

SFMA IA Mock Paper 1*

Sambo Plc (“Sambo”) is an Irish quoted company that produces ready-made sandwiches and salads for the domestic and export market. Sambo’s main customers are the large supermarket multiples and multinational café chains.

Funding

The company has grown rapidly since it listed on the Irish stock exchange fifteen years ago and has had several different rounds of fundraising with multiple types of capital now in its capital structure. Its latest funding round was during 2018 where it borrowed €10 million from ProBank. This capital will be used for the next stage of Sambo’s expansion into the European market in 2019. Sambo’s CEO, Luke Flynn, is anxious to understand the impact this new round of funding has on the company’s overall cost of capital as there will be several new investment opportunities that need to be appraised in 2019 using the company’s normal NPV investment appraisal approach.

It is now 1 January 2019, Sambo’s share price is currently trading at €1.50 ex-div. The most recent dividend paid was €0.20 and has been increasing annually since it started paying a dividend of €0.12 back in 2014. The preference shares have stayed relatively stable and are currently trading at €5.75 cum-div with the full year dividend due to be paid in two weeks’ time. The redeemable bond is currently trading at €89 ex-interest. The relevant tax rate is 12.5%.

Extracts from Sambo Plc’s most recent financial statements are as follows:

Sambo Plc Extracts - Statement of Financial Position as at 31 December 2018	
	€'m
Total Assets	150
Financed by:	
Ordinary Share Capital (€0.80 par)	80
6% €5 Preference Shares	30
8% Redeemable Bonds (2025)	20
10 year 6% term loan – ProBank	10
Net Current Liabilities	10
Total Equity and Liabilities	150

Budgeting and Performance

Luke has been quite frustrated with Sambo’s performance over 2018 and a couple of poor earnings announcements has put him under pressure with shareholders. One of his current key priorities for 2019 is examining the approach to budgeting and standard costing within Sambo. Currently budgets are set in Sambo each November for the next year by adjusting the previous year based on any planned activities or expansions. These are not revised or updated once the initial budgeting process is complete in November. Luke feels this process needs to change and wonders whether there are any better approaches the company could take to their budgeting. Luke says *“We have a lot of inefficiencies and surplus costs in our cost base at the minute and I feel like our budgeting process is not helping matters at all. This leaves us with poor numbers for comparison throughout the year and thus making irrelevant most of the variances we calculate”*

Luke continues, “Take as one example this report that was provided to me about our labour variances for our new sandwich production line for Q4 2018. These variances just do not seem right to me and yet they are being linked to a labour manager’s bonus for achieving such favourable outcomes. You might take a look and see what you think”

Q4 2018 Labour Variance Report - Sandwich Contract

Standard Cost Card - Extract

Labour hours per batch (Note 2)	50	
Cost per labour hour	15	
 Batches produced in Q4 2018	 16	
	€	
Standard Labour Cost	12,000	
Actual Labour Cost (Note 1)	<u>9,800</u>	
Overall Labour Variance	2,200	Fav

Note 1: The actual labour rate per hour was €2.50 above the standard rate due to a shortage in skilled workers in Q4 2018. Actual hours worked were 560.

Note 2: The 50 hours per batch is an estimate for the first batch of this new sandwich. Based on past experience of new sandwich production, a 90% learning curve effect would apply as production increases.

Requirement:

Prepare a report for Luke Flynn that deals with the following issues;

- (a) Calculate the weighted average cost of capital of Sambo Plc based on the information provided above. (40 marks)
 - (b) For the Q4 2018 labour variance report;
 - i) Subdivide the overall labour variance for Q4 2018 into labour rate and labour efficiency variances.
 - ii) Recalculate the labour rate and efficiency variances based on a labour standard which takes into account the learning curve effect.
 - iii) Discuss the implications of your findings in (i) and (ii) above. (25 marks)
 - (c) Advise Luke on the limitations of the current approach to budgeting in Sambo and discuss at least three alternative approaches that could be useful for the company. (30 marks)
- Presentation (5 marks)
- (100 marks)**

* Prepared by lecturer, not a CAI official mock/sample paper.

SFMA IA Mock Paper 1 Suggest Solution

(a)

Weighted Average Cost of Capital - Sambo Plc

€'000	Cost	Market Value	Weight	W*C
Ordinary Share Capital (W1)	28.75%	150,000	0.71259	0.20487
Preference Shares (W2)	5.50%	32,700	0.15534	0.00854
Redeemable Bond (W3)	9.30%	17,800	0.08456	0.00786
ProBank Loan (W4)	5.25%	10,000	0.04751	0.00249
		210,500		
			WACC	22.38%

W1 Ordinary Share Capital

Market Value

Number of Shares	= 80/.80 = 100 million shares
Share price (ex-div)	1.5
Market capitalisation	150 million

Cost of Equity

Dividend Valuation Model

Dividend valuation model (with growth – finding the cost of equity)

$$K_e = \frac{D_0(1+g)}{P_0} + g$$

Dividend 2014 = 0.12

Dividend 2018 = 0.20

Calculate average compound growth rate of dividend over four periods

$$g = (0.2/0.12)^{(1/4)} - 1 = 13.6\%$$

$$\text{Cost of equity} = 0.2*(1.136)/1.5 + .136 = 28.75\%$$

W2 Preference Shares

Dividend = 6% * €5 = 0.3

Price (cum div) = €5.75

Price (ex div) = €5.75 - €0.3 = €5.45

Cost of preference shares = €0.3/€5.45 = 5.5%

Market value = $30,000,000/5 = 6,000,000$ preference shares * €5.45 = €32.7 million

W3 Redeemable Bond

Step 1 – Set out cashflows from bond

Year	0	1-7	7
Cashflows	-89	8	100

Interest = $8\% * 100$ (nominal value of bond)

2019 – 2025 = 7 years left until redemption

Step 2 – Adjust cashflows for tax benefit (interest only)

Year	0	1-7	7
Cashflows (tax adj)	-89	7	100

$8 * (1-.125) = 7$ after tax interest cost per annum.

Step 3 – Calculate the IRR on the cashflows

Choose (say) 10% to start and get NPV

Year	0	1-7	7
Cashflows (tax adj)	-89	7	100
Discount Factor	1		0.513
Annuity Factor		4.868	
Present Value	-89	34.076	51.3
NPV	-3.624		

Need to get a positive NPV now so need to lower discount rate to (say) 5%

Year	0	1-7	7
Cashflows (tax adj)	-89	7	100
Discount Factor	1		0.711
Annuity Factor		5.786	

Present Value	-89	40.502	71.1
NPV	22.602		

NB use your rules of thumb before doing the IRR calculation – answer must be between 5&10% and it should be much closer to 10% than 5% (as -3.6 is closer to zero than 22.6)

$$R1 = 5\%$$

$$R2 = 10\%$$

$$NPV 1 = 22.602$$

$$NPV2 = -3.624$$

Interpolation (IRR)

$$\text{IRR rate} = \text{Rate 1} + \frac{\text{NPV 1 (Rate 2 - Rate 1)}}{\text{NPV 1 - NPV 2}}$$

$$\text{IRR} = 0.05 + (22.602 * (.1 - .05)) / (22.602 + 3.624)$$

$$\text{IRR} = 0.05 + .043$$

$$\text{IRR} = \text{after tax cost of redeemable bond} = 9.3\%$$

$$\text{Market value} = 20,000,000 / 100 = 200,000 \text{ bonds} * 89 = \text{€}17,800,000$$

W4 ProBank Loan

$$\text{Interest cost} = 6\%$$

$$\text{After tax cost} = 6\% * (1 - .125) = 5.25\%$$

Market value = book value as loan is not traded.

(b)(i)

Total Labour Variance Analysis		
AH*AR 560*17.5	AH*SR 560*15	SH*SR 50*16*15
9,800	8,400	12,000
	1,400 Adv Labour Rate	3,600 Fav Labour Efficiency
	2,200 Fav Total Labour Variance	

(ii)

Learning Curve

$$y = ax^b$$

Where y = cumulative average time
 a = time for first batch
 x = cumulative output in batches
 b = log of the learning rate / log 2

a = 50 hours per batch

x = 16 batches in Q4 2018

b = log 0.9/ log 2 = -.1520

$y = 50 * 16^{(-.1520)} = 32.805$ hours..... average time per batch for 16 batches

Proof of Learning Curve

Batches	Avg Hrs per Batch		Total Hours	
1	50	50	=50*1	50
2	=50*0.9	45	=45*2	90
4	=45*0.9	40.5	=40.5*4	162
8	=40.5*0.9	36.45	=36.45*8	291.6
16	=36.45*0.9	32.805	=32.805*16	524.88

Total Labour Variance Analysis (incl Learning Curve impact)

AH*AR	AH*SR	SH*SR
560*17.5	560*15	32.805*16*15
9,800	8,400	7,873
1,400		527
Adv		Adv
Labour		Labour
Rate		Efficiency
	1,927	
	Adv	
	Total Labour	
	Variance	

(iii)

When taking account of the learning curve effect, the labour variance goes from 2,200 favourable overall to 1,927 adverse overall. The main driver of this is the change in the labour efficiency variance.

By using the 50 hours per batch standard and not updating it for the learning curve effect, the company is overstating the hours needed for each subsequent batch and thus is creating an easy standard to meet and exceed from the labour manager's perspective. Accounting for the learning curve, Sambo should expect to use approx. 525 labour hours for 16 batches, not 560 hours. This is providing poor information for decision making and performance measurement. Standards should be realistic yet challenging to ensure staff are motivated.

Any change to the way labour standards are calculated needs to be carefully implement as these are linked to bonus payments and thus accounting for the learning curve effect may remove entitlements to bonuses and thus result in conflict and resistance to any proposed changes.

(c)

The current approach to budgeting in Sambo follows the incremental budgeting approach whereby last year's budget is adjusted incrementally each year.

While it is a relatively straightforward method of budgeting, it does have a number of limitations as Luke has found out already including;

- Past inefficiencies and "budget slack" are perpetuated since the relationship between costs, benefits and objectives is rarely subjected to close examination.
- The firm may continue with activities that do not add value to the organization and different ways of achieving the objectives of the firm may not be identified.

- Dysfunctional behaviour may result as managers do not want future budget cuts so they rush to spend any remaining funds based on a “use it or lose it” perspective to budgets.

There are several alternative (or sometimes complimentary) approaches that Sambo could use including;

Rolling budgets

A rolling budget is continually updated monthly with a budget always available for the next period, for example 6 months. As each month passes an extra month added to the end. This could be useful for Sambo as the current budget is complete in November and not updated or revised – thus providing outdated targets during the year.

Activity Based Budgeting (ABB)

ABB uses the data created through Activity Based Costing to create the budget. Activity based budgeting starts in a similar way to traditional forms of budgeting, with estimated demand for products and services. However at this point, there is a fundamental shift as activity based budgeting then looks at demand and estimates the operational requirements for each activity to form the basis for the budget. The operational plan is then used as the basis of the financial budget. The ABB approach focuses on activities and resources and this can highlight areas of concern and also aid accountability for activities

Zero Based Budgeting

Zero-based budgeting refers to a budgeting process which starts from a base of zero, with no reference being made to the prior period's budget or performance. Every department function is reviewed comprehensively, with all expenditure requiring approval, rather than just the incremental expenditure requiring approval. This could help Luke remove some of those inefficiencies and cost surpluses he references by doing a full comprehensive review of Sambo's cost base using ZBB.