



Lecture 3: Self-study exercises

(Adopted by Horngren, C.T., Bhimani, A., Datar, S.M. and Foster, G. (2012).

Management and cost accounting. Prentice Hall, 5th eds.)

14.12 Sales and production budget.

Lux-Ernster expects 2011 sales of 100 000 units of serving trays. Lux-Ernster's opening stock for 2011 is 7000 trays; target closing stock, 11 000 trays.

Required:

Calculate the number of trays budgeted for production in 2011.

Suggested Solution

Budgeted sales in units	100 000
Add target closing finished goods stock	<u>11 000</u>
Total requirements	111 000
Deduct opening finished goods stock	<u>7 000</u>
Units to be produced	<u>104 000</u>

14.13 Sales and production budget.

Sarandrea Sri had a target closing stock of 70000 four-litre bottles of burgundy wine. Sarandrea's opening stock was 60000 bottles, and its budgeted production was 900000 bottles.

Required

Calculate the budgeted sales in number of bottles.

Suggested Solution

Budgeted sales (units)	S
Add target closing finished goods stock	70,000
Total requirements	N
Deduct opening finished goods stock	60,000
Units to be produced	900,000
N = 900,000 + 60,000 = 960,000	
S = 960,000 - 70,000 = 890,000	

14.14 Direct materials purchases budget

Europa-Dyonisos SA produces wine. The company expects to produce 1.5 million two-litre bottles of Chablis in 2011. Europa-Dyonisos purchases empty glass bottles from an outside supplier. Its target closing stock of such bottles is 50000; its opening stock is 20000. For simplicity, ignore breakage.

Required

Calculate the number of bottles to be purchased in 2011.

Suggested Solution

Direct materials to be used in production (bottles)	1,500,000
Add target closing direct materials stock (bottles)	<u>50,000</u>
Total requirements (bottles)	1,550,000
Deduct opening direct materials stock (bottles)	<u>20,000</u>
Direct materials to be purchased (bottles)	<u>1,530,000</u>



14.15 Budgeting material purchases

Tiilikainen Oy has prepared a sales budget of 42000 finished units for a three-month period. The company has a stock of 22000 units of finished goods on hand at 31 December and has a target finished goods stock of 24000 units at the end of the succeeding quarter.

It takes 3 litres of direct materials to make 1 unit of finished product. The company has a stock of 90000 litres of direct materials at 31 December and has a target closing stock of 110000 litres.

Required

How many litres of direct materials should be purchased during the 3 months ending 31 March?

Suggested Solution

	Finished goods (units)
Budgeted sales	42,000
Add target closing finished goods stock	24,000
Total requirements	66,000
Deduct opening finished goods stock	<u>22,000</u>
Units to be produced	<u>44,000</u>

	Direct materials (in litres)
Direct materials needed for production (44,000 × 3)	132,000
Add target closing direct materials stock	<u>110,000</u>
Total requirements	242,000
Deduct opening direct materials stock	<u>90,000</u>
Direct materials to be purchased	<u>152,000</u>

14.17 Revenue, production and purchases budget

The Suzuki Company in Japan has a division that manufactures two-wheel motorcycles. Its budgeted sales for Model G in 2012 is 800000 units. Suzuki's target closing stock is 100000 units, and its opening stock is 120000 units. The company's budgeted selling price to its distributors and dealers is 400000 yen per motorcycle.

Suzuki buys all its wheels from an outside supplier. No defective wheels are accepted. Suzuki's needs for extra wheels for replacement parts are ordered by a separate division of the company). The company's target closing stock is 30000 wheels, and its opening stock is 20000 wheels. The budgeted purchase price is 16000 yen per wheel.

Required

1. Calculate the budgeted revenue in yen.
2. Calculate the number of motorcycles to be produced.
3. Calculate the budgeted purchases of wheels in units and in yen.



Suggested Solution

1	800,000 motorcycles × 400,000 yen = 320,000,000,000 yen	
2	Budgeted sales (units)	800,000
	Add target closing finished goods stock	<u>100,000</u>
	Total requirements	900,000
	Deduct opening finished goods stock	<u>120,000</u>
	Units to be produced	<u>780,000</u>
3	Direct materials to be used in production 780,000 × 2	1,560,000
	Add target closing direct materials stock	<u>30,000</u>
	Total requirements	1,590,000
	Deduct opening direct materials stock	<u>20,000</u>
	Direct materials to be purchased	1,570,000
	Cost per wheel in yen	<u>16,000</u>
	Direct materials purchased cost in yen	<u>25,120,000,000</u>

Note the relatively small stock of wheels. In Japan, suppliers tend to be located very close to the major manufacturer. Stocks are controlled by just-in-time and similar systems. Indeed, some direct materials stocks are almost non-existent.

14.20 Cash budgeting

On 1 December 2010, Tire-Lire, SNC, is attempting to project cash receipts and disbursements to 31 January 2011. On this latter date, a note will be payable in the amount of €100 000. This amount was borrowed in September to carry the company through the seasonal peak in November and December.

The trial balance on 1 December shows in part the following information:

Cash	€10 000	
Debtors	280 000	
Allowance for bad debts		€15 800
Stock	87 500	
Creditors		92 000

Sales terms call for a 2% discount if payment is made within the first 10 days of the month after purchase, with the balance due by the end of the month after purchase. Experience has shown that 70% of the billings will be collected within the discount period, 20% by the end of the month after purchase, 8% in the following month, and that 2% will be uncollectable. There are no cash sales. The average selling price of the company's products is €100 per unit. Actual and projected sales are:

October actual	€180 000
November actual	250 000
December estimated	300 000
January estimated	150 000
February estimated	120 000

All purchases are payable within 15 days. Thus approximately 50% of the purchases in a month are due and payable in the next month. The average unit purchase cost is €70. Target closing stocks are 500 units plus 25% of the next month's unit sales.

Total budgeted marketing, distribution and customer-service costs for the year are €400 000. Of this amount, €150 000 is considered fixed (and includes depreciation of €30 000). The remainder varies with sales (i.e., with a fixed ratio 1/6). Both fixed and variable marketing, distribution and customer-service costs are paid as incurred.

Required:

Prepare a cash budget for December and January. Supply supporting schedules for collections of debtors due payments for raw materials, and marketing, distribution and customer-service costs.



Suggested Solution

Tire-Lire, SNC		
Statement of budgeted cash receipts and disbursements for the months of December 2010 and January 2011		
	December 2010	January 2011
Cash balance, opening	€10 000	€2 025
Add receipts:		
Collections of receivables (schedule 1)	<u>235 900</u>	<u>285 800</u>
(a) Total cash available for needs	<u>245 900</u>	<u>287 825</u>
Deduct disbursements:		
For merchandise purchases (schedule 2)	183 875	141 750
For variable costs (schedule 3)	50 000	25 000
For fixed costs (schedule 3)	<u>10 000</u>	<u>10 000</u>
(b) Total disbursements	<u>243 875</u>	<u>176 750</u>
Cash balance, end of month (a-b)	<u>€2 025</u>	<u>€111 075</u>

Enough cash should be available for repayment of the note on 31 January 2011.

Schedule 1: Collections of receivables.

December: 14 400 [a] + 50 000 [b] + 171 500 [c] = €235 900

January: 20 000 [d] + 60 000 [e] + 205 800 [f] = €285 800

[a] 0.08 x €180 000 [b] 0.20 x €250 000 [c] 0.70 x €250 000 x 0.98

[d] 0.08 x €250 000 [e] 0.20 x €300 000 [f] 0.70 x €300 000 x 0.98

Schedule 2: Payments for merchandise

	December	January
Target closing stock (in units)	875 [a]	800 [c]
Add units sold (Sales ÷ €100)	<u>3 000</u>	<u>1 500</u>
Total requirements	3 875	2 300
Deduct opening stock (in units)	<u>1 250 [b]</u>	<u>875</u>
Purchases (in units)	<u>2 625</u>	<u>1 425</u>
Purchases in francs (units x €70)	<u>€183 750</u>	<u>€99 750</u>

[a] 500 units + 0.25 (150 000 ÷ 100) [b] 87 500 ÷ 70

[c] 500 units + 0.25 (120 000 ÷ 100)

	December	January
Cash disbursements:		
For previous month's purchases at 50%	€92 000	€91 875
For current month's purchases at 50%	<u>€91 875</u>	<u>€49 875</u>
	<u>€183 875</u>	<u>€141 750</u>

Schedule 3: Marketing, distribution and customer service costs

Total annual fixed costs, €150 000, minus €30 000 depreciation	=	€120 000
Monthly fixed cost requiring cash outlay	=	€ 10 000
Variable cost ratio to sales = 1/6		
December variable costs: 1/6 x €300 000 sales	=	€50 000
January variable costs: 1/6 x €150 000 sales	=	€25 000