FOTAMAT

CHAPTER 6

1 شرح لبقية الفصل, لكن ليس مطلوب لطلبة جامعة الكويت

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Segmented income statements and the contribution approach

A traceable fixed cost	is a fixed cost that is incurred because of the existence of the segment, if the segment had never existed the fixed cost would not have been incurred and if the segment were eliminated the fixed cost would disappear
A common fixed cost	is a fixed cost that supports the operations of more than one segment, but is not traceable in whole or in part to any segment
Segment margin	is obtained by deducting the traceable fixed costs of a segment from the segment's contribution margin. It represents the margin available after a segment has covered all of its own costs

Traceable fixed costs can become common fixed costs

1	Segment margin is sales less variable expenses less traceable fixed expenses.	TRUE
2	All other things the same, if a division's traceable fixed expenses decrease then the division's segment margin will decrease.	FALSE
3	The salary paid to a store manager is not a traceable fixed expense of the store.	FALSE
4	A company has two divisions, each selling several products. If segment reports are prepared for each product, the division managers' salaries should be considered as common fixed costs of the products.	TRUE
5	Allocating common fixed costs to segments on segmented income statements increases the usefulness of such statements.	TRUE
6	If a cost must be arbitrarily allocated in order to be assigned to a particular segment, then that cost should be considered a common cost.	TRUE
7	Segmented statements for internal use should not be prepared using the contribution format.	FALSE

1) Hayworth Corporation has just segmented last year's income statement into its ten product lines. The chief executive officer (CEO) is curious as to what effect dropping one of the product lines at the beginning of last year would have had on overall company profit. What is the best number for the CEO to look at to determine the effect of this elimination on the net operating income of the company as a whole?
A) the product line's sales dollars
B) the product line's contribution margin
C) the product line's segment margin
D) the product line's segment margin minus an allocated portion of common fixed expenses

2) Higado Confectionery Corporation has a number of store locations throughout North America. In income statements segmented by store, which of the following would be considered a common fixed cost with respect to the stores?
A) store manager salaries
B) store building depreciation expense
C) the cost of corporate advertising aired during the Super Bowl
D) cost of goods sold at each store

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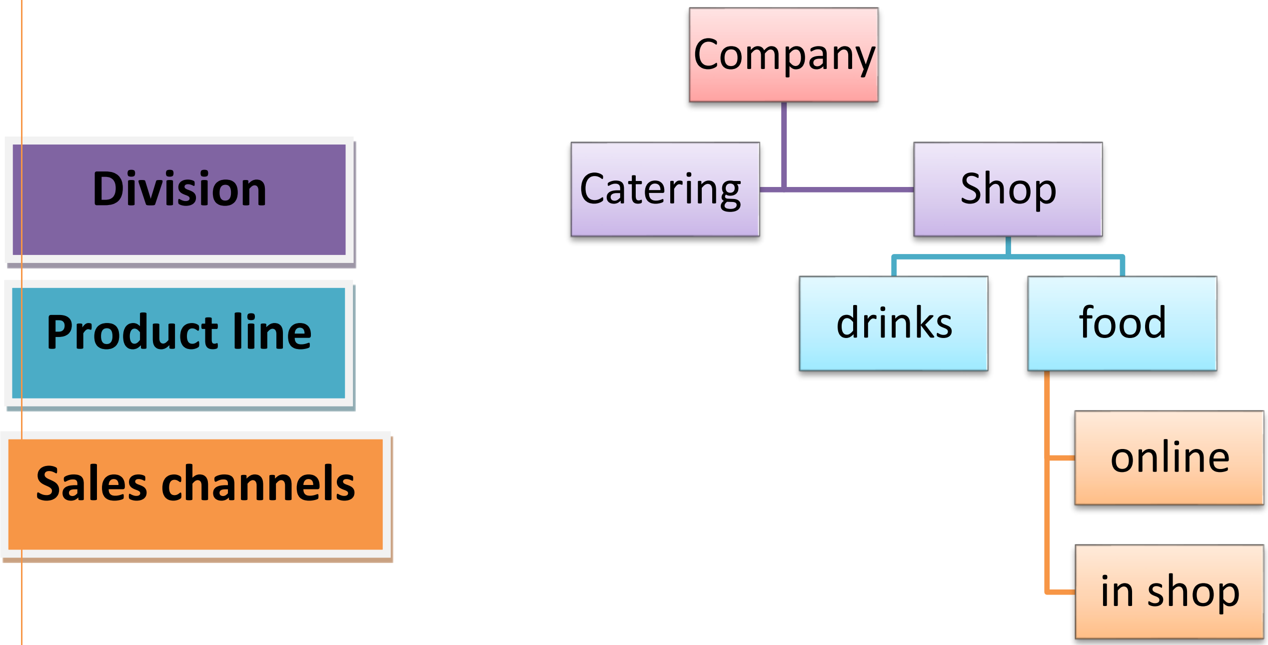
Segmented income statements – an example



Coffee shop || variable costing income statement	
Sales	$500,000
Variable expenses:	
COGS	(180,000)
Other variable expense	(50,000)
Total variable expense	(230,000)
Contribution margin	270,000
Fixed expense	(256,500)
Net operating income	13,500

Segmented defined as divisions			
		divisions	
	total	**Catering**	**shops**
Sales	$500,000	$300,000	$200,000
Variable expenses:			
COGS	(180,000)	(120,000)	(60,000)
Other variable expenses	(50,000)	(30,000)	(20,000)
Total variable expenses	(230,000)	(150,000)	(80,000)
Contribution margin	270,000	150,000	120,000
Traceable fixed expense	(171,000)	(90,000)	(81,000)
Divisional segment margin	99,000	60,000	39,000
Common fixed expense	85,000		
Net operating income	$13,500		

Segmented defined as product lines			
	Product lines		
	shop	**drinks**	**food**
Sales	$200,000	$75,000	$125,000
Variable expenses:			
COGS	(60,000)	(20,000)	(40,000)
Other variable expenses	(20,000)	(5,000)	(15,000)
Total variable expenses	(80,000)	(25,000)	(55,000)
Contribution margin	120,000	50,000	70,000
Traceable fixed expense	(70,000)	(30,000)	(40,000)
Product line segment margin	50,000	20,000	30,000
Common fixed expense	(11,000)		
Net operating income	$39,000		

Segmented defined as product sales channels			
	Sales channels		
	food	**Online**	**In shop**
Sales	$125,000	$100,000	$25,000
Variable expenses:			
COGS	(40,000)	(32,000)	(8,000)
Other variable expenses	(15,000)	(5,000)	(10,000)
Total variable expenses	(55,000)	(37,000)	(18,000)
Contribution margin	70,000	63,000	7,000
Traceable fixed expense	(25,000)	(15,000)	(10,000)
Sales channel segment margin	45,000	48,000	(3,000)
Common fixed expense	(15,000)		
Net operating income	$30,000		

1) The impact on net operating income of a small change in sales for a segment is best predicted by using:
A) the contribution margin ratio.
B) the segment margin.
C) the ratio of the segment margin to sales.
D) net sales less segment fixed costs.

2) Corbel Corporation has two divisions: Division A and Division B. Last month, the company reported a contribution margin of $60,000 for Division A. Division B had a contribution margin ratio of 40% and its sales were $300,000. Net operating income for the company was $40,000 and traceable fixed expenses were $80,000. Corbel Corporation's common fixed expenses were:
A) $140,000
B) $60,000
C) $100,000
D) $80,000

Three questions Azuki Corporation operates in two sales territories, Urban and Rural. Data concerning last year's operations appear below:

Sales	$ 320,000	$ 80,000
Variable expenses	208,000	56,000
Contribution margin	112,000	24,000
Traceable fixed expenses	48,000	30,000
Segment margin	$ 64,000	$ (6,000)

Azuki's common fixed expenses were $25,000 last year.

3)What was Azuki Corporation's overall net operating income for last year?
A) $33,000
B) $45,000
C) $58,000
D) $83,000

4)If Urban sales were 10% higher last year, by approximately how much would Azuki's net operating income have increased? (Assume no change in selling prices, unit variable expenses, or total fixed expenses.)
A) $4,400
B) $6,400
C) $11,200
D) $32,000

5)If operations in the Rural Sales Territory would have been discontinued at the beginning of last year, how would this have changed the net operating income of Azuki Corporation as a whole?
A) $5,000 increase
B) $6,000 increase
C) $11,000 increase
D) $24,000 decrease

6) Miscavage Corporation has two divisions: the Beta Division and the Alpha Division. The Beta Division has sales of $580,000, variable expenses of $301,600, and traceable fixed expenses of $186,500. The Alpha Division has sales of $510,000, variable expenses of $178,500, and traceable fixed expenses of $222,100. The total amount of common fixed expenses not traceable to the individual divisions is $235,500. What is the company's net operating income?
A) $374,400
B) $201,300
C) $609,900
D) ($34,200)

7) Younie Corporation has two divisions: the South Division and the West Division. The corporation's net operating income is $26,900. The South Division's divisional segment margin is $42,800 and the West Division's divisional segment margin is $29,900. What is the amount of the common fixed expense not traceable to the individual divisions?
A) $56,800
B) $69,700
C) $72,700
D) $45,800

Three questions Tubaugh Corporation has two major business segments--East and West. In December, the East business segment had sales revenues of $690,000, variable expenses of $352,000, and traceable fixed expenses of $104,000. During the same month, the West business segment had sales revenues of $140,000, variable expenses of $56,000, and traceable fixed expenses of $24,000. The common fixed expenses totaled $162,000 and were allocated as follows: $89,000 to the East business segment and $73,000 to the West business segment.

8)The contribution margin of the West business segment is:
A) $**84**,000
B) $234,000
C) $422,000
D) $145,000

9)A properly constructed segmented income statement in a contribution format would show that the segment margin of the East business segment is:
A) $352,000
B) $145,000
C) $234,000
D) $249,000

10)A properly constructed segmented income statement in a contribution format would show that the net operating income of the company as a whole is:
A) $294,000
B) $422,000
C) $132,000
D) $(30,000)

11) Carroll Corporation has two products, Q and P. During June, the company's net operating income was $25,000, and the common fixed expenses were $37,000. The contribution margin ratio for Product Q was 30%, its sales were $200,000, and its segment margin was $21,000. If the contribution margin for Product P was $80,000, the segment margin for Product P was:
A) $62,000
B) $59,000
C) $37,000
D) $41,000

12) J Corporation has two divisions. Division A has a contribution margin of $79,300 and Division B has a contribution margin of $126,200. If total traceable fixed expenses are $72,400 and total common fixed expenses are $34,900, what is J Corporation's net operating income?
A) $168,000
B) $170,600
C) $133,100
D) $98,200

Three questions Ieso Corporation has two stores: J and K. During November, Ieso Corporation reported a net operating income of $30,000 and sales of $450,000. The contribution margin in Store J was $100,000, or 40% of sales. The segment margin in Store K was $30,000, or 15% of sales. Traceable fixed expenses are $60,000 in Store J, and $40,000 in Store K.

13)Sales in Store J totaled:
A) $400,000
B) $250,000
C) $150,000
D) $100,000

14)Variable expenses in Store K totaled:
A) $70,000
B) $110,000
C) $200,000
D) $130,000

15)Ieso Corporation's total fixed expenses for the year were:
A) $40,000
B) $100,000
C) $140,000
D) $170,000

16) WV Construction has two divisions: Remodeling and New Home Construction. Each division has an on-site supervisor who is paid a salary of $58,000 annually and one salaried estimator who is paid $52,000 annually. The corporate office has two office administrative assistants who are paid salaries of $38,000 and $31,000 annually. The president's salary is $127,000. How much of these salaries are common fixed expenses?
A) $127,000
B) $110,000
C) $196,000
D) $306,000

17) Toxemia Salsa Corporation manufactures five flavors of salsa. Last year, Toxemia generated net operating income of $40,000. The following information was taken from last year's income statement segmented by flavor (brackets indicate a negative amount):

	Wimpy	Mild	Medium	Hot	Atomic
Contribution margin	$ (2,000)	$ 45,000	$ 35,000	$ 50,000	$ 162,000
Segment margin	$ (16,000)	$ (5,000)	$ 7,000	$ 10,000	$ 94,000
Allocated common fixed expenses	$ 10,000	$ 10,000	$ 10,000	$ 10,000	$ 10,000
Segment margin less allocated common fixed expenses	$ (26,000)	$ (15,000)	$ (3,000)	$ 0	$ 84,000

Toxemia expects similar operating results for the upcoming year. If Toxemia wants to maximize its profitability in the upcoming year, which flavor or flavors should Toxemia discontinue?
A) no flavors should be discontinued
B) Wimpy
C) Wimpy and Mild
D) Wimpy, Mild, and Medium

18) Eyestone Corporation has two divisions, A and B. The following data pertain to operations in October:

	Division A	Division B
Sales	$ 80,000	$ 170,000
Variable expenses as a percentage of sales	60 %	80 %
Segment margin	$ 10,000	$ 25,000

A) $48,000
B) $13,000
C) $31,000
D) $53,000

19) Chang Corporation has two divisions, T and W. The company's overall contribution margin ratio is 40%, with sales in the two divisions totaling $900,000. If variable expenses are $200,000 in Division T and if Division W's contribution margin ratio is 20%, the sales in Division W must be:
A) $200,000
B) $425,000
C) $700,000
D) $340,000

Two questions Data for January for Bondi Corporation and its two major business segments, North and South, appear below:

Sales revenues, North	$ 660,000
Variable expenses, North	$ 383,000
Traceable fixed expenses, North	$ 79,000
Sales revenues, South	$ 510,000
Variable expenses, South	$ 291,000
Traceable fixed expenses, South	$ 66,000

In addition, common fixed expenses totaled $179,000 and were allocated as follows: $93,000 to the North business segment and $86,000 to the South business segment.

20)A properly constructed segmented income statement in a contribution format would show that the segment margin of the North business segment is:
A) $105,000
B) $383,000
C) $198,000
D) $184,000

21)A properly constructed segmented income statement in a contribution format would show that the net operating income of the company as a whole is:
A) $(7,000)
B) $172,000
C) $351,000
D) $496,000

Two questions Nantor Corporation has two divisions, Southern and Northern. The following information was taken from last year's income statement segmented by division:

	Total Company	Southern	Northern
Sales	$ 8,000,000	$ 5,000,000	$ 3,000,000
Contribution margin	$ 3,300,000	$ 2,100,000	$ 1,200,000
Divisional segment margin	$ 1,700,000	$ 1,400,000	$ 600,000

Net operating income last year for Nantor Corporation was $800,000.

22) In last year's income statement segmented by division, what were Nantor's total common fixed expenses?
A) $1,300,000
B) $1,600,000
C) $1,250,000
D) $900,000

23) If the Northern Division's sales last year were $600,000 higher, how would this have changed Nantua's net operating income? (Assume no change in selling prices, variable expenses per unit, or fixed expenses.)
A) $240,000 increase
B) $60,000 increase
C) $160,000 increase
D) $1,200,000 increase

24) Data for January for Bondi Corporation and its two major business segments, North and South, appear below:

Sales revenues, North	$ 660,000
Variable expenses, North	$ 383,000
Traceable fixed expenses, North	$ 79,000
Sales revenues, South	$ 510,000
Variable expenses, South	$ 291,000
Traceable fixed expenses, South	$ 66,000

In addition, common fixed expenses totaled $179,000 and were allocated as follows: $93,000 to the North business segment and $86,000 to the South business segment.

The contribution margin of the South business segment is:
A) $198,000
B) $496,000
C) $219,000
D) $105,000

Three questions Ferrar Corporation has two major business segments: Consumer and Commercial. Data for the segments and for the company for March appear below:

Sales revenues, Consumer	$ 680,000
Sales revenues, Commercial	$ 280,000
Variable expenses, Consumer	$ 394,000
Variable expenses, Commercial	$ 143,000
Traceable fixed expenses, Consumer	$ 102,000
Traceable fixed expenses, Commercial	$ 45,000

In addition, common fixed expenses totaled $210,000 and were allocated as follows: $122,000 to the Consumer business segment and $88,000 to the Commercial business segment.

25)The contribution margin of the Commercial business segment is:
A) $137,000
B) $184,000
C) $62,000
D) $423,000

26)A properly constructed segmented income statement in a contribution format would show that the segment margin of the Consumer business segment is:
A) $164,000
B) $62,000
C) $394,000
D) $184,000

27)A properly constructed segmented income statement in a contribution format would show that the net operating income of the company as a whole is:
A) $66,000
B) $(144,000)
C) $423,000
D) $276,000

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Segmented income statements – decision making

The company' believes that online sales will increase by 10% if it discontinues the shop sales channel. It also believes that the catering division and drinks line will be unaffected by this division. How would you compute the profit impact of this decision?

Segmented defined as product sales channels			
		Sales channels	
	food	**Online**	**In shop**
Sales	$125,000	$100,000	$25,000
Variable expenses:			
COGS	(40,000)	(32,000)	(8,000)
Other variable expenses	(15,000)	(5,000)	(10,000)
Total variable expenses	(55,000)	(37,000)	(18,000)
Contribution margin	70,000	63,000	7,000
Traceable fixed expense	(25,000)	(15,000)	(10,000)
Sales channel segment margin	45,000	48,000	(3,000)
Common fixed expense	(15,000)		
Net operating income	$30,000		

Avoidance of the shop's segment loss	
Increase in online sales contribution margin	
Increase in the company's net operating income	

and break-even point

$$\text{Break-even in sales dollars} = \frac{\text{traceable fixed expense + common fixed expense}}{\text{CM \%}}$$

$$\text{Break-even for a segment in dollar sales} = \frac{\text{Segment traceable fixed expense}}{\text{Segment CM\%}}$$

<u>Compute the break-even point in sales dollar for the company and for each division</u>

Segmented defined as divisions			
		divisions	
	total	**Catering**	**shops**
Sales	$500,000	$300,000	$200,000
<u>Variable expenses:</u>			
COGS	(180,000)	(120,000)	(60,000)
Other variable expenses	(50,000)	(30,000)	(20,000)
Total variable expenses	(230,000)	(150,000)	(80,000)
Contribution margin	270,000	150,000	120,000
Traceable fixed expense	(171,000)	(90,000)	(81,000)
Divisional segment margin	99,000	60,000	39,000
Common fixed expense	85,000		
Net operating income	$13,500		

	divisions		
	total	Catering	shops
Sales	$315,000	$180,000	$135,000
Variable expense	(144,000)	(90,000)	(54,000)
Contribution margin	171,000	90,000	81,000
Traceable fixed expense	(171,000)	(90,000)	(81,000)
segment margin	0	0	0
Common fixed expense	85,000		
Net operating income	(85,000)		

Common mistakes

- Omission of costs
- Inappropriate methods for assigning traceable costs among segments
    A. Failure to trace costs directly
    B. Inappropriate allocation base
- arbitrarily dividing common costs among segments

1	When using segmented income statements, the dollar sales for a company to break even equals the traceable fixed expenses divided by the overall CM ratio.	FALSE
2	Common fixed expenses should not be allocated to business segments when performing break-even calculations and making decisions.	TRUE
3	When computing the break even for a segment, the calculations include the company's common fixed expenses.	FALSE
4	Variable costing net operating income is usually closer to the net cash flow of a period than is costing absorption net operating income.	TRUE

1) When using data from a segmented income statement, the dollar sales for a segment to break even is equal to:
A) Traceable fixed expenses ÷ Segment CM ratio
B) Common fixed expenses ÷ Segment CM ratio
C) (Traceable fixed expenses + Common fixed expenses) ÷ Segment CM ratio
D) Non-traceable fixed expenses ÷ Segment CM ratio

2) Allocating common fixed expenses to business segments:
A) may cause managers to erroneously discontinue business segments.
B) may cause managers to erroneously keep business segments that should be dropped.
C) ensures that all costs are covered.
D) helps managers make good decisions.

3) Fernstrom Corporation has two divisions: East and West. Data from the most recent month appear below:

	East	West
Sales	$ 330,000	$ 144,000
Variable expenses	$ 132,000	$ 76,320
Traceable fixed expenses	$ 140,000	$ 43,000

The company's common fixed expenses total $52,140. If the company operates at exactly the break-even sales of the East Division and West Division, what would be the company's overall net operating income?
A) $0
B) ($235,140)
C) ($52,140)
D) $30,540

4) Mckissic Corporation has two divisions: Domestic and Foreign. Data from the most recent month appear below:

	Total Company	Domestic	Foreign
Sales	$ 450,000	$ 119,000	$ 331,000
Variable expenses	157,240	38,080	119,160
Contribution margin	292,760	80,920	211,840
Traceable fixed expenses	226,000	57,000	169,000
Segment margin	66,760	$ 23,920	$ 42,840
Common fixed expenses	58,500		
Net operating income	$ 8,260		

The break-even in sales dollars for the company as a whole is closest to:
A) $437,304
B) $347,886
C) $394,323
D) $89,418

Two questions Bertie Corporation has two divisions: Retail Division and Wholesale Division. The following data are for the most recent operating period:

	Total Company	Retail Division	Wholesale Division
Sales	$ 680,000	$ 375,000	$ 233,000
Variable expenses	$ 185,530	$ 90,000	$ 95,530
Traceable fixed expenses	$ 303,000	$ 217,000	$ 86,000

The common fixed expenses of the company are $103,360.

5)The Wholesale Division's break-even sales is closest to:
A) $145,763
B) $320,949
C) $212,898
D) $584,815

6)The company's overall break-even sales is closest to:
A) $153,526
B) $431,289
C) $526,014
D) $584,815

Three questions Gardella Corporation has two divisions: Domestic Division and Foreign Division. The following data are for the most recent operating period:

	Domestic Division	Foreign Division
Sales	$ 210,000	$ 270,000
Variable expenses	$ 90,300	$ 86,400
Traceable fixed expenses	$ 90,000	$ 121,000
Common fixed expense	$ 37,800	$ 48,600

The common fixed expenses have been allocated to the divisions on the basis of sales.

7)The Domestic Division's break-even sales is closest to:
A) $309,474
B) $157,895
C) $224,211
D) $470,663

8)The Foreign Division's break-even sales is closest to:
A) $305,000
B) $249,412
C) $470,663
D) $177,941

9)The company's overall break-even sales is closest to:
A) $449,317
B) $134,827
C) $470,663
D) $335,836

Four questions Wyrich Corporation has two divisions: Blue Division and Gold Division. The following report is for the most recent operating period:

	Total Company	Blue Division	Gold Division
Sales	$ 522,000	$ 391,000	$ 131,000
Variable expenses	160,670	89,930	70,740
Contribution margin	361,330	301,070	60,260
Traceable fixed expenses	286,000	239,000	47,000
Segment margin	75,330	$ 62,070	$ 13,260
Common fixed expenses	73,080		
Net operating income	$ 2,250		

10)The Blue Division's break-even sales is closest to:
A) $518,750
B) $405,299
C) $381,481
D) $310,390

11)The Gold Division's break-even sales is closest to:
A) $102,174
B) $261,043
C) $142,043
D) $518,750

12)The company's overall break-even sales is closest to:
A) $412,564
B) $506,409
C) $518,750
D) $106,186

13)What is the company's overall net operating income if it operates at the break-even points for its two divisions?
A) $2,250
B) $0
C) $(73,080)
D) $(359,080)

THE END

Good luck