation	2017/2018	2016/2017
$(57,491 - 1,663) / 351$ = 55,828 / 351	$(55,917 - 1,995) / 522$ = 53,922 / 522	159	103

Also called the Interest Coverage Ratio, the Times Interest Earned Ratio measures the proportionate amount of income that can be used to cover interest expenses in the future. At times, the Times Interest Earned is considered a solvency ratio as it tracks an organization's ability to meet its interest and debt payments. The increase in Times Interest Earned means that

from 103 in FY 2016/2017 to 159 in FY 2017/2018 means that Tesco's income is 57.28% greater compared to the organization's interest expense, highlighting a greater organizational capability in paying additional interest expenses. This is a signal to investors and creditors that Tesco is less risky and buying stocks and lending money to the organization are not risky endeavors. Although a high Times Interest Earned ratio is generally favorable, it does not necessarily mean that Tesco is managing its debt repayment or its financial leverage in the most optimized way. This is especially true when the Times Interest Earned Ratio is compared to the grocery industry Times Interest Earned Ratio average, which is 9.50 in 2018, which places the grocery industry as number 2 highest in Times Interest Earned ratio in the broader retail sector. Given Tesco's Times Interest Earned Ratio being far above the industry average, this financial ratio compared to the rest of the industry and the sector demonstrates that Tesco is taking a more conservative approach and not utilizing excess income for reinvestment through industry-expansion or new projects, a move that could discourage long-term investors.

Approaching this from a cross-functional perspective by looking at the collaboration between the Finance department and the Human Resources, Operations, and Strategy departments, this high Times Interest Earned and the lack of expansionary investment it suggests is also reflective in Human Resources and strategic operations figures present in Tesco's five year record from FY 2014/2015 through FY 2017/2018. Within that five year timespan, Tesco globally has decreased its number of stores from 7,305 to 6,966 and also decreased its total aggregate number of employees from 510,444 to 448,988. These significant cuts in investing in stores, market share, and employee headcounts signal the increasing market competition from German supermarket chain such as Lidl and Aldi in both the United Kingdom and Europe.

Tesco's aggressive stance in paying interest expenses and conservative position in expansionary investments as the Times Interest Earned Ratio highlights could be explained by Tesco's FY 2014/2015 Group Operating Loss (not profit) of 5,750m GBP that it subsequently turned to 1,017m GBP in FY 2016/2017 and 1,837m GBP in FY 2017/2018.

While de-investment in brick-and-mortar operations and reduction in employee headcount may improve Tesco's short-term ability to meet its interest payments, and thus look more competitive and more attractive, at least in the short-term, to creditors and investors, its long-term strategic competitive advantage could be in jeopardy with an expansionary Aldi and Lidl in Europe and the UK (Wells, 2014), which comprise of Tesco's largest market shares in its global operations (Schrage, 2014). It would behoove Tesco to ensure that meeting its short-term interest payment demands should not come at the expense of its ability to remain competitive in the long-term in its own home base and its immediate neighbors in Europe. Additionally, organizational development executive coaching, performance, and employee engagement assessments should be leveraged in tandem with the Human Resources function in order to ensure that the closure of stores and layoffs through reductions in headcount did not significantly impede employee morale, job satisfaction, productivity, and performance as this could have ramifications on corporate social responsibility commitments, corporate branding, customer surveys of employee-client interactions, and ultimately Tesco's ability to attract and retain customers.

Debt to Equity

Ratio Category: Investor & Gearing

Formula: Total Debt / Total Equity

2017/2018 Calculation	2016/2017 Calculation	2017/2018	2016/2017
12,284 / 10,458	16,673 / 6,414	1.1746	2.599

In 2018, the average total Debt to Equity ratio is 0.16. Tesco's Debt to Equity ratio is significantly higher than the industry average, meaning that Tesco's figures is in risky territory, thus being a sign of caution to investors and creditors. This means that in FY 2017-2018, there are nearly double the existing total liabilities than the total equity that Tesco generates. This shows that perhaps in the future, companies such as Tesco that have large amounts of debt may not be able to meet their payments.

Unlike equity financing, debt that Tesco incurred has to be repaid to the lender. This large debt to equity ratio could also explain why the Times Interest Earned Ratio is exceedingly high compared to industry averages as debt requires debt servicing or regular interest payments. From a creditor perspective, Tesco's higher debt to equity ratio as compared to Grocery Industry averages is risky as it demonstrates that investors have not funded Tesco's operations to the same degree that creditors have, which especially in the long term, could be a more costly form of financing than equity financing through investors. From a creditor standpoint, this high debt to equity ratio highlights that perhaps investors have not funded Tesco's operations as much as other creditors may have. From an investor perspective, this ratio figure means that investors may not want to fund Tesco operations because the high debt to equity ratio may signal that the organization is not performing well. However, it is a bit reassuring that Tesco managed to

decrease its debt to equity ratio by a third within a fiscal year, meaning that should the organization continue to increase the equity it generates while maintaining or decreasing its liabilities, it could make the debt to equity ratio more appealing to investors and creditors in the future.

To further address this red flag that arises from examining Tesco's Debt to Equity ratio, the company should consider issuing new or additional shares in order to increase cash flow, which could in turn be utilized to repay existing liabilities and diminish the debt burden. This decrease in total debt would likewise reduce the total debt to total equity ratio. Another potential solution is to implement a debt/equity swap by making holders of Tesco's debt an equity shareholder in the organization, which would cancel the debt owed to Tesco, reduce the total debt, and improve the Debt to Equity Ratio. As the increased sales and lower headcount suggest, Tesco could continue in attempting to improve the Debt to Equity Ratio by concentrating on increasing sales without increases in employee headcount expenses as the organization has been doing since 2015.

These approaches in lowering the Debt to Equity ratio is critical to Tesco's future survival, especially in an ever-increasing market space, as it is an important solvency ratio. Should Tesco ameliorate the Debt to Equity ratio, creditors would feel more comfortable and confident that they will get their money back and can safely issue new loans for new projects. For potential investors, it also would signal to them that equity financing would generate returns on investments for Tesco in a more sustainable fashion should this crucial solvency ratio be moderated into a more acceptable range closer to the industry average. These improvements in creditor and investor confidence would be imperative should Tesco seek to remain competitive

and survive long-term in the marketplace by getting back Tesco's brick-and-mortar stores that it had shuttered, recreate jobs that it had cut, and regain market share that it had lost since 2015.

Asset Turnover

Ratio Category: Efficiency

Formula = Net Sales / Average Total Assets

2017/2018 Calculation	2016/2017 Calculation	2017/2018	2016/2017
57,491 / 13,726	55,917 / 15,417	4.188	3.62

The asset turnover ratio measures a company's ability in generating sales from its own assets through comparison of net sales with average total sales. Through this ratio, the organization can show how efficiently they can use assets to create sales. These asset turnover ratios for FY 2016-2017 and FY 2017-2018 means that for every GBP of assets that Tesco has, each GBP generates 4.1 GBP in sales in FY 2017-2018 and 3.62 GBP in sales in FY 2016-2017, meaning that the organization is extremely adept and efficient in converting its assets in order to generate sales. In order to further increase this competitive advantage that Tesco has already, I would recommend making online grocery shopping improvements. This could be done through the purchase and use of artificial intelligence, such as robots in processing centers that operate in grid-like patterns in order to more efficiently box items intended for online delivery. This is to mirror international organizations such as those by Ocado, a British company with ties to American and Chinese e-commerce companies, uses a combination of air-traffic-control systems and artificial intelligence in packaging its items intended for online orders (Clarke, 2018).

Another example for Tesco to mirror in order to increase the asset turnover ratio is to improve the customer experience. In bigger metropolitan areas and areas where the operations and marketing departments have identified that there are long lines in the brick-and-mortar stores, Tesco could adopt a similar move such as Amazon's employment of increased automation, greater efficiency, and a more seamless customer experience in its Seattle "Amazon Go" store (Kittalaksanawong & Karp, 2017). Entering the shop in the store involves shoppers scanning their smartphones with the Amazon Go app at the turnstiles, picking out the items they would like to purchase, then leaving the store - all done without the use of cashiers and checkout lines. This would facilitate shopping and purchases and would particularly cater to those who do not have the time or the patience to wait in line as the transactions are completed using increased automation, thus resulting to increased asset turnover, payment receivables, and cash flow through leveraging technology.

Inventory Turnover

Ratio Category: Efficiency

Formula = Cost of Goods Sold / Average Inventory

2017/2018 Calculation	2016/2017 Calculation	2017/2018	2016/2017
54,141 / 2,263	53,015 / 2,301	23.92	23.03

The inventory turnover ratio demonstrates how effectively an organization's inventory is managed by comparing the cost of goods sold with average inventory for a period. In order to improve the inventory turnover ratio, ensuring that Just-In-Time manufacturing as borrowed from lean six sigma ensures that storage costs are minimized in addition to other holding and

shipping costs. This would include refrigeration of goods while in transit and while in the brick-and-mortar stores, in addition to the processing centers for online orders. Through this implementation of Just-In-Time manufacturing, the risk of Tesco incurring storage costs and holding costs would be minimized as the organization would not be ordering beyond a reasonable limit according to six sigma principles that it could sell. This would involve leveraging historical sales records based on geographical data and making accurate sales forecasts in Just-In-Time supplier inventory (Chapman, 2007) in tandem with market research as the organization implements an expansion in its market share. This would ensure that while the company is growing and meeting the needs of its customers in existing and newer markets that are in flux, the organization continues to generate sales that proportionally match its inventory purchases. Improving the inventory turnover ratio is critical to the organization as it demonstrates to investors and creditors the extent to which Tesco's inventory is liquid. Simply put, the ratio demonstrates that if Tesco has illiquid inventory, this is inventory that cannot be sold and is therefore worthless to the bottom line of the company. These improvements in the inventory turnover ratio is important for credit borrowing in the future as inventory is often put up as collateral for loans should that moment arrive. A high inventory turnover ratio would boost banks' confidence in Tesco as it decreases the risk that should the banks need to tap into collateral as a last resort, that inventory collateral would be liquid enough to sell due to effective inventory control.

Payout

Ratio Category: Investor

Formula = Dividends Per Share / Earnings Per Share

2017/2018 Calculation	2016/2017 Calculation	2017/2018	2016/2017
491.4 / 12.12 from 2 dividends	181.40 / 0.81 from 1 dividend	40.544	223.95

The Payout ratio measures the sustainability of a given company's dividend payment system. Tesco had an enormously high payout rate as exemplified by the FY 2016-2017 ratio, which means that the company is sharing more of its earnings with its stockholders. This figure was very high in 2016, which means that Tesco was paying more money to its investors than money it was taking in, which is an unsustainable business model and a tell-tale sign for investors that the dividend payment would only decrease in the future should organizational sustainability be Tesco's goal. However, within a fiscal year timespan, Tesco has aggressively decreased its Payout rate, thus signaling that the organization is retaining more of its earnings to fuel its growth. This means that within this timeline, Tesco has been paying off more of its debt, which has freed up the organization's equity to be repurposed towards expansion, continuous improvement, and innovation. Suggestions to improve the payout ratio to be more appealing to investors would be to stabilize its dividend payments over time, thus providing confidence to investors that dividend payout would not drastically decrease in the future as it had from FY 2016-2017 to FY 2017-2018.

Conclusion: Limitations of Ratio Analysis and the Road Ahead

While these ratio calculations have been useful in gauging the financial performance of Tesco, they continue to have their shortcomings. In particular, these drawbacks can be themed into three sets of problems: informational, comparative, and inter-organizational comparisons. From an informational lens, the base information is frequently outdated, meaning that the timeliness of the information being analyzed leads to issues when interpreting. Previous cost information may not lend itself as the most useful information for the investment decision. Information in published documents are usually summated information, rather than more descriptive and specific, which means that specificities are largely ignored. Moreover, the use of accounting information sheds light only on symptoms and not on causes, which when trying to perform root cause analysis from a financial and accounting point of view, this would not be possible through a ratio analysis.

From a comparative perspective, the outcomes of price changes render comparisons difficult without adjustments. From a mathematical viewpoint, there is no standard normal base year to compare other years with in ratio analysis, thus leaving the data to multiple interpretations in accordance with how different analysts would like to present the data and present findings. From an innovation perspective, the influence of technological changes and how they inform asset prices, prospective returns, and future forecasts are outside the scope of ratio analysis; on top of this blindspot on technological backdrop, a changing market environment that constantly evolves and informs the organization and its finances is also beyond the scope of analysis in ratio calculations. They may suggest that larger macroeconomic environment forces are in play, although the numbers alone without quantitative studies and

strategic partnerships with other functions falls short in reading the competitive landscape. This is a large gap that exists in ratio analyses but one that could be pivotal in preserving an organization's strategic competitive advantage, especially in what many scholars call the Fourth Industrial Revolution of the present day (Piketty, 2017; Schwab, 2017).

Using ratio analysis presents inter-organizational comparison challenges. For examples, different organizations may have differing financial and risk management profiles, which makes a perfectly apples to apples reading seldom to come by. These same financial figures reported could also lack standardization across organizations as various companies may use different accounting principles, thus making the numbers less accurate and trustworthy when comparing in a cross-organizational study. Additionally, many figures are in raw numbers, which when compared across organizations, this inter-organizational comparison does not factor in how the size of the company informs its risk, structure, and returns in the ratio analysis. In a similar vein, inter-organizational ratio analyses do not consider the maturity of the business, meaning that new start-ups in the grocery industry, for example, are compared with the more traditional and well-established corporations. Lastly, when comparing across organizations, multinational organizations are frequently compared. These multinational organizations are subject to a diverse array of regulatory compliance obligations respective to the country and jurisdiction they operate in, thus meaning that difference in laws across jurisdictional borders make inter-company comparisons more difficult as they could have a sizeable impact on a company's operations, spending and returns, and even the organization bottom line.

This study laid out calculations and interpretations of Tesco's financial performance using ratio analysis. It likewise recommends that emerging out of Tesco's "lost decade" involves

the Finance function forming strategic partnerships with departments such as Human Resources, Marketing, Strategy, Diversity and Inclusion, Organizational Development, Change Management, Operations, Information Technology, Analytics, and Lean Management. Through these cross-functional recommendations, Tesco could begin generating more cash flow, abide by a new cash management culture, optimize financial processes and operational efficiencies which would reduce costs, and subsequently begin to strategically re-enlarge its market share and regain its competitive advantage both in the United Kingdom and abroad.

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Appendix

Summary of Recommendations

Strategic Area & Collaborations	#	Action
Internal Finance	1	Pay off current liabilities while concurrently increasing sales, thus leading to increased cash on hand and more short-term assets.
	2	Stabilize dividend payments over time in order to boost long-term investor confidence.
Information Technology	3	Invoice Early, clarify payment terms, and adopt easier and more customized means of payments, such as accepting credit cards, debit cards, Apple Pay, Google Wallet, Android Pay, multiple currencies, and crypto currencies in order to accommodate all payment methods across cultural barriers and accommodate for generational differences.
	4	Research and employ artificial intelligence and air-traffic-control in processing centers in order to increase packaging efficiency and increase sales through ecommerce. This involves examining best practices internationally, such as artificial intelligence uses of retailers in China and the United States.
	5	Apply increased automation in brick-and-mortar stores, emulating Amazon's "Amazon Go" stores in Seattle that accomplishes automation through a combination of no checkout lines, turnstiles, and automatic mobile charges.
Marketing and Corporate Strategy	6	Utilize market research and engage with research and development in order to position, customize, and target marketing strategy in order to boost investor confidence, improve brand loyalty, enhance economies of scale, and make more enticing customer captivity.
	7	Utilize neuromarketing strategies in market research, real estate and facilities, and operations in order to best spatially position products physically that would most allure customers, thus stimulating cash flow through increased product turnover.
Human Resources and Organizational Development & Change Management	8	Engage with Human Resources and Organizational Development & Change Management in order to develop, communicate, and foster adoption of improved financial and IT processes, inclusive of leveraging technological automation, process optimization, and leveraging Key Performance Indicators.
	9	Triangulate with Diversity and Inclusion and Lean Management in order to position and apply Just-In-Time production of specific and highly

		in-demand products in diverse neighborhoods and localities where brick-and-mortars are located.
	10	Collaborate with Strategy, Diversity and Inclusion, and Corporate Social Responsibility to leverage corporate philanthropy and participate in venture capital investing in Minority- and Women-Owned start-ups, both of which could act as tax shelters depending on the jurisdiction. This shared commitment in pursuit of social responsibility if leveraged in favorable tax jurisdictions would decrease Tesco's current liabilities and increase Tesco's working capital.
	11	Leverage Prosci Change Management in the financial function in order to cultivate and obtain all-level buy-in towards a cash management culture.
	12	Partner with Human Resources & Operations in order to maintain a healthy balance of reductions in employee headcount and payoffs of short-term interest payments, simultaneously employing assessments such as employee engagement surveys, executive coaching, employee performance in order to constantly obtain litmus tests of the organizational climate.
Lean Management & Business Analytics	13	Leverage partnerships to utilize interdisciplinary methodologies such as Lean Six Sigma, Project Management, and Data Analytics in order to create SMART goals, more detailed road maps, and create easily accessible Working Capital optimization strategy, all of which would improve turnover, asset productivity, and maximize yield.
	14	Engage in industry-based and sectoral market research in order to gauge performance vis-à-vis competitors. This involves comparison with specific companies as well as industry and sector averages.
	15	Adopt Lean Six Sigma Just-In-Time (JIT) production in order to eliminate waste, curtail expenditures, optimize efficiency. JIT production principles would reduce perishable inventory, increase cash flow, improve productivity, and free-up Tesco's working capital (Deloitte, 2018).
Corporate Social Responsibility	16	Liaise and co-create a Finance, Lean, and Corporate Social Responsibility organizational shared goal of standardizing machinery and updating in order to ensure their optimization in energy sustainability, thus contributing to Tesco's CSR environmental sustainability goals of reduced carbon footprints while also decreasing liabilities like electricity bill obligations in day-to-day operations.
Joint Ventures and Mergers and Acquisitions	17	Assess return on investment of joint ventures and mergers and acquisitions to propel organization towards increased returns through expanded market share and maximize Tesco's strategic competitive advantage.

A Financial Analysis of James Plc Investment Projects



Justin Fernando
Student ID: 1705758
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SMBA 7100D: Financial Management
Professor Richard Dunstan

The Utility of Net Present Value

The most salient advantage in utilizing Net Present Value as a method of investor analysis is that the method is predicated on the idea that money received in the future is worth less than money in the bank in the present. Through Net Present Value analysis, future years' cash flow is discounted back to today in order to gauge their worth. Additionally, Net Present Value calculates a currency denomination amount that indicates how much the project and undertaking will generate for the organization. This financial forecasting capability that Net Present Value provides allows stockholders and potential investors to visibly see how much an undertaking will contribute and hopefully augment a company's value, demonstrating more lucrative and productive pursuits with fewer opportunity costs. The Net Present Value also utilizes a company's cost of capital as the discount rate, which serves as the minimum rate of return that shareholders require for their investment in a corporation (Woodruff, 2018).

The benefits of employing the Net Present Value calculation as a method of financial analysis should be assessed alongside its shortcomings. The most significant disadvantage of utilizing the calculation of Net Present Value is its sensitivity to discount rates (Ross, 1995). This is because Net Present Value calculations are simply an aggregate of multiple discounted cash flows that are both positive and negative, which are then converted into current value terms for the same starting point when the cash flows start. As a result of this, the discount rate utilized in the denominators of each present value calculation is integral in determining the final Net Present Value calculation. Because the Net Present Value is sensitive to discount rates, a slight increase or decrease in the discount rate would translate to a sizeable effect on the final number generated as the Net Present Value (Gallant, 2018).

Additionally, questioning Net Present Value's value-added as a forecasting financial tool (Dayananda et al., 2002) is the challenge that determining an exact discount rate to use presents. From a risk of loss perspective (Floreani, 2011; Merton & Perold, 1993), pegging a percentage number to an investment to represent its risk premium is difficult, which could skew the resulting Net Present Value and thus the interpretations that stockholders and potential investors take away from the Net Present Value calculations.

Another complicating matter for Net Present Value are the shifting levels of investment risk throughout the duration of the project. For example, a given investment could have a low risk of loss for the first year but a high risk for the last four. We could use different discount rates for each time period. However, this would make our model and calculation more complex and would require significant effort from us to peg five different discount rates with exact precision. The significant amount of guesswork in pegging discount rates to specific time periods makes the use of Net Present Value difficult as its output might not be as reliable due to the guesswork. This volatility in levels of risk (Christoffersen & Diebold, 2006) are risk management factors (Wipplinger, 2007) that Net Present Value is unable to account for. It would behoove financial analysts using Net Present Value to couple Net Present Value calculations with a qualitative assessment of risk factors experienced throughout the duration of the project in order to more comprehensively contextualize the Present Value figures and Net Present Value calculation. This is contextualization of Net Present Value with a risk management assessment is sound practice from a financial leadership agility perspective (Horney et al., 2010), especially in a volatile, uncertain, complex, and ambiguous (VUCA) marketplace (Bennett, Lemoine, 2014). Leveraging qualitative methodologies such as risk management assessments coupled with change

management principles would create organizational change readiness (Dyer & Shafer, 1998; Holt et al., 2007) emanating from the financial function, an organizational capability that would better equip the organization to respond strategically (Smith, 2005) to rapidly shifting landscapes and uncertain futures and allow the organization to retain its competitive advantage (Luthans & Youssef, 2004).

Moreover, leveraging Net Present Value as a financial analytical tool becomes a challenge when two investment projects that differ in size are compared (Shrieves & Wachowicz, 2007). For example, if a 5 million GBP investment project will very likely generate a higher Net Present Value, which is measured in GBP, than a 5,000 GBP investment project, even though the 5,000 GBP investment project may lead to significantly higher returns in percentage terms but a lower NPV in GBP terms. This makes Net Present Value biased in favor of larger capital investments than those with lower capital, thus making the Net Present Value calculation less reliable when comparing projects of differing size (The Motley Fool, 2018).

Aside from being insufficient in overcoming the difficulty of measuring projects of differing size, the Net Present Value calculation also struggles to compare projects that have different time durations. The Present Value calculation relies on adding all the Future Value/ $1 + \text{cost of capital}^{\text{specific year}}$. If there are an uneven number of years, the numbers of addends would be vastly multiplicitous in the project with a longer lifespan than the number of addends in the project with a shorter time duration (Woodruff, 2018).

Further, the finance function has to work with the rest of the organization in order to accurately forecast cash flows in the future. On top of the guesswork that occurs in the estimation of a given organization's cost of capital and opportunity costs, this guesswork

involved in forecasting future cash flows is a challenge yet is a huge determinant of the Net Present Value outcome since “Future Value” is the dividend in the present value calculation of $\text{Future Value} / (1 + \text{cost of capital})^{\text{specific year}}$. An inaccurate forecast of future value, whether an underestimation or an overestimation would skew the Present Value of a given year and Net Present Value calculation of the entire duration of the project, which greatly compromises the ability of the financial function to adequately vet whether undertaking the investment proposal is worth it.

In addition, should we analyze the utility of Net Present Value within the context of expansions such as mergers and acquisitions that many large-scale and global organizations pursue to retain their competitive strategic advantage and expand their market share (Shoham, 1998), Net Present Value as a financial investment analytical model falls short. If for example a small start-up organization is losing money in its infancy (Sequeira & Rasheed, 2006) because it is in its initial stages as a corporation but is expected to grow immensely (Davila et al., 2003) within two years as it acquires other companies, there should be a way to incorporate this expected growth into a calculation. However, the Net Present Value formula does not pave way for a mechanism to include expansion through mergers and acquisition (Deloitte, 2015). The future value, whether gains or losses, that mergers and acquisitions could generate should be a significant factor whether an investment decision is made early on in the project. Using mergers and acquisitions as an analytical framework in an investment decision is critical for the survival and sustained value creation of any organization (Cartwright & Cooper, 2012) as companies out-innovate and out-compete each other in an increasingly crowded marketplace at home and abroad (Shimizu et al., 2004).

Alternative evaluation calculations can be used for short-term projects. For example, the payback-period method calculates how long it will take to earn back the project's initial investment. This calculation does not consider the time value of money, which means it is less than ideal for long-term and high inflationary environments (Forni et al., 2003; Svensson, 1997). The Internal Rate of Return calculation is different from the NPV calculation as the IRR considers only the cash flows from each period and disregards the initial investment.

Alternative Factors Before Investing

Alternative factors to consider before making an investment engagement includes improvements in asset allocation, which takes the form of diversification of investment. This would decrease the exposure of a given organization to technological disruptions that alter the goods and services provided. The organization could also explore the creation of an emergency fund in order to limit short-term liabilities and preempt the accumulation of long-term liabilities and provide temporary refuge during times of volatility and uncertainty. It would also behoove financial investment analysts to examine the ability of the given organization in paying off its high interest debt taking special note of its capability to moderate its debt to sustainable levels. This should be contextualized and assessed with the ability of a company to generate additional cash flow and expand into profitable markets, which could suggest brighter future financial forecasts. Investors into a given organization could also “dollar cost average” over time in order to minimize risk exposure to stock price volatility (Cho & Kuvvet, 2015; Dubil, 2005). The financial function in the organization could also collaborate with its marketing and public relations departments in order to improve its ability to attract investors instead of solely creditors

as this would minimize debt owed and bolster more positive financial outlooks for the organization and stimulate a groundswell for increased investor confidence in the future (Ko, 2017).

To make themselves more attractive to potential investors and improve its own internal financial function, organization should explore taking on a strategic risk management lens in approaching financial portfolio management. In particular, this means that as market shifts occur, the organization's financial function is agile and strategic enough to assess market developments and subsequently rebalance its portfolio engagements (Calvet et al., (2009) accordingly in order to retain the organization's competitive advantage. Additionally, risk management could also be applied with an internal introspection. The finance function could engage in fortifying internal financial controls (Adams, 1994) and revamp the role of internal audit in its financial processes and transactions. (Spira & Page, 2003). This would minimize risks of corruption and scandals in the organization, which would trigger governmental regulatory oversight, hamper investor confidence, and dampen future financial outlook should they occur. Improvements in corporate finance internal audit could be augmented with process optimizations through a partnership with Lean Management and the application of Lean Six Sigma principles into the financial function. This would strengthen corporate finance's internal audit measures, while concurrently facilitating the mitigation of losses, the maximization of finance's strategic positions and economies of scale, and the reduction of waste in operations and cash management processes. Collectively, these change management, lean management, and corporate internal audit enhancements in the financial function would position the organization to be better able to

generate increased cash flow, more compliant to regulatory obligations, and make itself more attractive to potential investors (U.S. Securities and Exchange Commission, 2018).

Corporation Tax and Tax Allowances

In the majority of countries globally, they allow depreciation over the fixed asset in taxation programs. This is called Capital Allowances, which allows owners to save from paying additional tax to taxation bureaus. In general, capital allowances can be claimed for capital such as properties, automobiles, machinery, fixtures, among others. In the Net Present Value calculation, the focus will be on the depreciation rates as outlines in the tax regime.

With taxation in play, the initial investment cash flow does not get affected with tax. Additionally, the working capital, which is the difference of current assets and current liabilities, does not get affected with tax. However, while these two figures are impacted, the following three are cash flows that remain unaffected due to taxation: the revenue cash inflows, the expense cash outflows, and the depreciation calculated using tax capital allowance method. If the Net Present Value is negative, the project for investment should not be pursued.

In general, the tax shield is a reduction in taxable income for an individual or a corporation, accomplished through claiming allowable deductions, such as depreciation. The tax shield is important as it reduces the taxpayer's taxable income for a given year and is a way to save cash flows and increase the value of the organization. The tax shield can thus be used to augment the value of the corporation, as it reduces the tax liability that otherwise would decrease the company's asset value. Many organizations leverage tax shields in order to save cash outflows and increase the value of the organization.

Assessing Each Proposed James Plc Project through NPV Calculations

Formulas

<u>Corporate Tax</u>	<u>Inflow (Profit) x tax rate 20%</u>
<u>Capital Allowance</u>	<u>(25% Capital Allowance x Starting Investment) x 20% tax rate.</u>
<u>Discounted Factor</u>	<u>Net Inflow x 8% discounting rate</u>
<u>Net Present Value</u>	<u>(PV Start Year 0) + (PV Year 1) + (PV Year 2) + (PV Year 3) + (PV Year 4)</u>

Expanding its flourishing retail outlet to include all products					
Project A	Start - Year 0	Year 1	Year 2	Year 3	Year 4
		in GBP	in GBP	in GBP	in GBP
Outflow					
Starting Investment	-750,000				
Inflow		400,000			
Tax 20%		-80,000	-100,000	-100,000	-100,000
Capital Allowance 25%		37,500	37,500	37,500	37,500
Net Inflows		357,500	437,500	437,500	437,500
Discounted Factor 8%	1	0.925	0.857	0.793	0.735
Present Value	-750,000	331,019	375,086	347,302	321,576

Project A's NPV = **624,981 GBP**

Because Project A has a positive NPV, we accept this project as financially viable.

Develop into Internet Sales					
Project B	Start - Year 0	Year 1	Year 2	Year 3	Year 4
		in GBP	in GBP	in GBP	in GBP
Outflow					
Starting Investment	-1,200,000				
Inflow		500,000	600,000	800,000	1,000,000

Tax 20%		-100,000	-120,000	-160,000	-200,000
Capital Allowance 25%		60,000	60,000	60,000	60,000
Net Inflows		460,000	540,000	700,000	860,000
Discounted Factor 8%	1	0.925	0.857	0.793	0.735
Present Value	-1,200,000	425,926	462,963	555,683	632,126

Project B's NPV = 876,697 GBP

Because Project B has a positive NPV, we accept this project as financially viable.

Produce Greenhouses and Conservatories					
<u>Project C</u>	Start - Year 0	Year 1	Year 2	Year 3	Year 4
		in GBP	in GBP	in GBP	in GBP
Outflow					
Starting Investment	-2,000,000				
Inflow		500,000	1,000,000	1,500,000	1,500,000
Tax 20%		-100,000	-200,000	-300,000	-300,000
Capital Allowance 25%		100,000	100,000	100,000	100,000
Net Inflows		500,000	900,000	1,300,000	1,300,000
Discounted Factor 8%	1	0.925	0.857	0.793	0.735
Present Value	-2,000,000	462,963	771,605	1,031,982	955,539

Project C's NPV = 1,222,089 GBP (For IRR Calculation, we will treat this as the First NPV)

Because Project C has a positive NPV, we accept this project as financially viable.

Because out of all three project options, Project C has the highest NPV. Additionally, there is complementary business sense into diversification and expansion through the construction of

greenhouse cases and conservatories as these new lines of business would increase demand for James Plc's garden supplies.

Using Internal Rate of Return for Project C's Production of Greenhouses and Conservatories

In order to arrive at the Internal Rate of Return (IRR), we will try to calculate the discount factor where Net Present Value (NPV) is zero.

<u>IRR Calculation:</u>					
Produce Greenhouses and Conservatories					
Project C	Start - Year 0	Year 1	Year 2	Year 3	Year 4
		in GBP	in GBP	in GBP	in GBP
Outflow					
Starting Investment	-2,000,000				
Inflow		500,000	1,000,000	1,500,000	1,500,000
Discounted Factor 30% (Hypothetical)	1	0.769	0.591	0.455	0.35
Present Value	-2,000,000	384,615	532,544	591,716	455,166
IRR Formula (in % terms)	$a + [(FirstNPV) / (FirstNPV - SecondNPV) \times (b - a)]$				
	a 8% discount rate				
	b hypothetical discount rate 30%				
FirstNPV (at 8%)	1,222,089 GBP				
SecondNPV (at 30%)	-35,958 GBP				

Using the formula in percentage terms, we plug in the numbers to arrive at the Internal Rate of Return for Project C:

$$IRR = .08 + [1,222,089 / (1,222,089 - -35,958) \times (.3 - .08)]$$

Project C's IRR = 29.37%

We come up with the hypothetical discount factor of 30%. Using this hypothetical discount factor of 30%, we then see that the Internal Rate of Return discount rate when the NPV approaches zero is 29.37%.

Optimal Investment Policy

Should we assume that funds are limited to 2,500,000 GBP and the projects are divisible, we will arrive at the optimal investment policy using capital rationing. We will allocate the 2,500,000 GBP funds to 2 projects.

1. Project C at 100% of starting investment: We allocate 2,000,000 GBP to Project C
Because Project C has the highest NPV of all three projects, we will be applying 2,000,000 GBP to Project C, which is the entirety of the starting investment for Project C. As a reminder, the total NPV of Project C is 1,222,089 GBP. This will leave us with 500,000 GBP leftover.

2. Project B at 40% of starting investment: We allocate 500,000 GBP to Project B
We will use this 500,000 GBP and apply part of it to Project B, which is the undertaking that has the second highest NPV. We will apply at 40% of Project B's starting investment. The total NPV for Project B is 876,697 GBP from the starting investment of 1,200,000 GBP. We then perform the following calculation: $0.40 \times 876,697 \text{ GBP} = 350,697 \text{ GBP}$, which is 40% of Project B's Total NPV.

We add the total NPV (100%) of Project C, which is 1,222,089 GBP to 40% of Project B's NPV, which is 350,697 GBP. This results to a total NPV of 1,572,767 GBP.

Sources of Finance Recommendations

Sources of finance that a particular organization may select would differ based on different factors. These factors include the nature of the business and project undertaking, the size of the organization, the actual cost of the finance, the length of time that financing is required, and the risks involved. Sources that may derive internally are retained profit, which is the leftover profit after cost is subtracted from the sell price. Cash in the bank that a business has, such as a business' emergency fund, and owners' investment, which is the money that the

business owner owns themselves and uses for business investment purposes. The organization could also sell or lease the assets it has, such as used equipment and property. Out of these options, cash in the bank such as an emergency fund or an owner's investment are considered short-term, (1 year) retained profit and lease and sale of assets is considered medium term, which could span one through three years. The owners' own investment could be considered as longer term financing, which could last three years or more.

External sources of finance are those derived from outside the organization, such as overdraft, which is when a bank provides a company the opportunity to go beyond their limit and into negative territory. This also includes trade credit, which is when an item or service is purchased from a supplier or provider, and there is a given window of time allotted to pay past the point of purchase. Other external sources of funding also include bank loans, which come with interest, grants, which come from the government, and taking a new partner, which may involve giving the other stakeholder partial ownership of the organization. The organization could likewise take out a mortgage in order to purchase a building should it seek to expand physical operations. Overdraft and trade credits count as short-term, which are up to 12 months. Medium term external sources of finance include bank loans, lease hire purchase, and grants, which could span from one through three years, and longer term funding, which are three years or longer, include bank loans, mortgage, lease, and taking on a new partner as part of the business. Out of all these external sources of funding, government grants is the only option that does not need repaying.

From these three project options, assuming that James Plc pursues Project C, which has the highest NPV, I would suggest refraining from adopting personal investment funds and patient

capital, which are money loaned from spouses, parents, family or friends as their high priority sources of finance. If Project C involved a technological revolution in greenhouses and conservatories, thus providing a technological base to James Plc's bottom line, I would suggest funding sources such as venture capital, angel investing, and business incubators. These sources of funding tend to concentrate on high-tech sector endeavors, such as those in biotechnology, information technology, and communications. If the production of greenhouses and conservatories incorporated the use of revolutionary technology that investors perceive as potentially disruptive to existing markets, this could stimulate investor confidence and generate significant funding through venture capital, angel investing, and business incubators. Depending on the stipulation of the angel investor and the contracts in the business incubator, some of these funds could act like grants (free money) or loans from the investor.

James Plc could position its greenhouses and conservatories towards a purpose should it seek additional and less risky sources of funding. For example, should the production of greenhouses and conservatories be tailored and targeted for underserved communities or if the James Plc owner(s) themselves are from an underrepresented and underserved background and could qualify for minority- and women-owned business enterprise (MWBE) government grants, this would be a low risk and potentially medium to high reward funding option. The diversification of greenhouses and conservatories could be applied to community-based economic development, which could be used to revitalize working class neighborhoods. The greenhouses and conservatories could be utilized for horticulture purposes, do-it-yourself farming, urban rooftop farming, and organic farming, all of which various governmental agencies would perceive in submissions to request for proposals (RfPs) as beneficial for society

at large. Should governments invest grant money to assist working class neighborhoods and to assist entrepreneurship among people of color and women as business owners, these investments into these underserved neighborhoods and populations could address the historical lack of access to equity that women and people of color faced and continue to endure. This social and economic mission could be leveraged as a win-win situation to likewise achieve the same government's environmental sustainability goals and healthcare spending reduction goals due to the rooftop urban farming and organic farming capabilities that could result from the greenhouses. For Project C to receive grant funding, James Pls would have to detail a proposal, inclusive of a project description, project benefits, a timeline, CVs of subject matter experts and project leaders, an assessment of project significance, and an assessment on social impact (Sponsored Projects, 2018). Collectively, through these varied array of sources of funding, James Plc can make its dream of expansion into greenhouse and conservatory production a reality and provide its organization more strategic advantage as it competes in an increasingly uncertain and disruptive economy.

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