

FINANCIAL ANALYSIS OF ASSOCIATED BRITISH FOODS PLC (ABF) USING RATIO ANALYSIS FOR 2 YEARS (FROM OCTOBER 1, 2016 TILL SEPTEMBER 30, 2018)

ASSIGNMENT 1

18th JANUARY, 2019

Associated British Foods plc

Module:	Financial Management (SMBA7100D)
From:	Saeed Ahmed (Student ID: 1705946)
To:	Dr. Richard Dunstan
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1. OVERVIEW OF THE ORGANIZATION:

Associated British Foods PLC (hereafter known as ABF) is a diversified international food, ingredients and retail group with sales of £15.4bn, 133,000 employees and operations in 50 countries across Europe, southern Africa, the Americas, Asia and Australia (as of FY 2017) ⁽¹⁾. The company was founded by Garfield Weston in 1935 and currently the HO is based in London. The company is listed in the FTSE 100 where the major shareholding (54.5%) and ownership is held by the British Investment Group "Wittington Investments". Their purpose is to provide safe, nutritious, affordable food and clothing that is great value for money ⁽²⁾.

2. BUSINESSES:



3. SUMMARY OF RATIO ANALYSIS

Ratio	Figures		Variance (Positive / Negative)
	2017	2016	
Liquidity Ratio's			
Current Ratio	1.65	1.50	0.15
Quick Ratio or Acid Test	0.98	0.81	0.17
Profitability Ratio's			
Return on Capital Employed	14%	13%	0.73%
% Net Profit	9%	8%	0.47%
% Gross Profit	8.25%	7.72%	0.53%
% Return on Assets	10.43%	9.70%	0.73%
% Return on Net Assets	16.21%	16.15%	0.06%
Efficiency Ratio's			
Capital Employed Productivity	1.70	1.73	-0.03
Working Capital Turnover	7.54	9.07	-1.53
Non-Current Asset Productivity	2.02	1.93	0.08
Net Asset Productivity	1.590	1.592	-0.002
Gearing Ratio's			
Gearing	7%	8%	-1.48%
Investment Ratio's			
Earnings per share	1.53	1.04	0.49
Dividend Cover	29.54	22.34	7.2
Dividend Yield	1.86	1.84	0.03
Interest Cover	27.61	19.45	8.16
Return on Equity	0.14	0.12	0.03
Price / Earnings (P/E)	14.39	0.05	4.91
Turnover Ratio's (part of Efficiency Ratio)			
Stock Turnover or in days	65	72	-6.89
Debtor Collection Period	32	36	-4.52
Creditor Payment Period	78	84	-6.31
Note: The MV of ABF's share is 22 and 20 for the year 2016 and 2017 respectively. *			

**All financial ratios have been calculated on data based from ABF PLC annual report FY 2016 & 2017 ⁽¹⁾.*

4. RATIO ANALYSIS:

Financial ratios provide a quick and relatively simple means of assessing the financial health of a business where comparison is done for two related figures appearing in the same set of financial statements to help the company to understand what the financial statements really mean. Different factors can be used to provide benchmark ratios such as (i) past periods of the company, (ii) performance of similar business, and (iii) planned performance of the company. ⁽³⁾

Financial ratios can be grouped into 5 main categories (as shown below) where each ratio relates to a particular aspect of financial performance or position ⁽³⁾:

1. **Profitability ratios** provide an insight to the degree of success in creating wealth for the company owners. These ratios compare the profit made with key figures in the financial statements or to some business resource.
2. **Efficiency ratios** measure the efficiency with which particular resources have been used within the business.
3. **Liquidity ratios** are one of the vital ratios which are related to the survival of a business and explain whether sufficient liquid resources are available to meet maturing obligations in the near future.
4. **Financial gearing ratios** outlines relationship between the contribution to financing the business made by (i) the owners of the business and (ii) the amount contributed by others, in the form of loans. Such ratios tend to highlight the extent to which the business uses borrowings and hence, the level of gearing has an important effect on the degree of risk associated with a business.
5. **Investment ratios** are concerned with assessing the returns and performance of shares in a business from the perspective of shareholders who are not involved with the management of the business. ⁽³⁾

Taking the above five financial ratios categories into consideration, ratio analysis has been performed for ABF for the FY 2016 and 2017 as follows:

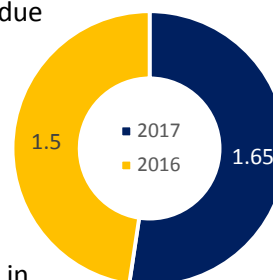
LIQUIDITY RATIOS

CURRENT RATIO:

Current ratio of ABF has increased from 1.5 in FY 2016 to 1.65 in FY 2017 due to increase in total current assets by 17% in FY 2017. Although current liabilities have also increased by 7% in FY 2017, however increase in current assets is comparatively more than increase in current liabilities.

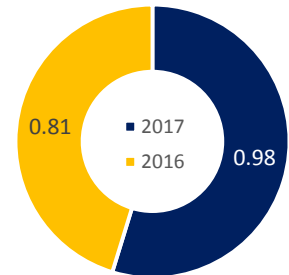
For current assets, increase is mainly due to cash & cash equivalents and income tax asset by 179% and 211%, respectively. Rise in 'cash & cash equivalents' is due to disposal of subsidiaries, joint ventures and interest in associates. Further, as evident from Stock Turnover ratio, inventory days has fallen in FY 2017 as compared to FY 2016 and hence generates cash more quickly.

Although, income tax asset has also increased by 211% which can be duly supported by the expected future profits in ABF's operation, however we need to look at the root cause of increment.



QUICK RATIO:

As evident from the below chart, quick ratio of ABF has improved from 0.81 in FY 2016 to 0.98 in FY 2017. This rise is mainly attributable to increase in cash & cash equivalent already discussed in current ratio.



PROFITABILITY RATIO

RETURN ON CAPITAL EMPLOYED (ROCE):

ROCE has increased to 13.8% in FY 2017 due to increase in operating profit by 21%. Although capital employed has increased by 15% in FY 2017, however increase in operating profit overweigh increase in capital employed hence resulting in increased ROCE. However, there is need to compare resultant ROCE with industry average and cost of capital for the company.

NET PROFIT (NP) MARGIN:

Net profit margin increases by 1% in FY 2017 due to increase in revenue and share of profit from joint ventures and associates. Though there is decrease in disposal gain on sale of non-current assets, however that decrease is balanced by rise in revenue and share of net profit from JV's and associates. The NP margin ratio needs to be compared with other competitors to assess ABF's financial performance.

GROSS PROFIT (GP) MARGIN:

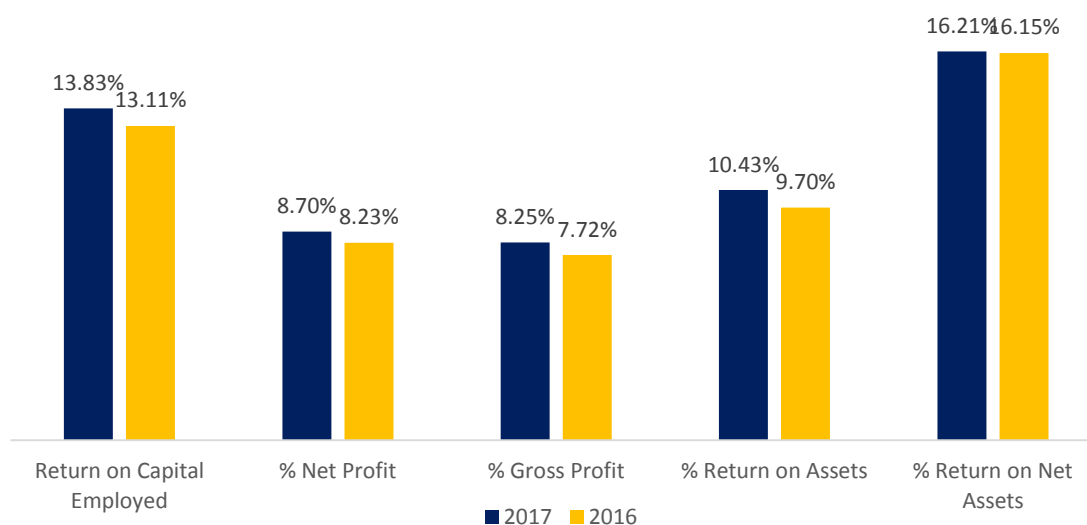
GP ratio of ABF almost demonstrated same trend in FY 2016 and FY 2017. This seems unusual, as revenue has been increased by 15% in FY 2017. Generally, rise in revenue cause increase in GP margin due to the fact that fixed production cost per unit lowers with the increase in sales volume. Further investigation needed in variable cost and fixed cost elements in relation with increase in sales value.

RETURN ON ASSETS:

Return on assets for ABF has improved during FY 2017 from 9.73% to 10.43%. This improvement is mainly due to increase in revenue and share of profit from joint ventures & associates. At the same time, rise in cash & cash equivalents as well as employee benefits assets contributes to rise in total assets, however it is counter balanced by rise in operating profit. Hence increase in nominator i-e by 21% (operating profit/ profit before interest & tax) by an percentage greater than increase in denominator i-e 13% (total assets) in the formula resulted in improvement of return on assets. Consequently, it can be derived that ABF is getting better at converting its investment in assets into profits. However, in order to assess whether ABF is generating enough profits by utilizing its assets in relation to its competitors, there is need to get deeper look into industry ratio.

RETURN ON NET ASSETS:

While calculating RONA, adjustment has been made in non-current assets and working capital as it included transactions for intangible, assets/ liabilities held for sale and others. Evidently, RONA of ABF almost remains consistent during FY 2016 & FY 2017 i.e. 16%. This reveals a key concern as investment in current assets and non-current assets is not generating enough profits when it we take into consideration related liabilities.



EFFICIENCY RATIOS

CAPITAL EMPLOYED PRODUCTIVITY:

Capital employed productivity showed a downward trend in FY 2017 by 0.03% (as compared to FY 2016) due to increase in income tax assets, cash & cash equivalents and employee benefit asset in the denominator of given formula. Although this is not significant keeping in view total size of ABF, however management should focus their attention to manage assets in order to contribute more towards sales revenue.

WORKING CAPITAL TURNOVER:

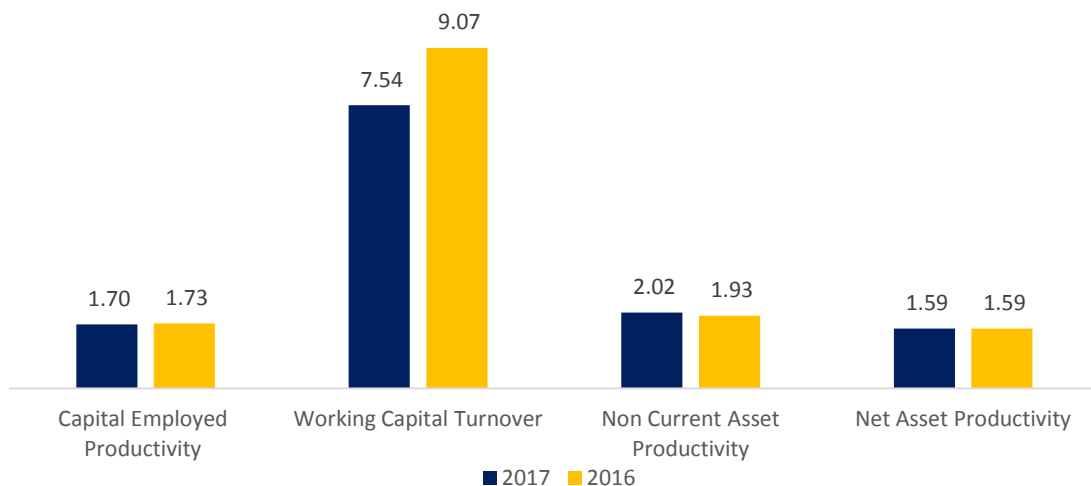
In case of ABF, working capital turnover has showed a downward trend in FY 2017 to 7.54 (as compared to 9.07 in FY 2016) due to increase in working capital in FY 2017 by 38% (as compared to FY 2016)0. Although sales revenue has also surged by 15% in FY 2017, the increase is comparatively low when compared with rise in working capital, thus turnover ratio has decreased. Key concern for ABF is getting inefficient in working capital management and perhaps, it should investigate further into this matter and also compare it with the industry average.

NON-CURRENT ASSET PRODUCTIVITY

Fixed asset productivity has a very trivial increase and resulted in 2.02 for FY 2017. However, this is positive indicator since the non-current assets (denominator) was comparatively lower than revenue (numerator). Although the weakening of the sterling due to Brexit might have boosted the revenue and profits, the company should look into this further.

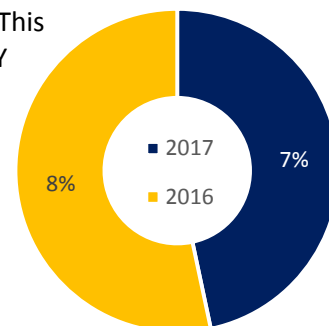
NET ASSET PRODUCTIVITY:

it is evident that net asset productivity remains consistent in FY 2016 & FY 2017 i.e. 1.59 despite the fact that non-current asset productivity surged during FY 2017. This consistency can be attributed to changes in sale revenue and net assets in almost same proportion during FY 2017. Comparison with industry average is required to assess performance of ABF in relation with other companies. Although consistency in this ratio is not bad at all, however if rise of sales revenue has increased due to increased prices, then this area will become a concern for management as sales (volume) should also increase in higher proportion than increase in net assets.



GEARING RATIO

Gearing ratio of ABF has decreased from 8% to 7% in FY 2017. This decrease can be attributed to increase in equity by 16% during FY 2017 while loan remain almost same. This is a positive trend as ABF is not much reliant on debt to carry out its business. Ideally, a gearing ratio of 25% is acceptable for stakeholders.



INVESTMENT RATIOS

EARNING PER SHARE (EPS):

EPS of ABF has improved from 1.04 to 1.53 in FY 2017. This is indicative that ABF has more power earning during FY 2017 and further increase in profit (after interest & tax) by 48% during FY 2017. To assess ABF's performance in relation to other companies, there is need to investigate the industry average.

DIVIDEND COVER:

ABF's dividend cover ratio has surged from 6 to 10 in FY 2017 which shows ABF is retaining a higher portion of its earnings to meet its financing requirements which may result in higher dividend payout in the future.

DIVIDEND YIELD:

Dividend yield has shown a slight improvement in FY 2017 due to rise in dividend paid (per share) by 12% during FY 2017. Viewing the denominator, market price almost remains constant i.e. changes from 20 to 22. This also corroborates the asset productivity ratios seen above that ABF is not utilizing and managing its net assets in a productive manner.

INTEREST COVER:

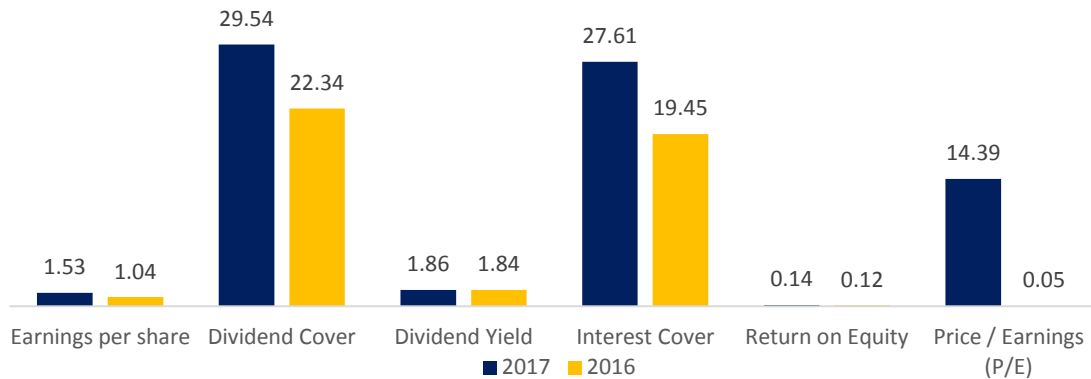
Interest cover ratio of ABF has increased during FY 2017 to 27 as compared to 19 in FY 2016. This improvement can be attributed to fact that increases in profit before interest & tax has increased significantly during FY 2017 i.e. by 50%. Resultantly interest accrued on long term debts became more secure for payment by ABF.

RETURN ON EQUITY (ROE):

Although a trivial increased trend has shown by ABF's ROE during FY 2017 (0.14) from FY 2016 (0.12), however it is still far below the acceptable range of 1. This is because of the fact that increase in net income is not significant in relation to increase in equity. This is in fact a grey area for management's consideration. A detail root cause analysis is required to identify ultimate reasons and hindrances for trivial variance in ROE.

PRICE / EARNINGS (P/E):

P/E has downgraded from 0.91 to 0.82 in FY 2016. Financially, this decrease is due to significant rise in EPS during FY 2017. In contrast, market price per share has not changed significantly i.e. from 20 to 22. A low P/E may be indicative of low confidence of investors in company's stock. Alternatively, company's stock may be undervalued. Investors can often buy undervalued stock at discount and make profit when price industry is required to assess the ultimate reasons of low P/E rate of that stock climbs. A detailed root cause analysis and comparison with other companies within same



TURNOVER RATIOS (PART OF EFFICIENCY RATIOS)

STOCK TURNOVER (IN DAYS):

ABF's stock turnover days has declined from 72 days in FY 2016 to 65 days in FY 2017. The decline in stock turnover days is supported by increase in inventory and cost of sales by 3% and 14% respectively. Here it is evident that inventory stock has not gone up in proportion to cost of sales which has resulted in decrease in stock turnover days.

This is a positive trend as it indicates that less funds are being distracted to form the inventories. Moreover, low stock turnover days bring down holding cost of inventory. However a further comparison with industry average is required to assess ABF's performance in relation with its competitors.

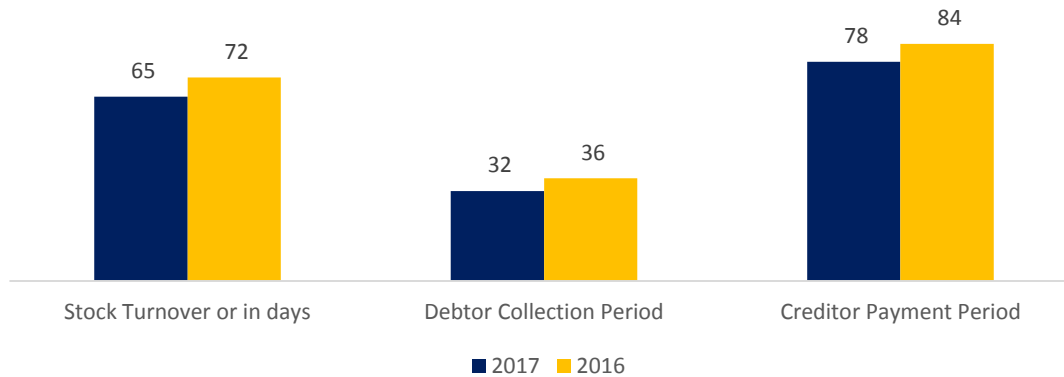
DEBTOR COLLECTION PERIOD (RECEIVABLES):

In case of ABF, debtor collection days have decreased from 36 to 32 days in FY 2017 (which is a positive indicator for cash collections). The decrease is due to the fact that although trade receivables remained almost same, however, sale has surged by 15% during FY 2017. Hence due to increase in denominator, the resulting ratio has decreased. Ultimately there is need to compare ABF's debtor collection days with industry average.

CREDITOR PAYMENT PERIOD (PAYABLES):

In case of ABF, creditor payment days decreased from 84 to 78 days in FY 2017. This decrease is due to increase in cost of sales by 14%. Although trade payables also increased by 6% however rise in cost of sales is more than rise in trade payables resulting in downgrade of creditor payment days. It is clear that ABF's Creditor payment period is more than its debtor's turnover days meaning thereby that ABF is able to collect more quickly from its customers and retain the fund for its operation as there is no burden to pay quickly to creditors.

However, there is need to compare the creditor payment days with other companies in same industry as days beyond industry average can adversely affect relationship with customers, hence company's reputation.



5. CONCLUSION

With increased operating profits, ROCE, EPS and Dividend per share figure in FY 2017 as compared with its last 5 years, ABF made significant progress and delivered an excellent set of group results. With over 60% sales outside of UK, the sterling weakness on the translation led to increased revenues and hence, operating profit. However, the main challenge remains as post Brexit, ABD will need to expand its operational and geographical reach to new horizons combined with a business model that supports its food and retails businesses. Much focus is required to improve their supply chain operations where their food production can reach to end customers while they should develop a strategy to benefit from changing legislations and trade agreements. Political lobbying is the need of the hour to minimize the company risk exposure, especially in terms of taxes and custom tariffs which will affect ABF's main bottom line. Although steady organic growth is required, however the risk is relatively more when compared with inorganic growth (such as mergers and acquisitions).

6. LIMITATIONS OF RATIO ANALYSIS

Although ratio analysis can provide a quick and brief overview of the financial performance of a company, it can be considered only as reliable as the financial statements from which they are derived. Limitations of ratio analysis include many but not limited to: (i) several formulas leading to confusion (ii) ratios cannot account for time value of money (iii) do not interpret non-monetary terms, (iv) do not look at short term fluctuations (v) cannot predict future trends (vi) based on historic accounting ⁽⁶⁾ ratios have restricted vision (viii) difficulty to find suitable benchmark (ix) creative accounting can be used to distort financial health; and (x) effect of inflation ⁽²⁾

It is recommended that the management uses ratio analysis to identify areas where further due diligence and analysis could be conducted while utilize other analyses such as strategic (SWOT, PESTLE, Porter's Five forces), financial (Cash flow, sensitivity) and non-financial (Key performance indicators).

7. Recommendations:

#	Focus Area	Recommendation	Risk Rating
1	Cash Management	- Strong cash position in 2017 (£1,550 million) which is an increase on 179% from 2016 (£555 million). Some of the funds can be invested to earn additional interest income. - Although cash position is strong, overdraft facilities (bearing interest) was used and could have been avoided by using cash. - Increase in finance income accrued on 'cash & cash equivalents (C&CE)' does not correspond to increase C&CE. Further root cause analysis is required	High
2	Inventory Management	- Thorough analysis of Supply chain process to reduce warehousing and inventory holding cost. - EOQ and Just in Time (JIT) approach can be utilized to reduce inventory cost and smoothen manufacturing process	High
3	Strategic initiatives	- Corporate strategy needs to be revisited to ensure future business condition and financial risks are properly assessed (especially post brexit). - Divest businesses which are not generating enough ROI and/or forecasted to be loss making in the future.	High
4	Political consultations	Assess financial and other risks due to changes in legislation, trade agreements and working practices and take advantage of the changing commercial landscape.	High
5	Diversification of business	Should look into M&A activities to diversify business and enlargement of brand.	High
6	Currency Hedging	Due to depreciation of UK currency from Brexit affect, company can reduce currency risks by considering currency swaps/ forward contracts	High
7	Economic uncertainty	Capital expenditures have to be carefully analyzed (considering NPV, ROI, ROCE) while cost controlling measures have to be deployed (hiring freezes, reduced remuneration to senior management, etc.) due to uncertain economic factors post Brexit	High
8	Workplace safety	Improve workplace safety as 595 safety incidents (2017) were noted as compared with 372 (2014), 465 (2015), 454 (2016). 6 fines totaling £74,000 (2017) due to breach of safety regulations	High
9	Operational expenses	Analyze fixed overhead costs FY 2017 as consistent increment was noted in fixed cost p.u. with revenue increase, whereas ideally fixed cost per unit decreases with increased revenue due to its optimal resource usage. Further investigation is required.	Medium
10	Operational efficiency	Make action plan to reduce operational expenses by improving operational processes, reducing wastages and minimizing production time by deploying Lean Six Sigma projects.	Medium
11	Receivable Management	- AR collection period needs to be improved by reviewing customer credit terms and policies, receivables aging, invoicing timeliness. - Discounts on early settlements, robust negotiations and penalties on late payments will improve cash collection. Early recognition of doubtful debts will improve cash liquidity and legal action.	Medium
12	Payables Management	Better dispute resolution with suppliers, timely recording of invoices, paperless environment, integration with vendors through automation and centralized accounts payable.	Medium
13	Benchmarking	Benchmarking with industry to reduce costs and improve profits to gain competitive edge	Medium
14	Internal Audit structure	- Internal audit should focus on all aspects, other than financial aspects such as operational, compliance and strategic to improve company performance. - Internal Audit (IA) Department should not report to Director of Financial Control as seen in ABF Annual report 2017 but report to an Independent Chief Audit Executive as endorsed by global structure. This would help strengthen IA position and avoid any conflict of interest.	Medium
15	Employee hiring	Rather than hiring permanent employees, company can hire contracted employees to avoid employer paid benefits, reducing manpower costs	Medium

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9. Appendix:

Appendix A - Ratio's description and formula

Ratio	Description	Formula
LIQUIDITY RATIO'S		
Current Ratio	The current ratio is the standard test of liquidity where current assets ensure the company can meet its commitments to pay its current liabilities. Superficially, a ratio in excess of 1 implies that the organization has enough cash and near-cash assets to satisfy its immediate liabilities. ⁽⁴⁾	$\frac{\text{Current assets}}{\text{Current liabilities}}$
Quick Ratio	Since most of the inventories are not very liquid assets and the cash cycle is long, companies are unable to quickly convert all their current assets into cash. Therefore, an additional liquidity ratio known as the quick ratio is quite useful. ⁽⁴⁾	$\frac{\text{Current assets} - \text{stock}}{\text{Current liabilities}}$
PROFITABILITY RATIO'S		
Return On Capital Employed (ROCE)	ROCE compares profits with the capital employed to earn the profits ⁽³⁾ whereas it also used as a measure for appraising a capital project and estimate the accounting rate of return that the project should yield. If the calculated rate exceeds a targeted rate of return, then project can be undertaken. ⁽⁴⁾	$\frac{\text{Profit before Interest \& Tax}}{\text{Capital employed}}$
Net Profit (NP) Margin	The net profit margin tells how well a business is able to convert sales into profit and hence, it is an important measure of relative profitability. ⁽⁸⁾	$\frac{\text{Profit before Interest \& Tax}}{\text{Sales}}$
Gross Profit (GP) Margin	Gross profit margin is a financial metric used to assess a company's financial health and business model by revealing the proportion of money left over from revenues after deducting the cost of sales. ⁽⁹⁾	$\frac{\text{Gross Profit}}{\text{Sales}}$
Return On Assets	Return on assets (ROA) is an indicator of how profitable a company is relative to its total assets. ROA gives a manager, investor, or analyst an idea as to how efficient a company's management is at using its assets to generate earnings. ⁽¹¹⁾	$\frac{\text{Profit before Interest \& Tax}}{\text{Total assets}}$
Return On Net Assets	RONA can be used to assess how well a company is performing compared to others in its industry. It reveals if a company and its management are deploying assets in economically valuable ways or if the company is performing poorly versus its peers ⁽¹²⁾	$\frac{\text{Profit before Interest \& Tax}}{\text{Non-Current Assets} + \text{Net working capital}}$
EFFICIENCY RATIO'S		
Capital Employed Productivity	Capital employed productivity is used to measure the amount of sales revenue generated by each pound's worth of capital employed in the business	$\frac{\text{Sales}}{\text{Capital employed}}$
Working Capital Turnover	This measures how efficiently a company is using its working capital to support a given level of sales and further shows the relationship	$\frac{\text{Sales}}{\text{Current assets} - \text{Current}}$

	between the funds used to finance a company's operations and the revenues a company generates as a result.	liabilities
Non-Current Asset Productivity	Non-current asset productivity (also known as fixed-asset turnover) ratio is used to measure operational performance of an entity and further measures a company's ability to generate net sales from fixed-asset investments. ⁽¹⁰⁾	$\frac{\text{Sales}}{\text{Non-current assets}}$
Net Asset Productivity	Net asset productivity ratio is used to measure operational performance of an entity and further measures a company's ability to generate sales/ revenue from its investments in assets after accounting for related liabilities.	$\frac{\text{Sales}}{\text{Total assets} - \text{Current Liabilities}}$
Stock Turnover (In Days)	This ratio measures how fast stock moves through a business. Since, holding on to stock may prove to be risky due to various cost impacts (for e.g. interest costs, holding costs, obsolescence, etc.) whereas, if stock levels are kept too low then there might be a risk of material stock out leading which will adversely affect production and hence, customer orders. Therefore, an optimal level of stock needs to be held which requires careful calculation. ⁽³⁾	$\frac{\text{Stock}}{\text{Cost of sale}} * 365$
Debtor Collection Period (Receivables) days	This ratio gives a rough measure of the average length of time it takes for a company's accounts receivable to pay what they owe. ⁽⁴⁾	$\frac{\text{Receivables}}{\text{Sale}} * 365$
Creditor Payment Period (Payables) days	The Creditor payment (or Payables) payment period often helps to assess a company's liquidity where an increase in accounts payable days is often a sign of lack of long-term financing or poor management of current assets, resulting in the use of extended credit from suppliers, increased bank overdraft, and so on. ⁽⁴⁾	$\frac{\text{Payables}}{\text{Cost of raw material}} * 365$
Gearing Ratio	Gearing measures the proportion of assets invested in a business that are financed by borrowing where higher gearing means higher dependence on borrowings/long term financing, whereas lower gearing means higher dependence on equity financing. Therefore, high level of gearing increases the level of financial risk due to increased volatility of profits and vice versa ^(D) .	
INVESTMENT RATIO'S		
Earning. Per Share (EPS)	EPS is widely used as a measure of a company's performance where results are compared over a period of several years and the company is looking to sustain its earnings in order to pay dividends and further reinvest in the business so as to achieve future growth ⁽⁴⁾	$\frac{\text{Profit after interest \& tax}}{\text{No. of ordinary shares issued}}$
Dividend Cover	Dividend cover is the number of times the actual dividend could be paid out of current profits ⁽⁴⁾ and the higher the number, the better the cover. ⁽³⁾	$\frac{\text{Profit after interest \& tax}}{\text{Dividend paid}}$
Dividend Yield	The dividend yield shows the dividend return against the market value of an investment ⁽³⁾ and the return a shareholder is expecting on the shares of a company, hence, the dividend yield is an important aspect of a share's performance. ⁽⁴⁾	$\frac{\text{Dividend per share}}{\text{Market value per share}}$

Interest Cover	Interest cover ratio is a measure of financial risk designed to show the risks in terms of profit rather than in terms of capital values ⁽⁴⁾ and shows how well a firm can cover or meet the interest payments associated with debt. ⁽⁷⁾	Profit before <u>interest & Tax</u> Interest of long-term borrowing
Return on Equity	ROE ratio shows the rate of return achieved by the equity investors in a company and expressed as the ratio of 'Net income' is to 'avg. Equity'. ⁽³⁾ This ratio also shows the overall performance of the firm. ⁽⁴⁾	<u>Net Income</u> Shareholders' Equity
Price / Earnings	P/E ratio compares the actual earnings per share with the market price of one ordinary share, making it important for investors and the market. ⁽³⁾ Hence, this ratio is a useful yardstick for assessing the relative worth of a share. ⁽⁴⁾	Current share <u>market price</u> Earnings per share

Appendix B – Financial statement variance analysis (yearly)

CONSOLIDATED INCOME STATEMENT (for the 52 weeks ended 16 September 2017)	2017	2016	Changes	YOY
	£million	£million		
Revenue	15,357	13,399	1,958	15%
Operating costs	(14,090)	(12,364)	(1,726)	14%
Gross Profit	1,267	1,035		
Share of profit after tax from joint ventures and associates	63	57	6	11%
Profits less losses on disposal of non-current assets	6	11	(5)	-45%
Operating profit	1,336	1,103	233	21%
Adjustment	27	15		
Adjusted operating profit	1,363	1,118	245	22%
Profits less losses on disposal of non-current assets	6	11	(5)	-45%
Amortisation of non-operating intangibles	(28)	(21)	(7)	33%
Transaction costs	(5)	(5)	-	0%
Profits less losses on sale and closure of businesses	293	(14)	307	-2193%
Profit before interest	1,629	1,089	540	50%
Finance income	9	6	3	50%
Finance charges	(59)	(56)	(3)	5%
Other financial (expense)/income	(3)	3	(6)	-200%
Profit before taxation	1,576	1,042	534	51%
Adjustment	(266)	29		
Adjusted profit before taxation	1,310	1,071	239	22%
Profits less losses on disposal of non-current assets	6	11	(5)	-45%
Amortisation of non-operating intangibles	(28)	(21)	(7)	33%
Transaction costs	(5)	(5)	-	0%
Profits less losses on sale and closure of businesses	293	(14)	307	-2193%
Taxation	(365)	(221)	(144)	65%
Total Comprehensive Income for the year	1,211	821	390	48%

CONSOLIDATED BALANCE SHEET (at 16 September 2017)	2017	2016	Changes	YOY
	£million	£million		
Assets				
Intangible assets	1,414	1,348	66	5%
Property, plant and equipment	5,470	5,145	325	6%
Investments in joint ventures	210	221	(11)	-5%
Investments in associates	44	39	5	13%
Employee benefits assets	285	6	279	4650%
Deferred tax assets	143	139	4	3%
Other receivables	54	41	13	32%
Non-Current Assets	7,620	6,939	681	10%
Assets classified as held for sale	-	312	(312)	-100%
Inventories	2,101	2,033	68	3%
Biological assets	90	86	4	5%
Trade and other receivables	1,342	1,337	5	0%
Derivative assets	79	105	(26)	-25%
Income tax	28	9	19	211%
Cash and cash equivalents	1,550	555	995	179%
Current Assets	5,190	4,437	753	17%
Total Assets	12,810	11,376	1,434	13%
Liabilities				
Liabilities classified as held for sale	-	(75)	75	-100%
Loans and overdrafts	(265)	(245)	(20)	8%
Trade and other payables	(2,500)	(2,366)	(134)	6%
Derivative liabilities	(113)	(73)	(40)	55%
Income tax	(170)	(147)	(23)	16%
Provisions	(105)	(54)	(51)	94%
Current Liabilities	(3,153)	(2,960)	(193)	7%
Loans	(612)	(640)	28	-4%
Other payables	(216)	(185)	(31)	17%
Provisions	(27)	(34)	7	-21%
Deferred tax liabilities	(231)	(139)	(92)	66%
Employee benefits liabilities	(159)	(296)	137	-46%
Non-Current Liabilities	(1,245)	(1,294)	49	-4%
Total liabilities	(4,398)	(4,254)	(144)	3%
Equity				
Issued capital (Par value price 1\$)	45	45	-	0%
Other reserves	175	175	-	0%
Translation reserve	456	433	23	5%
Hedging reserve	(31)	(22)	(9)	41%
Retained earnings	7,694	6,423	1,271	20%
Total equity attributable to equity shareholders	8,339	7,054	1,285	18%
Non-controlling interests	73	68	5	7%
Total equity	8,412	7,122	1,290	18%

Consolidated Cash Flow Statement (For the 52 weeks ended 16 Sept 2017)	2017	2016	Changes	YOY
	£million	£million		
Cash Flow from Operating Activities				
Profit before taxation	1,576	1,042	534	51%
Profits less losses on disposal of non-current assets	(6)	(11)	5	-45%
Profits less losses on sale and closure of businesses	(293)	14	-307	-2193%
Transaction costs	3	5	-2	-40%
Finance income	(9)	(6)	-3	50%
Finance expense	59	56	3	5%
Other financial expense/(income)	3	(3)	6	-200%
Operating Profit	1333	1097	236	22%
Share of profit after tax from joint ventures and associates	(63)	(57)	-6	11%
Amortisation	57	47	10	21%
Depreciation	514	439	75	17%
Net change in the fair value of current biological assets	0	(12)	12	-100%
Share-based payment expense	21	7	14	200%
Pension costs less contributions	12	7	5	71%
Increase in inventories	(40)	(62)	22	-35%
Increase in receivables	(2)	(55)	53	-96%
Increase in payables	168	107	61	57%
Purchases less sales of current biological assets	(2)	(2)	0	0%
(Decrease)/increase in provisions	(1)	5	-6	-120%
Cash generated from operations	1,997	1,521	476	31%
Income taxes paid	(356)	(211)	-145	69%
Net Cash from Operating Activities	1,641	1,310	331	25%
Cash Flows from Investing Activities				
Dividends received from joint ventures and associates	69	25	44	176%
Purchase of property, plant and equipment	(823)	(774)	-49	6%
Purchase of intangibles	(43)	(30)	-13	43%
Sale of property, plant and equipment	49	27	22	81%
Purchase of subsidiaries, joint ventures and associates	(79)	(10)	-69	690%
Sale of subsidiaries, joint ventures and associates	452	1	452	45100%
Interest received	8	6	2	33%
Net Cash (outflow) / Inflow from Investing Activities	(367)	(756)	389	-51%
Cash Flows from Financing Activities				
Dividends paid to non-controlling interests	(4)	(10)	6	-60%
Dividends paid to equity shareholders	(299)	(279)	-20	7%
Interest paid	(59)	(62)	3	-5%
Increase/(decrease) in short-term loans	49	(109)	158	-145%
(Decrease)/increase in long-term loans	(9)	12	-21	-175%
Purchase of shares in subsidiary undertaking from non-controlling interests	(3)	(252)	249	-99%
Movements from changes in own shares held	(10)	(19)	9	-47%
Net Cash (outflow) / Inflow from Financing Activities	(335)	(719)	384	-53%

Net increase/(decrease) in cash and cash equivalents	939	(165)	1,104	-669%
Cash and cash equivalents at the beginning of the period	462	585	-123	-21%
Effect of movements in foreign exchange	(15)	42	-57	-136%
Cash and cash equivalents at the end of the period	1,386	462	924	200%

AN ANALYSIS OF PROPOSED INVESTMENT OPPORTUNITIES USING INVESTMENT APPRAISAL TECHNIQUES

PART 2 OF ASSIGNMENT 1
18TH JANUARY, 2019

Module:

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From:

Saeed Ahmed (Student ID: 1705946)

To:

Richard Dunstan

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1. BACKGROUND

JAMES PLC is a UK based company established in 1985 by James Doe to produce and distribute garden decors at an economical price. Since then, the organization has grown from 3 employees into 400+ employees in 2018, with its branches spread across the main cities of UK.

Due to the recent global economic slowdown and the negative impact of Brexit decision on the UK economy⁽¹⁾, the Board of Directors (BoD) for JAMES PLC had decided recently to adopt an investment strategy to achieve steady growth. Resultantly, the BoD had done an initial screening on three different investment opportunities that is in alignment with the corporate strategy. Accordingly, they have asked the Finance Function at JAMES PLC to prepare a report on the evaluation of these opportunities and provide an optimal investment policy with the provided cash flow estimates (for a period of four years) for the given investment proposals (refer to **Appendix A**).

2. METHODOLOGY ADAPTED FOR INVESTMENT APPRAISAL

As per research, four investment appraisal methods are used by businesses throughout the world for the evaluation of investment opportunities which consists of two (2) utilizing non-discounting methods i.e. Accounting Rate of Return (ARR) and Payback Period (PP); whereas the remaining two (2) utilizes discounting methods i.e. Net Present Value (NPV) and Internal Rate of Return (IRR)⁽²⁾. Discounting can be seen as translating a future cash flow or value into its equivalent value in a prior period⁽³⁾. However, a table has been constructed for management's convenience which shows the advantages and disadvantages of the four investment appraisal methods (refer to **Appendix B**).

Non-Discounting Methods for Investment appraisal:

1. **Accounting rate of return (ARR)** takes the average accounting operating profit that the investment will generate and expresses it as a percentage of the average investment made over the life of the project⁽²⁾.
2. **Payback Period (PP)** is the length of time it takes for an initial investment to be repaid out of the net cash inflows from a project. Since it takes time into account, the PP method seems to be a better approach than ARR as it overcomes its timing problem⁽²⁾.

In spite of limitations faced by non-discounting methods, they still remain popular due to the following main reasons:

- i. Simple to calculate and understand, especially when management resources are limited
- ii. Can be used as an initial screening tool for evaluating investment opportunities.
- iii. ARR involves familiar concept of a percentage return and easy to compare two investment options.
- iv. PP can be used when there is a capital rationing situation⁽⁴⁾

Please refer to **Appendix B** to see the other reasons or benefits of using non-discounting methods.

Discount Methods for Investment appraisal:

3. **Net Present Value** can be stated as the difference between the present value of the cash inflows and the present value of the cash outflows⁽⁴⁾
4. **Internal Rate of Return** is the discount rate of a particular investment applied to its future cash flows which will produce an NPV of precisely zero. In essence, it represents the yield from an investment opportunity⁽²⁾.

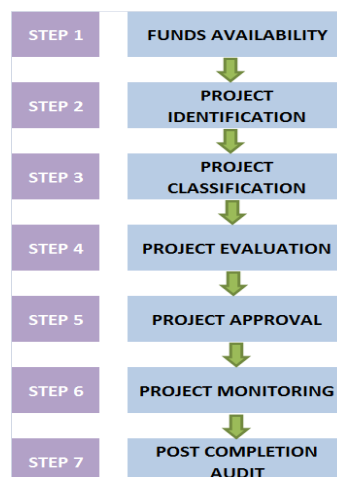
After review of the above four methods (shown in **Appendix B**), JAMES PLC needs a method of investment appraisal which (i) considers all costs and benefits of each investment opportunity; and (ii) makes a logical allowance for the timing of those costs and benefits⁽²⁾

Since **both ARR and PP do not** (i) take time value of money into consideration, (ii) have a direct effect on wealth creation for business owners; and (iii) include all relevant cash flows (inflows/outflows), whereas NPV covers all these areas. Similarly, NPV also seems a better choice as **compared with IRR** because IRR does not correctly address the question of wealth generation and ignores the scale of investment, hence, risk of wrong decision being made⁽²⁾.

The main objective for JAMES PLC for pursuing such investment opportunities is not only to increase the company wealth but also consider multiple factors such as (i) loss of interest (if investment is made elsewhere), (ii) purchasing power of the money invested (due to inflation); and (iii) returns expected may not materialize (due to unforeseen risks). NPV covers all these three factors (interest lost, risk and inflation) in its calculations and hence, is the best choice for evaluating the three proposed opportunities (as shown in Appendix A)

3. STEPS IN INVESTMENT APPRAISAL PROCESS

Since the purpose of these investments is to increase JAMES PLC's wealth⁽³⁾, we have outlined seven main steps for investment appraisal after evaluating multiple authentic sources⁽²⁾⁽³⁾ as it would help the management of JAMES PLC to ask the important questions prior to making an investment. Please see below in figure 1.1.



1.1 - Steps in Investment decision making for JAMES PLC⁽²⁾⁽³⁾

Step 1: Funds availability

Before a project is undertaken, JAMES PLC needs to determine the availability of investment funds and secure funding from either external sources or internal sources. To effectively utilize the available funds in an effective way to maximize return, JAMES PLC should utilize 'capital rationing' whereby competing investment opportunities are prioritized based on its returns. ⁽²⁾

Step 2: Identification

Based on the availability of funds, JAMES PLC should be proactive in identifying investment opportunities that are aligned and fit with its strategic plan. It is suggested that strategic management tools (such as SWOT and PESTLE analysis) should be deployed to evaluate the (i) strengths (ii) weaknesses (iii) opportunities and (iv) threats, for different investment opportunities. Moreover, JAMES PLC could also involve employee feedbacks and encourage employees to participate and submit possible business proposals for the identification or further refine existing investment opportunities ⁽²⁾

Step 3: Classification

After the identification step, an initial screening should be done ⁽²⁾⁽³⁾. Since information collection is a time consuming and costly process, JAMES PLC should adopt a two-stage process as follows:

- 1- 1st stage: Collect sufficient information to perform preliminary screening to assess whether they would be profitable or not ⁽²⁾ such as by using PP method ⁽³⁾.
- 2- 2nd stage: Those investments which have passed the 1st stage, a detailed screening in the form of classifications should be performed. As per a research study, investment opportunities can be classified into three broad categories ⁽³⁾:
 - i. **Economic life:** Short term or long term investment
 - ii. **Risk:** Risk exposure due to nature of investment projects such as (a) replacement (b) expansion (c) new products and markets; and (d) mandated.
 - iii. **Dependency:** Either project are (i) independent of each other (ii) mutually exclusive, (iii) contingent or (iv) complimentary project ⁽³⁾.

Step 4: Evaluation

Next step would be to identify, record and evaluate important factors related to proposed project(s), such as below ⁽²⁾:

- Nature and purpose of the project?
- Alignment with the overall objectives of JAMES PLC?
- Funds availability with JAMES PLC and how much more required for the project?
- List of resources required (for successful completion of the project)?
- Project schedule / duration and its key stages?
- Expected pattern of cash flows?
- Types of risk exposures (internal/external) which JAMES PLC may be exposed to and how they can be minimized
- NPV/IRR of the project? ⁽²⁾

Step 5: Approval

After evaluation, senior management involved in the project selection should ensure that reasonable estimates and sufficient data is available based on which the project approval will be taken (especially whether it will be profitable or not), otherwise decision may be postponed if further information or revisions are required.

Moreover, other factors such as 'different levels of approval required', 'implications on market share', 'staff morale and business operations if the project is not pursued' needs to be considered as well⁽²⁾. However, the most important factor would be that project approval should be in alignment with the JAMES PLC strategic plan⁽³⁾.

Step 6: Monitoring and controlling

After a project is approved and execution work has started, JAMES PLC should deploy a project tracking mechanism for periodic review of related expenditures along with the revenues associated to it, as such activity can help identify cost over-runs, unusual deviations and uncover the need for further market research⁽²⁾⁽³⁾. Information gathering should be a continual process and cost controlling / project management techniques should be employed for monitoring performance and in extreme cases. In case project circumstances appear to have changed dramatically for the worse, management may even consider abandoning the project to avoid further negative cash outflow.⁽³⁾

Step 7: Post Completion Audit

Even after the project is completed, a post-completion audit should be performed by an independent business function (such as Internal Audit) rather than the management proposing the project, to avoid independence and objectivity conflicts. Post completion, this audit involves a comparison of actual cash flow from operations with the estimate cash flow used to initially justify the project⁽³⁾. However, inclusion of the 'post completion audit' step in the investment appraisal process provides senior management with the below benefits:

- i. Project proposers will be more careful before endorsing a project as they know that a post completion audit will be undertaken to compare the results.
- ii. It helps senior management to identify proposers who are consistently optimistic or pessimistic in cash flow estimates to further evaluate the bias for any proposal submitted by them.⁽²⁾⁽³⁾

4. EVALUATION OF THE THREE OPTIONS USING NPV

OPTION A – EXPANSION OF RETAIL OUTLETS TO INCLUDE ALL PRODUCTS

As per below calculation, investment option A is financially acceptable under the NPV decision rule because it has a substantial positive NPV.

Net Present Value					
Option A	Year 0 £	Year 1 £	Year 2 £	Year 3 £	Year 4 £
Outflows:					
Initial Investment	(750,000)				
Inflows:					
* 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	0.9259	0.8573	0.7938	0.7350
Present Value (PV)	(750,000)	331,019	375,086	347,302	321,576

**** Net Present Value = £ 624,981

Calculations:

* Taxation = Inflow (Profit) x tax rate @ 20%

** Capital Allowance = (Capital allowance of 25% x Initial Investment) x tax rate @ 20%. The value should be positive since it is a cash saving which reduces tax payment and treated as an inflow.

*** Discounted Factor = Net inflow x discounting rate @ 8%

**** Net present Value = "PV year 0" + "PV year 1" + "PV year 2" + "PV year 3" + "PV year 4"

OPTION B – DEVELOP INTO INTERNET SALES

As per below calculation, investment option B is financially acceptable under the NPV decision rule because it has a substantial positive NPV.

Net Present Value					
Option B	Year 0 £	Year 1 £	Year 2 £	Year 3 £	Year 4 £
Outflows:					
Initial Investment	(1,200,000)				
Inflows:					
* 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%	1.00	0.9259	0.8573	0.7938	0.7350
Present Value (PV)	(1,200,000)	425,926	462,963	555,683	632,126

**** Net Present Value = £ 876,697

Calculations:

* Taxation = Inflow (Profit) x tax rate @ 20%

** Capital Allowance = (Capital allowance of 25% x Initial Investment) x tax rate @ 20%. The value should be positive since it is a cash saving which reduces tax payment and treated as an inflow.

*** Discounted Factor = Net inflow x discounting rate @ 8%

**** Net present Value = "PV year 0" + "PV year 1" + "PV year 2" + "PV year 3" + "PV year 4"

OPTION C – PRODUCE GREENHOUSES AND CONSERVATORIES

As per below calculation, investment option C is financially acceptable under the NPV decision rule because it has a substantial positive NPV.

Net Present Value					
Option C	Year 0 £	Year 1 £	Year 2 £	Year 3 £	Year 4 £
Outflows:					
Initial Investment	(2,000,000)				
Inflows:					
500,000		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%	1.00	0.9259	0.8573	0.7938	0.7350
Present Value (PV)	(2,000,000)	462,963	771,605	1,031,982	955,539

****** Net Present Value = £ 1,222,089**

Calculations:

* Taxation = Inflow (Profit) x tax rate @ 20%

** Capital Allowance = (Capital allowance of 25% x Initial Investment) x tax rate @ 20%. The value should be positive since it is a cash saving which reduces tax payment and treated as an inflow.

*** Discounted Factor = Net inflow x discounting rate @ 8%

**** Net present Value = "PV year 0" + "PV year 1" + "PV year 2" + "PV year 3" + "PV year 4"

NPV RESULTS:

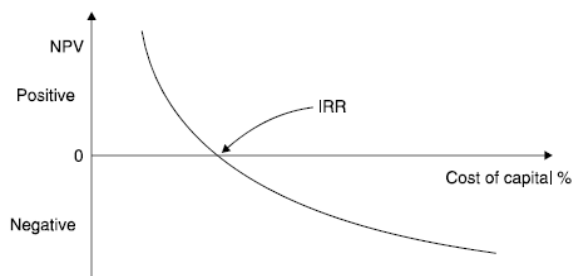
As per a general rule for NPV:

- 1- If NPV is positive, project should be accepted and if negative, it should be rejected.
- 2- If there are two (or more) competing projects that have positive NPV's, then the project with the highest NPV should be selected ⁽²⁾

Therefore, Investment option "C" has the highest NPV out of all three options with a positive amount of £1,222,089 and invest in new greenhouses and conservatories. Moreover, opening new greenhouses will also positively impact JAMES PLC's existing business and increase the sales of existing garden items that can be used in such greenhouses, thus creating a business synergy.

5. IRR CALCULATION FOR OPTION C

Before investing in option C, JAMES PLC should consider all cash flow variables using sensitivity analysis and calculate the discount factor where NPV is zero, known as IRR (see 1.2 below) ⁽²⁾.



1.2 – Graph explaining relationship of cost of capital and NPV with IRR

Since IRR cannot usually be calculated directly, Iteration (trial and error) method has to be adopted in its calculation. However, IRR can be calculated using a computer spreadsheet program as shown below ⁽²⁾:

Internal Rate of Return					
Option C	Year 0 £	Year 1 £	Year 2 £	Year 3 £	Year 4 £
Outflows:					
Initial Investment	(2,000,000)				
Net Inflows:		500,000	900,000	1,300,000	1,300,000
Assume Discount Factor @ 30%	1	0.7692	0.5917	0.4552	0.3501
Present Value (PV)	(2,000,000)	384,615	532,544	591,716	455,166
Net Present Value (NPVb) =	(35,958)				

As we know:

$$IRR = a + [(NPVa) / (NPVa - NPVb) \times (b - a)] \%$$

Here,

a = lower discount rate = 8%

b = higher discount rate at which NPVa is negative = 30%

NPVa = NPV at a = £ 1,222,089

NPVb = NPV at b = (£ 35,958)

Therefore,

$$IRR = 0.08 + \{[1,222,089] / [1,222,089 - (-35,958)]\} \times \{0.3 - 0.08\}$$

IRR = 29.37%

As seen above, to calculate the IRR for option C, we need to assume a discount factor of 30% (which is the most practical percentage at which NPV can be assumed as zero). Upon using the formula shown above, we can see that the IRR discount rate at which the NPV becomes exactly zero is 29.37% (which is also the yield from investment in Option C).

6. OPTIMAL INVESTMENT POLICY FOR JAMES PLC

Assuming funds are limited to £2,500,000 and the projects are divisible, we will utilize capital rationing to construct the optimal investment policy for maximum return and NPV. Since option C requires an outflow of £2,000,000 and gives the highest NPV of all three projects i.e. £1,222,089, we will be allocating £2,000,000 in option C (100% allocation of total investment) from the total available fund of £2,500,000. Moreover, the remaining fund of £500,000 (£2,500,000 – £2,000,000) will be partially allocated on the investment option with the second highest NPV i.e. Option B (40% allocation of total investment).

Since the total NPV for option B is £876,697 on the total investment of £1,200,000, we can deduct the NPV by Pro-rating (40% x total NPV of £876,697) resulting in £350,679 for option B.

Therefore, distributing the total funds of £2,500,000 into two projects i.e. (i) £2,000,000 in Project C (100% allocation) giving NPV of £1,222,089; whereas (ii) the remaining £500,000 in Project B (40% allocation) giving NPV of £350,679. This gives a total NPV of £1,572,767 (£1,222,089 + £350,679).

7. CONCLUSIONS & RECOMMENDATIONS

As indicated in **Appendix C**, two broad sources of financing are available i.e. External and Internal. Within these two categories, they can be further classified into short-term financing and long term financing. With respect to JAMES PLC objective of seeking an optimal investment policy and utilizing capital rationing for the given projects (A, B, C) while furthermore in a recent article, the risk of a disorderly BREXIT combined with the growing sign of weaknesses in world economy has affected several UK business sectors in 2018⁽⁵⁾. It is strongly recommended that 'pecking order' should be utilized where long term financing is usually sought. As per pecking order, firms will prefer retained earnings as primary source of finance, and then will choose debt, and last of all equity.⁽²⁾⁽⁴⁾

Equity financing are normally considered to be the most risky form of investment while loan capital is relatively low risk⁽²⁾. Although a comparison of the three main sources of financing (retained profits, debt financing and equity financing) has been performed in **Appendix D**, retained profits is found to be most important source for new long term finance for UK businesses⁽²⁾. Thus, pecking order would be feasible due to the following benefits:

- i. Easier to use retained earnings than obtaining external finance when economy is slowing down.
- ii. No issue costs if retained earnings are used.
- iii. In debt financing (preferred after retained earnings), investors consider it safer due to guarantees.
- iv. Debt issues (costs lower than equity issues) have a better signaling effect (than equity issues) because market usually interprets debt issues as a confident sign of company market growth.
- v. Studies suggest that pecking order theory is optimal for businesses operating profitably in economy where growth prospects are poor (considering effects of Brexit).⁽⁴⁾

However, JAMES PLC should also consider the limitations of pecking order, such as:

- i. Fails to take certain costs in account (e.g. taxation, financial distress, agency costs, etc)
- ii. Establishing an ideal debt-equity mix will be problematic

Moreover, it is advised that JAMES PLC should consider various factors that might affect investment decision and include them in projected cash flows such as socio-economic, legal, environmental and other factors besides financial consequences⁽⁷⁾. Similarly, besides utilizing NPV and IRR to evaluate investment opportunities, sensitivity analysis (or linear programming) can also be used to maximize the project NPV while other non-financial objectives should be taken into consideration by JAMES PLC.

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9. Appendix

APPENDIX A – Estimated cash flows for 3 investment options

Estimated Cash outflow and inflow proposed by the BoD of JAMES PLC

Investment options	Year 0 * (Investment / Outflow)	Year 1 (Return / Inflow)	Year 2 (Return / Inflow)	Year 3 (Return / Inflow)	Year 4 (Return / Inflow)
	£'000	£'000	£'000	£'000	£'000
(A)	(750,000)	400	500	500	500
(B)	(1,200,000)	500	600	800	1,000
(C)	(2,000,000)	500	1,000	1,500	1,500

Assumptions:

* Year 0 = The starting year in which cost / investment is made

Corporation tax rate = 20%

Capital Allowance = 25% on straight line method

Cost of capital = 8%

APPENDIX B – Advantages / Disadvantages of investment appraisal methods

➤ NON-DISCOUNTING METHOD FOR INVESTMENT APPRAISAL ^{(2) (3)}

Accounting Rate of Return (ARR)

Advantages	Disadvantages
1 Simple to compute	1 Uses accounting profit rather than cash flows
2 Focuses on profitability	2 May give misleading information when evaluating investments of different size
3 Provides a percentage return that can be compared with a target return	3 Ignores the time value of money
	4 Ignores the future cash flows risks

Payback Period

Advantages	Disadvantages
1 Simple to compute	1 No concrete decision criteria to indicate whether an investment increases the company's value
2 Provides some information on the risk of investment	2 Ignores cash flow beyond the payback period
3 Provides a crude measure of liquidity	3 Ignores the time value of money
4 Uses cash flows rather than accounting profits	4 Ignores the future cash flows risks
5 Tends to favor short term investments reducing financial and business risk	5 Not feasible for long term investments

➤ DISCOUNTED CASH FLOW METHOD FOR INVESTMENT APPRAISAL ^{(2) (3)}

Net Present Value (NPV)

Advantages

- 1 Tells whether the investment will increase the company's value
- 2 Consider all the cash flows
- 3 Consider the time value of money
- 4 Consider the future cash flow's risk through the cost of capital

Disadvantages

- 1 Requires an estimate of the cost of capital in order to calculate the Net Present Value
- 2 Expressed in terms of dollars, not as a percentage

Internal Rate of Return (IRR)

Advantages

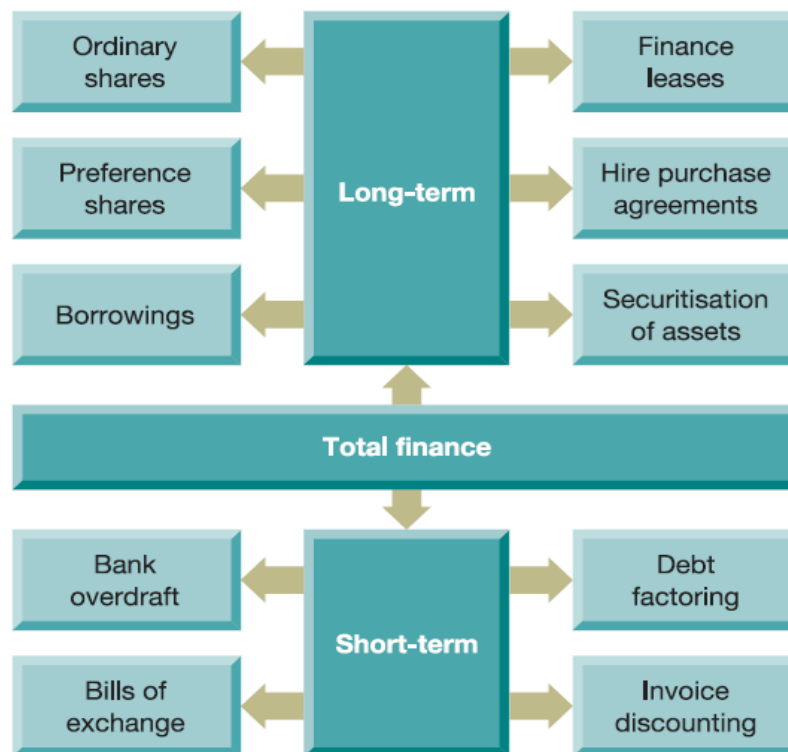
- 1 Tells whether the investment will increase the company's value
- 2 Consider all the cash flows
- 3 Consider the time value of money
- 4 Consider the future cash flow's risk through the cost of capital in the decision rule

Disadvantages

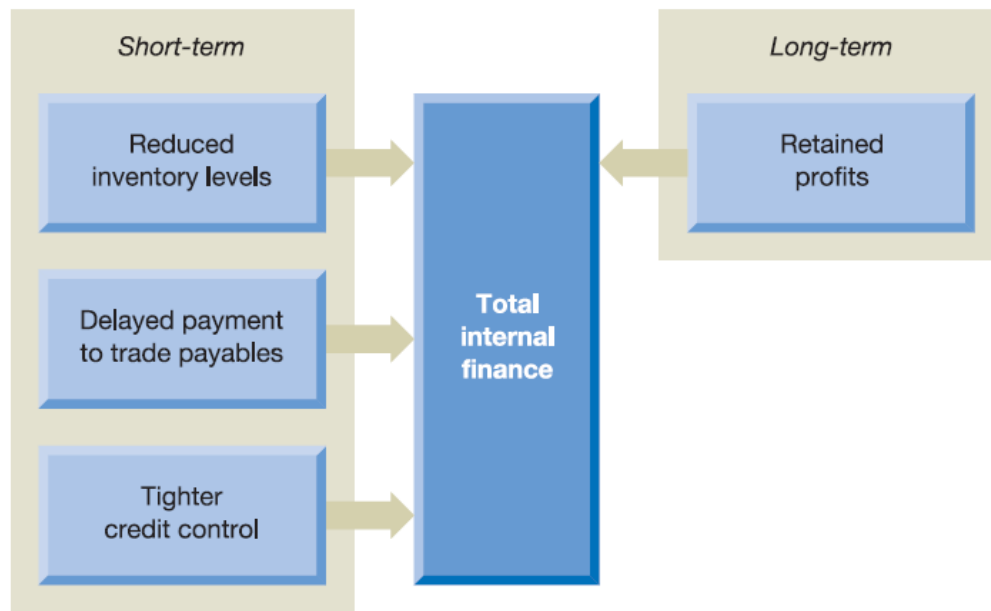
- 1 Requires an estimate of the cost of capital in order to make a decision
- 2 May not give the value maximizing decision when used to compare mutually exclusive projects
- 3 May not give the value maximizing decision when used to choose projects when there is capital rationing
- 4 Cannot be used in situations in which the sign of the cash flows of a project change more than once during the projects life.

APPENDIX C – External and Internal sources of Financing

EXTERNAL SOURCES OF FINANCING ⁽³⁾



INTERNAL SOURCES OF FINANCING ⁽³⁾



APPENDIX D – Main sources of financing (Advantages & Disadvantages)

Retained earning	Debt Financing	Equity Financing
Advantages		
1 Cost of capital of retained earnings is the opportunity cost of shareholders of leaving profits in the business, making a economical option	1 option of short term and long term financing	1 No repayment of financing
2 Management control over re-investment making it very flexible	2 Interest on loan after tax deduction	2 Network of investors which can increase the credibility of your business
3 Do not dilute the ownership of company	3 Debt Financing does not give lender ownership rights	3 Investors do not expect immediate return , hence taking a long term view of business
		4 More cash in hand In case of bankruptcy, no repayment required
Disadvantages		
1 Increased opportunity cost due to excess cash hoarding	1 Too much debt creates cash flow problem	1 Risk of paying more returns than in debt financing
2 Shareholder may ask for additional dividends if business is not earning sufficient ROCE	2 Loan payback in a specified period	2 Sharing of ownership rights
3 High profits and cash accumulation might suggest business to afford debt	3 Limits company ability to raise equity as high gearing is considered by investors	3 Consultation with other investors before taking decision
	4 Cost of repayment is usually high	