

Chapter 11

Standard costs for control: flexible budgets and manufacturing overhead

Flexible budgets

- ◆ Used to control overheads
- ◆ A detailed budget that is prepared for a range of levels of activities
 - ▲ Compared to a static budget which relates to one specific planned level of activity
- ◆ Often restricted to the practice of flexing overhead costs to various levels of activity

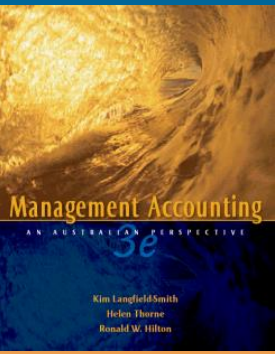
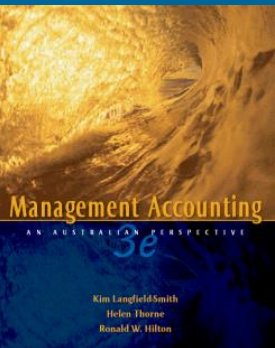


EXHIBIT 11.1 Static and flexible budgets for moleskins, R.M. Williams

	Static budget for September	Flexible budget for September		
Production units	2 500	2 000	2 500	3 000
Direct materials @ \$38.75 per unit	\$96 875	\$77 500	\$96 875	\$116 250
Direct labour @ \$25.20 per unit	\$63 000	\$50 400	\$63 000	\$75 600
	<i>Static budget: based on only one level of activity</i>	<i>Flexible budgets include several possible levels of activity</i>		

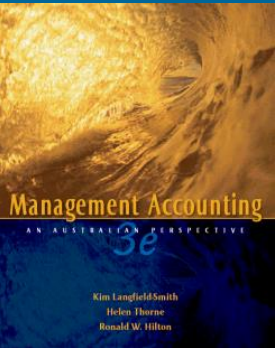
Advantages of flexible budgets

- ◆ Allows us to select the most appropriate benchmark for cost control
- ◆ Provides the correct basis for comparing actual and expected costs, for the actual level of activity



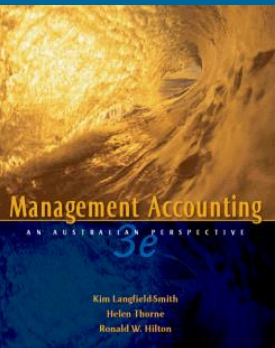
Input measures and output measures

- ◆ Units of output are not usually a meaningful measure of the level of activity in a multiproduct firm
- ◆ Output can be measured as the *standard quantity of input allowed, given actual output*

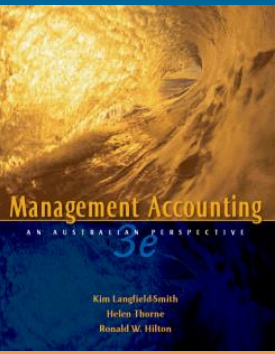


Flexible overhead budget

- ◆ Flexible budget report: shows flexible overhead budgets at various levels of activity
- ◆ Formula flexible budget: allows us to calculate total overhead at various levels of activity using a formula



Flexible overhead budget



$$\text{Total budgeted cost} = \left\{ \begin{array}{l} \text{budgeted variable} \\ \text{overhead cost per} \\ \text{unit of activity} \end{array} \times \begin{array}{l} \text{total} \\ \text{activity} \\ \text{units} \end{array} \right\} + \text{budgeted fixed overhead cost}$$

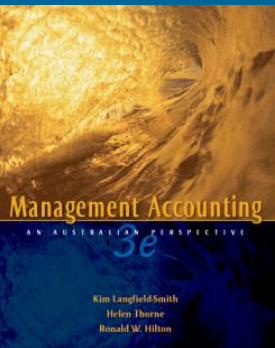
EXHIBIT 11.3 Flexible Manufacturing Budget, R.M. Williams

Monthly Manufacturing Overhead Budget for 2002 Clothing Department				
	Direct labour hours			
	4000	4200	4400	4600
Variable overheads:				
Indirect materials	7 280	7 644	8 008	8 372
Electricity	2 920	3 066	3 212	3 358
Consumables	1 800	1 890	1 980	2 070
Total variable overhead	<u><u>\$12 000</u></u>	<u><u>\$12 600</u></u>	<u><u>\$13 200</u></u>	<u><u>\$13 800</u></u>
Fixed overheads:				
Supervisors' salaries	7 000	7 000	7 000	7 000
Factory rent	3 000	3 000	3 000	3 000
Council rates	600	600	600	600
Cleaning costs	1 800	1 800	1 800	1 800
Insurance	800	800	800	800
Depreciation of machinery	1 800	1 800	1 800	1 800
Total fixed overhead	<u><u>\$15 000</u></u>	<u><u>\$15 000</u></u>	<u><u>\$15 000</u></u>	<u><u>\$15 000</u></u>
Total manufacturing overheads	<u><u>\$27 000</u></u>	<u><u>\$27 600</u></u>	<u><u>\$28 200</u></u>	<u><u>\$28 800</u></u>

Total budgeted monthly overhead cost = $(\$3 \times \text{number of direct labour hours}) + \$15\,000$

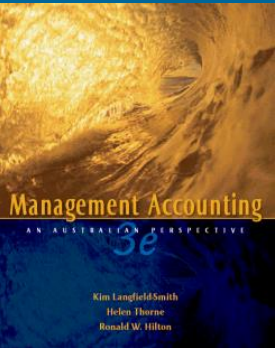
Overhead application in a standard costing system

- ◆ Overhead is applied to inventory using the standard overhead rate
 - ▲ Based on the standard quantity of input allowed, given actual output
- ◆ The activity chosen for the standard overhead rate should be a cost driver
 - ▲ Any activity or factor that causes cost to be incurred



Calculating variable overhead variances

- ◆ Flexible budgets provide a tool for controlling manufacturing overhead costs
- ◆ Four overhead variances can be calculated to compare the actual overhead cost incurred with the flexible budget



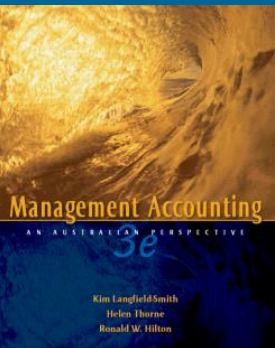
Calculating variable overhead cost variances

- ◆ Variable overhead spending variance
 - ▲ A measure of the difference between the actual variable overhead and the standard variable overhead rate multiplied by actual activity

$$= \text{Actual variable overhead} - (\text{AH} \times \text{SVR})$$

Where AH = actual direct labour hours
 SVR = standard variable overhead rate

continued



Calculating variable overhead cost variances

- ◆ Variable overhead efficiency variance
 - ▲ A measure of the difference between the actual activity and the standard activity allowed, given the actual output multiplied by the standard variable overhead rate
- = SVR (AH – SH)

Where SH = standard direct labour hours allowed for actual output

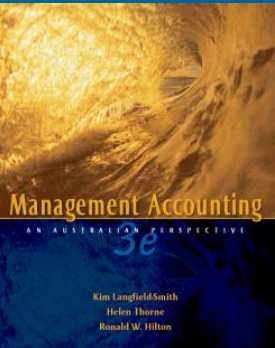
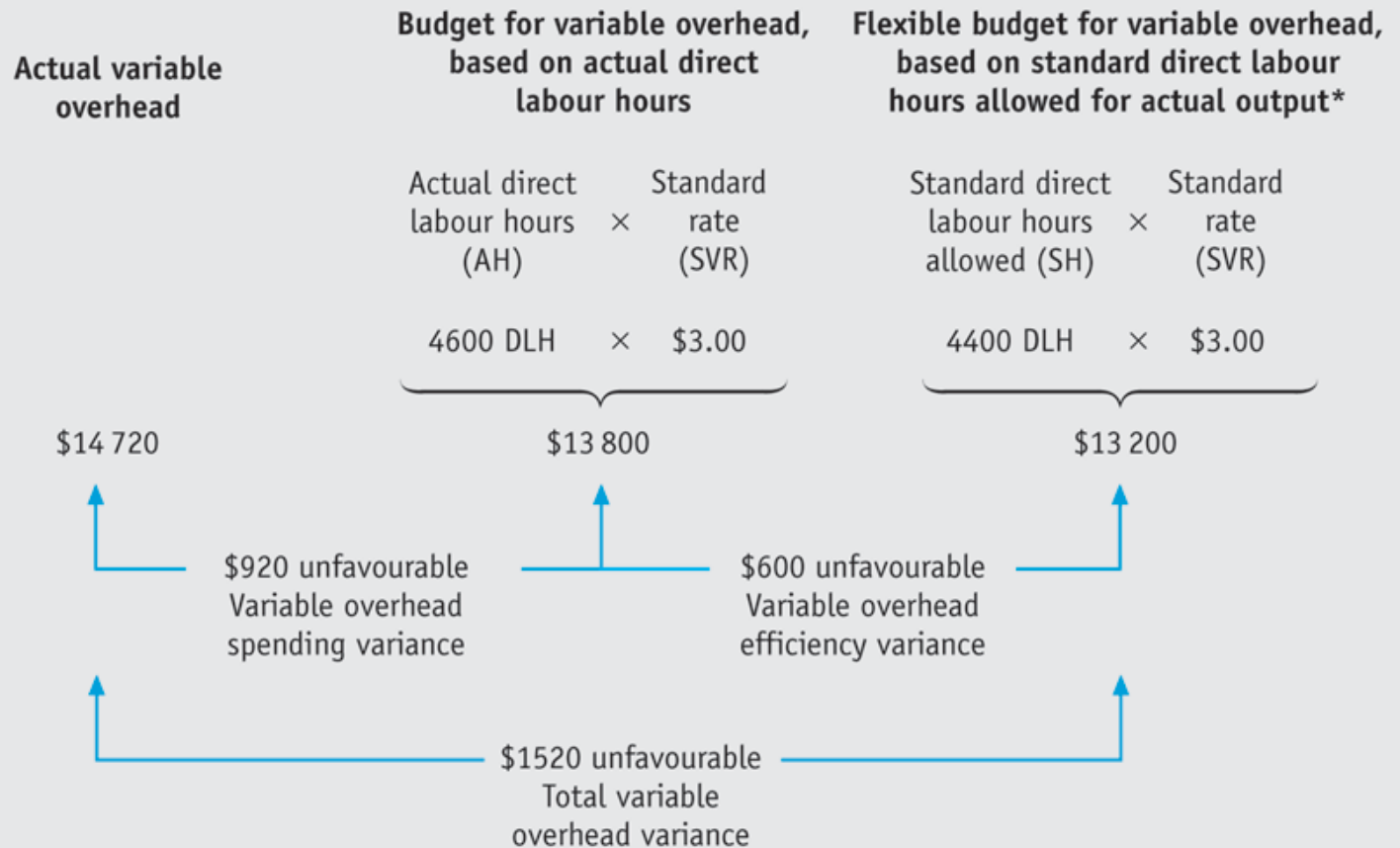
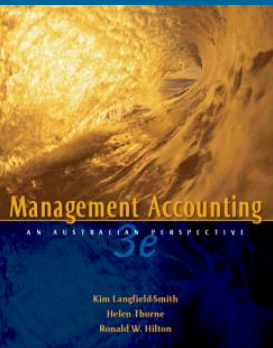


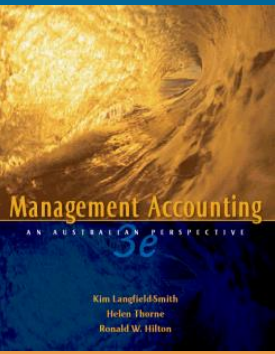
EXHIBIT 11.5 Variable overhead spending and efficiency variances, R.M. Williams



* The flexible budget amount for variable overhead in the final column is the amount that is charged to work in process inventory for product costing purposes.

Interpreting variable overhead variances

- ◆ Spending variance
 - ▲ Actual cost of variable overhead is greater/less than expected, after adjusting for the actual quantity of cost driver used
 - ▲ Used to control variable overhead
- ◆ Efficiency variance
 - ▲ The cost effects of excessive or low use of the particular activity (cost driver)
- ◆ The spending variance is the real control variance for variable overhead



Calculating fixed overhead variances

- ◆ Fixed overhead budget variance
 - ▲ The difference between actual fixed overhead and budgeted fixed overhead

= actual fixed overhead - budgeted fixed overhead

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Calculating fixed overhead variances

- ◆ Fixed overhead volume variance
 - ▲ The difference between budgeted fixed overhead and fixed overhead applied to production
- = budgeted fixed overhead - applied fixed overhead

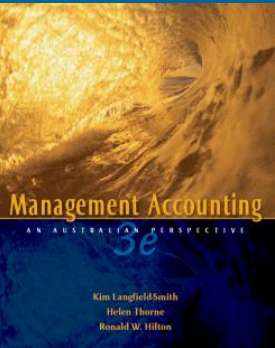
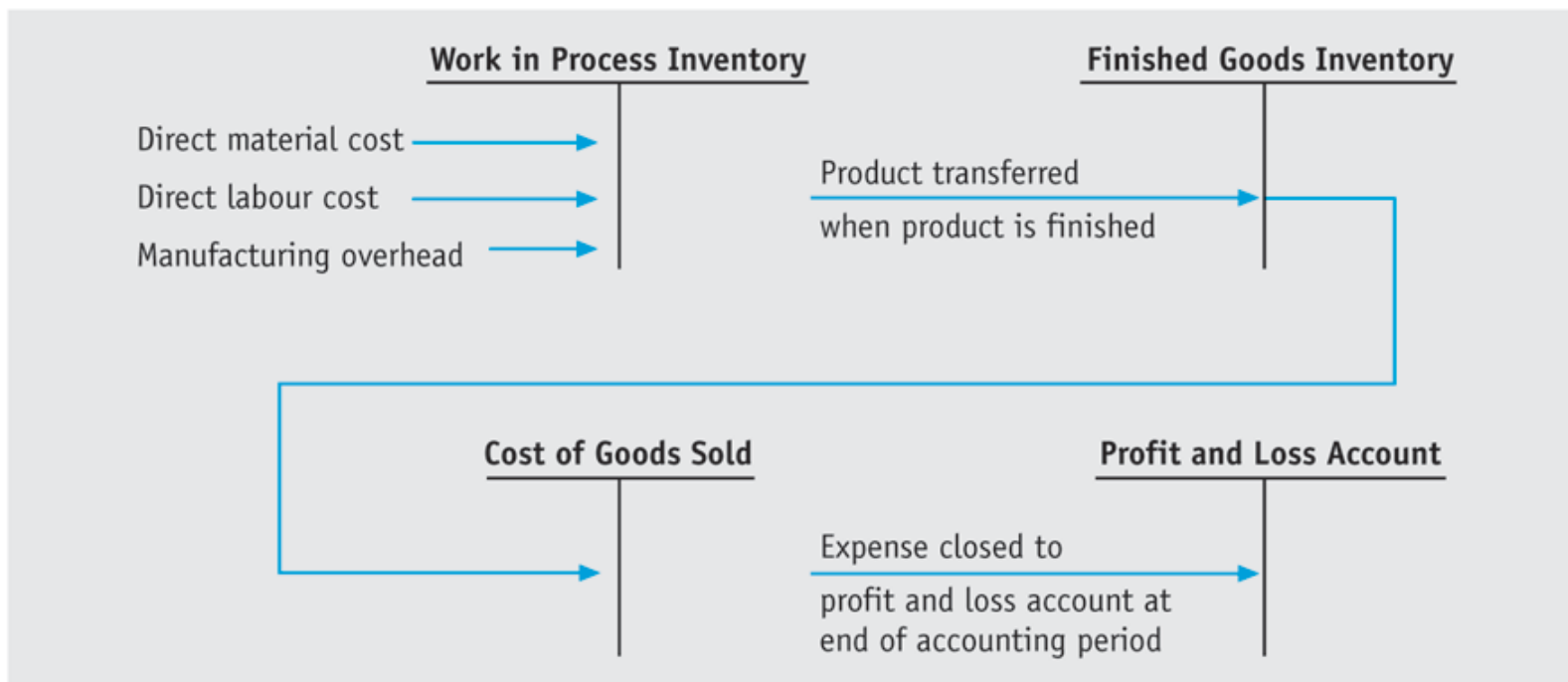


EXHIBIT 10.7 Flow of costs through manufacturing accounts



Interpreting fixed overhead variances

- ◆ Fixed overhead budget variance
 - ▲ Used for control
 - ▲ Assumes fixed overhead will not change as activity varies
- ◆ Fixed overhead volume variance
 - ▲ Standard cost driver allowed for actual output is more/less than the planned level of production
 - ▲ Reconciles the two purposes of costing systems: product costing and cost control

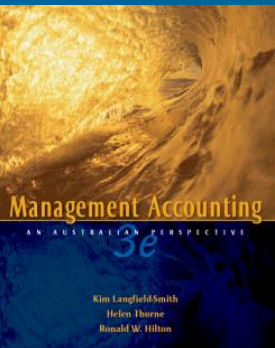





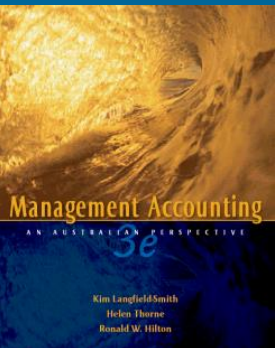
EXHIBIT 11.8 Four-way, three-way and two-way overhead variance analysis, R.M. Williams

	Variable overhead spending variance	Fixed overhead budget variance	Variable overhead efficiency variance	Fixed overhead volume variance
Four-way analysis	\$920 U	\$2100 U	\$600 U	\$2600 F
	 combined spending variance			
Three-way analysis	\$3020 U		\$600 U	\$2600 F
	 combined budget variance			
Two-way analysis		\$3620 U		\$2600 F
	 underapplied overhead \$1020*			

* The underapplied overhead is the difference between the actual overhead incurred (\$31 820) and overhead applied to work in process (\$30 800).

Standard costs for product costing

- ◆ Costs of direct material, direct labour and manufacturing overhead are all charged to inventory at standard costs, not actual costs
- ◆ Variances are closed off at end of accounting period
 - ▲ To cost of goods sold expense, or prorate between WIP, FG and COGS



Criticisms of standard costing

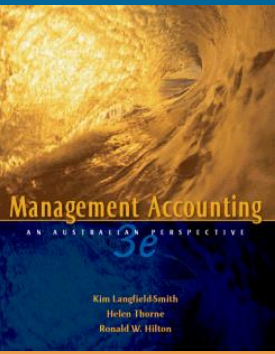
1. Variances are too aggregated and concentrate on consequences rather than the causes of problems
2. Variance reports are too late to be useful
3. Standard costing systems tend to focus too heavily on cost minimisation

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Criticisms of standard costing

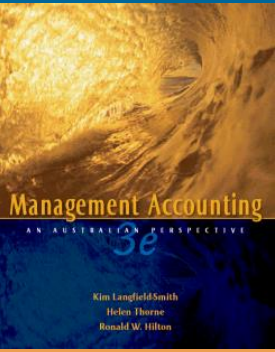
4. Standard costing systems take a departmental perspective rather than a process perspective
5. Too much emphasis is placed on the cost and efficiency of direct labour
6. Overhead variances give limited cost control information

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Criticisms of standard costing

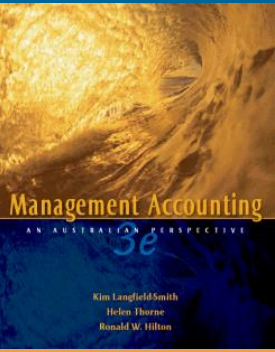
7. Does not explicitly encourage continuous improvement
8. Standard costs become outdated quickly due to shorter product life cycles
9. Standard costing systems do not capture the full costs of materials



Advantages of standard costing

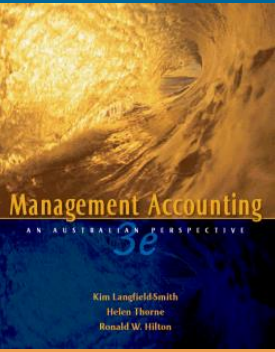
1. Provides a good basis for cost comparisons
2. Enables managers to use management by exception
3. Provides a basis for performance evaluation and determining bonuses

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Advantages of standard costing

4. Participation in setting standards and assigning responsibility can have motivational effects on employees
5. May lead to more stable product costs compared to using actual costs
6. Can be used for external reporting



Activity-based budgeting

- ◆ A process of building up budgets from the major activities of the business
- ◆ Uses principles of ABC to estimate a firm's future demand for resources
- ◆ ABB works in reverse to ABC
 - ▲ Start with analysis of the market, estimate of sales demand, estimate production activities, required level of production and resources

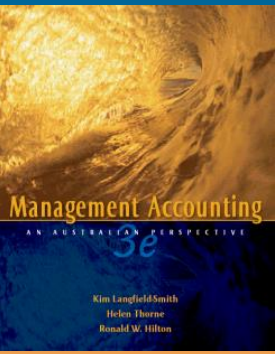
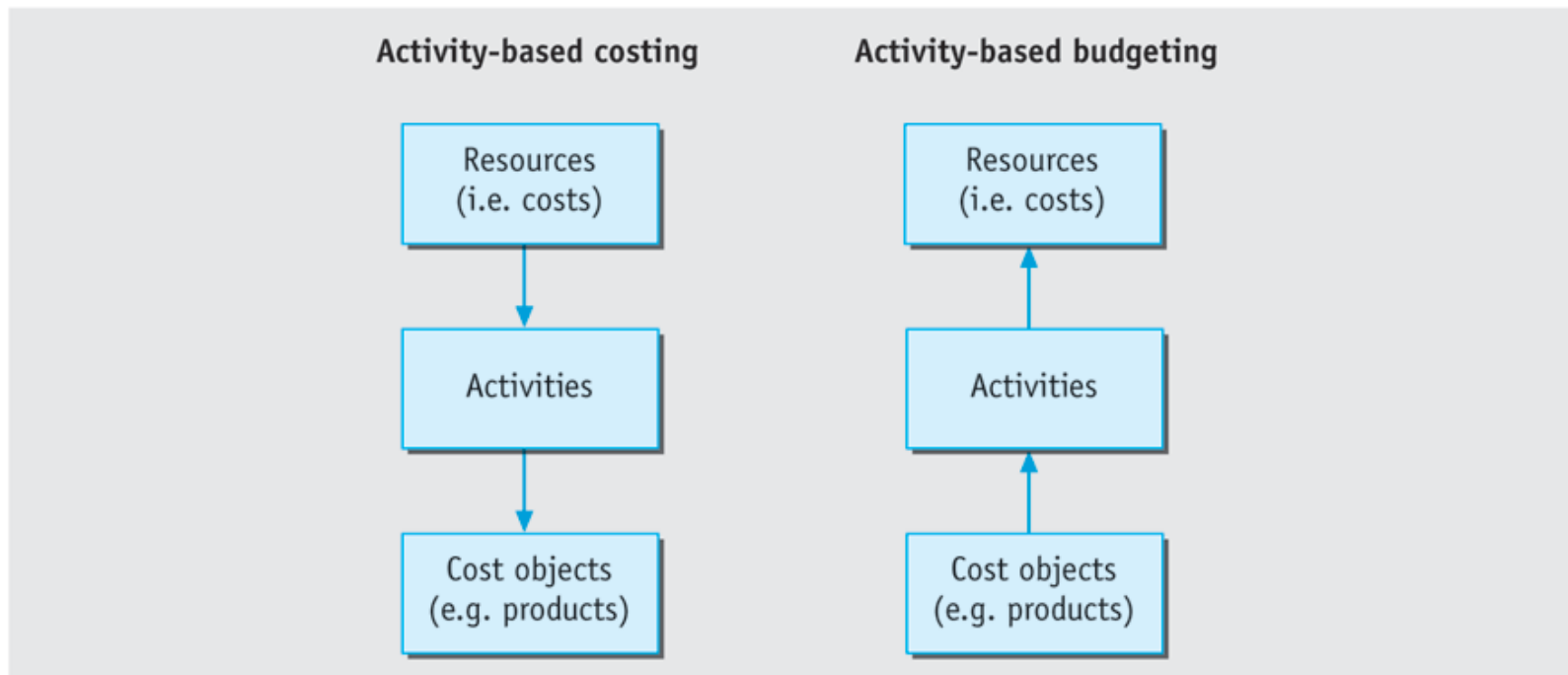
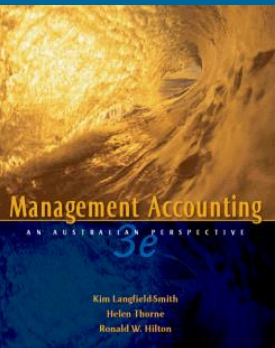
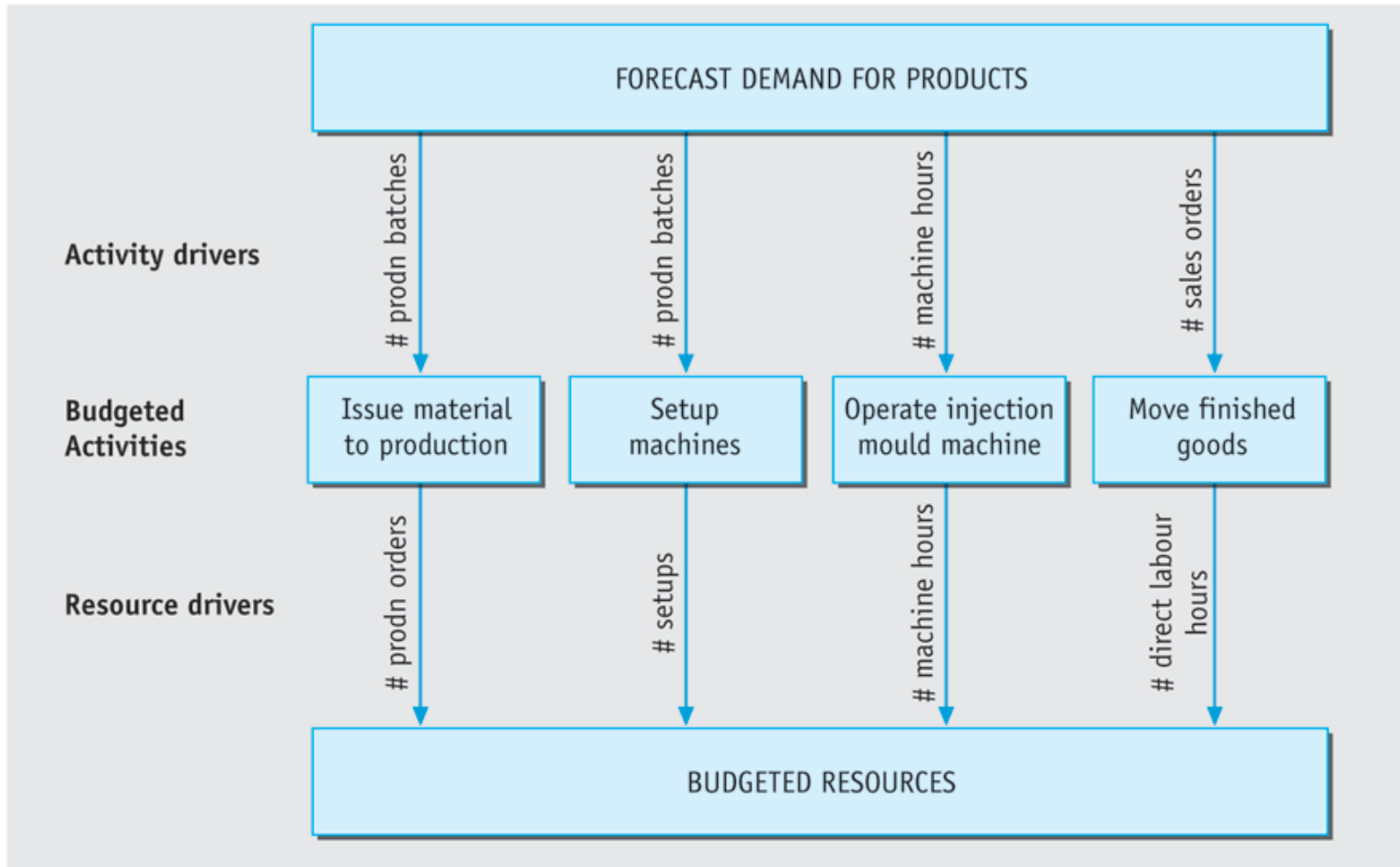


EXHIBIT 11.11 Activity-based costing vs activity-based budgeting



Source: adapted from Cooper & Slagmulder (2000a)

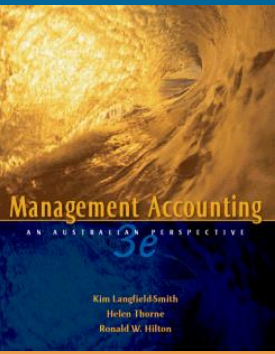
EXHIBIT 11.12 ABB: reversing the ABC system



Activity-based budgeting

- ◆ Inaccuracies in ABB
 1. Spending versus consumption of resources
 - ▲ The cost of unused resources are not included in ABC product costs
 2. Estimates of non-manufacturing activities may be distorted
 3. Shared resources may not be accounted for accurately
 4. Information requirements for ABB are high compared to traditional budgeting systems

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Activity-based budgeting

- ◆ Performance evaluation under ABB
 - ▲ Need to compare actual activity costs to budgeted costs
 - ▲ Budgeted costs should be based on flexible budgets which show the budgeted cost of activities as various cost drivers change
 - ▲ Such flexible budgets have the potential to be very complex

