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Learning Material for VM New Challenges for Management Accounting.

Chapter 5: Job Costing.

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Chapter 5: Job Costing

Learning objectives

1. Describe the approaches to evaluating and implementing job-costing systems
2. Outline the seven-step approach to normal costing
3. Distinguish actual costing from normal costing
4. Track the flow of costs in a job-costing system
5. Dispose of under- or overallocated manufacturing overhead costs at the end of the fiscal year using alternative methods
6. Apply variations from normal costing



Key words

actual costing, cost-allocation base, cost pool, job cost record, job cost sheet, job-costing system, labour time record, materials requisition record, normal costing, manufacturing overhead allocated, process-costing system, underabsorbed/underallocated/ underapplied indirect costs, overabsorbed/overallocated/overapplied indirect costs



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5.1 General Approach to Job Costing



In a **job-costing system**, the cost object is a unit or multiple units of a distinct product or service called a job. Each job generally uses different amounts of resources. The product or service is often a single unit. Because the products and services are distinct, job-costing systems accumulate costs separately for each product or service.

Managers use the **five-step decision-making process** while making decisions that relate to costing of a particular job.

1. Under the first step, management **identifies the problems and uncertainties** relating to the cost of completing the job. The management also needs to **anticipate the price** that the competitors are likely to bid.
2. Once the uncertainties relating to the costing of the job are identified, the management must obtain **relevant information relating to the job**. Such information will include the quantitative and qualitative considerations that the company must keep in mind while taking the decision.
3. After obtaining relevant information, the management must make **predictions about the future implications of working on the job**. Such predictions may include estimating the rise in price of raw materials that are being used in the job. Qualitative factors such as the risk involved in work on the job should also be predicted.
4. Once the predictions are made, managers must **make the decisions** by considering various alternatives relating to the job.
5. Once the decision is taken, managers must **implement the decision and evaluate the performance** on a continuous basis.

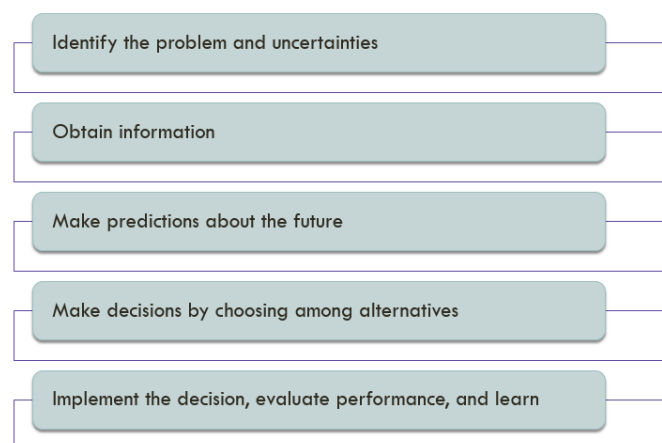


Figure 5.1 Decision-making process under job-costing

Source: DATAR, S. M., RAJAN, M. V. Managerial Accounting, Making Decisions and Motivating Performance

5.2 Actual Costing

Actual costing is one of the forms of a job-order costing system. It is a costing system that traces direct costs to a cost object based on the actual direct-cost rates times the actual quantities of the direct-cost inputs.

- It allocates indirect costs based on the actual indirect-cost rates times the actual quantities of the cost-allocation bases.

$$\text{Actual indirect cost rate} = \frac{\text{Actual annual indirect costs}}{\text{Actual annual quantity of the cost allocation base}}$$

- Even though actual-costing systems calculate the actual costs of jobs, these are not commonly found in practice. This is because calculating actual *indirect* costs in a timely manner involves a few problems.
 - ⇒ Direct costs can be easily traced as and when they are incurred. However, actual indirect costs, such as electricity cost, can be determined only at the end of a fiscal period. For decision-making purposes, it is not feasible for managers to wait that long to learn the costs of various jobs.
 - ⇒ Managers also need ongoing cost information about jobs because it helps managers bid on new jobs that come up for bid while the old jobs are in process.

Indirect-cost rates are usually calculated for a long period, say a year instead of a month.

There are two reasons for using longer periods to calculate indirect-cost rate:

1. **The numerator reason (indirect-cost pool):** The shorter the period, the greater the influence of seasonal patterns on the amount of costs. Levels of total indirect costs are also affected by non-seasonal erratic costs. Pooling all indirect costs together over the course of a full year and calculating a single annual indirect-cost rate helps smooth some of the erratic bumps in costs associated with shorter periods.
2. **The denominator reason (quantity of the cost-allocation base):** Another reason for using longer periods is to avoid spreading monthly fixed indirect costs over fluctuating levels of monthly output and fluctuating quantities of the cost-allocation base.

5.3 Normal Costing

The difficulty of calculating actual indirect-cost rates on a weekly or monthly basis means managers cannot calculate the actual costs of jobs as they are completed. However, managers want a close approximation of the costs of various jobs regularly during the year, not just at the end of the fiscal year. Because of the need for immediate access to job costs, few companies wait to allocate overhead costs until the end of the accounting year when the actual manufacturing overhead is finally known. Instead, a predetermined or budgeted indirect-cost rate is calculated for each cost pool at the beginning of a fiscal year, and overhead costs are allocated to jobs as work progresses.

The budgeted indirect-cost rate for each cost pool is calculated as follows:

$$\text{Budgeted indirect cost rate} = \frac{\text{Budgeted annual indirect cost}}{\text{Budgeted annual quantity of the cost – allocation base}}$$

Using budgeted indirect-cost rates gives rise to normal costing. **Normal costing** is a costing system that:

- traces direct costs to a cost object by using the actual direct-cost rates times the actual quantities of the direct-cost inputs and
- allocates indirect costs based on the budgeted indirect-cost rates times the actual quantities of the cost-allocation bases.

Normal costing uses a seven-step approach to assign costs to an individual job.

1. The first step relates to **identifying the job** that is the chosen cost object. Management accountants gather information to cost jobs through source documents.

A source document is an **original record** that supports journal entries in an accounting system. One of the source documents is a **job-cost record**, also called a **job-cost sheet**. It records and accumulates all the costs assigned to a specific job, starting when work begins.

Figure 5.2 shows an example of a job-cost record.

| Home Insert Page Layout Formulas Data Review View | | | | | | |
|---|---|-----------------|----------------------|-----------------|------------------------|-----------------|
| 1 | A | B | C | D | E | |
| 2 | JOB-COST RECORD | | | | | |
| 3 | JOB NO: | WPP 298 | | CUSTOMER: | Western Pulp and Paper | |
| 4 | Date Started: | Feb. 6, 2012 | | Date Completed: | Feb. 29, 2012 | |
| 5 | | | | | | |
| 6 | DIRECT MATERIALS | | | | | |
| 7 | Date | Materials | | Quantity | Unit | Total |
| 8 | Received | Requisition No. | Part No. | Used | Cost | Costs |
| 9 | Feb. 6, 2012 | 2012: 198 | MB 468-A | 8 | \$14 | \$ 112 |
| 10 | Feb. 6, 2012 | 2012: 199 | TB 267-F | 12 | 63 | 756 |
| 11 | | | | | | • |
| 12 | | | | | | • |
| 13 | Total | | | | | <u>\$ 4,606</u> |
| 14 | | | | | | |
| 15 | DIRECT MANUFACTURING LABOR | | | | | |
| 16 | Period | Labor Time | Employee | Hours | Hourly | Total |
| 17 | Covered | Record No. | No. | Used | Rate | Costs |
| 18 | Feb. 6-12, 2012 | LT 232 | 551-87-3076 | 25 | \$18 | \$ 450 |
| 19 | Feb. 6-12, 2012 | LT 247 | 287-31-4671 | 5 | 19 | 95 |
| 20 | | | | • | | • |
| 21 | | | | • | | • |
| 22 | Total | | | <u>88</u> | | <u>\$ 1,579</u> |
| 23 | | | | | | |
| 24 | MANUFACTURING OVERHEAD* | | | | | |
| 25 | | Cost Pool | | Allocation Base | Allocation- | Total |
| 26 | Date | Category | Allocation Base | Quantity Used | Base Rate | Costs |
| 27 | Feb. 29, 2012 | Manufacturing | Direct Manufacturing | 88 hours | \$40 | <u>\$ 3,520</u> |
| 28 | | | Labor-Hours | | | |
| 29 | | | | | | |
| 30 | Total | | | | | <u>\$ 3,520</u> |
| 31 | TOTAL MANUFACTURING COST OF JOB | | | | | |
| 32 | | | | | | <u>\$ 9,705</u> |
| 33 | | | | | | |
| 34 | *The Robinson Company uses a single manufacturing-overhead cost pool. The use of multiple overhead cost pools | | | | | |
| 35 | would mean multiple entries in the "Manufacturing Overhead" section of the job-cost record. | | | | | |
| 36 | | | | | | |

Figure 5.2 Job-Cost Record

Source: DATAR, S. M., RAJAN, M. V. Managerial Accounting, Making Decisions and Motivating Performance

2. **The second step** is to identify the direct costs of the job.

Direct materials: The basic source document that contains information about the cost of direct materials used on a specific job and in a specific department is the materials-requisition record. The total cost of direct materials used is determined from this document and shown on the job-cost record of a specific job.

Direct labor: The source document for tracing direct manufacturing labor cost is a labor-time sheet, which contains information about the amount of labor time used for a specific job in a specific department.

All costs other than direct materials and direct manufacturing labor are classified as **indirect costs**.

Figure 5.3 shows an example of a job-cost record.

| MATERIALS-REQUISITION RECORD | | | | |
|----------------------------------|------------------|-----------|--------------|------------|
| Materials-Requisition Record No. | | 2012: 198 | | |
| Job No. | WPP 298 | Date: | FEB. 6, 2012 | |
| Part No. | Part Description | Quantity | Unit Cost | Total Cost |
| | Metal | | | |
| MB 468-A | Brackets | 8 | \$14 | \$112 |
| Issued By: B. Clyde | | Date: | Feb. 6, 2012 | |
| Received By: L. Daley | | Date: | Feb. 6, 2012 | |

| LABOR-TIME SHEET | | | | | | | | |
|-------------------------------|---|---------------------|---|--------------------------|-------------------------|---|----|-------|
| Labor-Time Record No: | | LT 232 | | | | | | |
| Employee Name: | | G. L. Cook | | Employee No: 551-87-3076 | | | | |
| Employee Classification Code: | | Grade 3 Machinist | | | | | | |
| Hourly Rate: | | \$18 | | | | | | |
| Week Start: | | Feb. 6, 2012 | | | Week End: Feb. 12, 2012 | | | |
| Job. No. | M | T | W | Th | F | S | Su | Total |
| WPP 298 | 4 | 8 | 3 | 6 | 4 | 0 | 0 | 25 |
| JL 256 | 3 | 0 | 4 | 2 | 3 | 0 | 0 | 12 |
| Maintenance | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 3 |
| Total | 8 | 8 | 8 | 8 | 8 | 0 | 0 | 40 |
| Supervisor: R. Stuart | | Date: Feb. 12, 2012 | | | | | | |

Figure 5.3 Materials-Requisition Record and Labor-Time Sheet

Source: DATAR, S. M., RAJAN, M. V. Managerial Accounting, Making Decisions and Motivating Performance

3. The next step is to **select the cost-allocation bases** to use for allocating indirect costs to the job.

Indirect manufacturing costs are costs that are necessary to do a job but that cannot be traced to a specific job. Managers must allocate these costs to jobs in a systematic way because these costs cannot be traced to a specific job and different jobs require different quantities of indirect resources. Companies often use **multiple cost-allocation bases** to allocate indirect costs because different indirect costs have different cost drivers. This step involves choosing the most appropriate allocation base or bases for the indirect costs incurred by the job.

4. Once the cost-allocation bases are selected, the **indirect costs associated with each cost-allocation base** is identified. This is **the fourth step** in a job-costing system. Companies may create **single or multiple cost pools** representing indirect costs that are difficult to trace directly to individual jobs.

5. In **the fifth step**, managers compute the rate per unit of each cost-allocation base used to allocate indirect costs to the job. For each cost pool, the budgeted indirect-cost rate is calculated as:

$$\text{Budgeted manufacturing overhead rate} = \frac{\text{Budgeted manufacturing overhead costs}}{\text{Budgeted total quantity of cost – allocation base}}$$

6. Once the overhead rates are calculated, **indirect costs of a job** are calculated by multiplying the actual quantity of each different allocation base (one allocation base for each cost pool) associated with the job by the budgeted indirect cost rate of each allocation base.

7. In the **final step** of job-costing, the **total cost of the job** is determined by adding all direct and indirect costs assigned to the job. Finally, managers **compare** the bid price for the job with the total manufacturing costs of the job and calculate **the gross margin** gained by accepting the project.

5.4 Distinguish Actual Costing from Normal Costing

Both actual costing and normal costing trace direct costs to jobs in the same way because source documents identify the actual quantities and actual rates of direct materials and direct manufacturing labor for a job as the work is being done. The only difference between costing a job with normal costing and actual costing is that **normal costing uses budgeted indirect-cost rates, whereas actual costing uses actual indirect-cost rates calculated annually at the end of the year.**

| | Actual Costing | Normal Costing |
|-----------------------|---|---|
| Direct Costs | <i>Actual direct-cost rates</i> × actual quantities of direct-cost inputs | <i>Actual direct-cost rates</i> × actual quantities of direct-cost inputs |
| Indirect Costs | <i>Actual indirect-cost rates</i> × actual quantities of cost-allocation bases | <i>Budgeted indirect-cost rates</i> × actual quantities of cost-allocation bases |

Figure 5.4 Comparison of actual and normal costing systems

Source: DATAR, S. M., RAJAN, M. V. Managerial Accounting, Making Decisions and Motivating Performance

The seven-step approach used in **actual costing** to assign costs to an individual job is not much different from the **normal costing** approach.

- Steps 1 and 2 are the same in both normal and actual costing.
- In step 3, the cost-allocation base is selected and the *actual* quantity of the base is noted, unlike the *estimated* amount in normal costing.
- In step 4, all the *actual* manufacturing costs are grouped in their respective cost pools.
- Step 5 calculates the **actual indirect-cost rate** as:

$$\text{Actual manufacturing overhead rate} = \frac{\text{Actual annual manufacturing overhead costs}}{\text{Actual annual quantity of the cost allocation base}}$$

- Step 6 involves allocation of the manufacturing overhead as:

$$\begin{aligned}
 & \text{Manufacturing overhead costs allocated to cost object} \\
 & = \text{Actual manufacturing overhead rate} \\
 & \times \text{Actual quantity of direct manufacturing labor hours}
 \end{aligned}$$

- In the final step of actual costing, the total cost of the job is determined by adding all actual direct and indirect costs assigned to the job.

5.5 The Flow of Costs in a Job Costing System

This section explains the flow of inventoriable costs from the purchase of materials and other manufacturing inputs, to their conversion into work-in-process and finished goods, to the sale of finished goods.

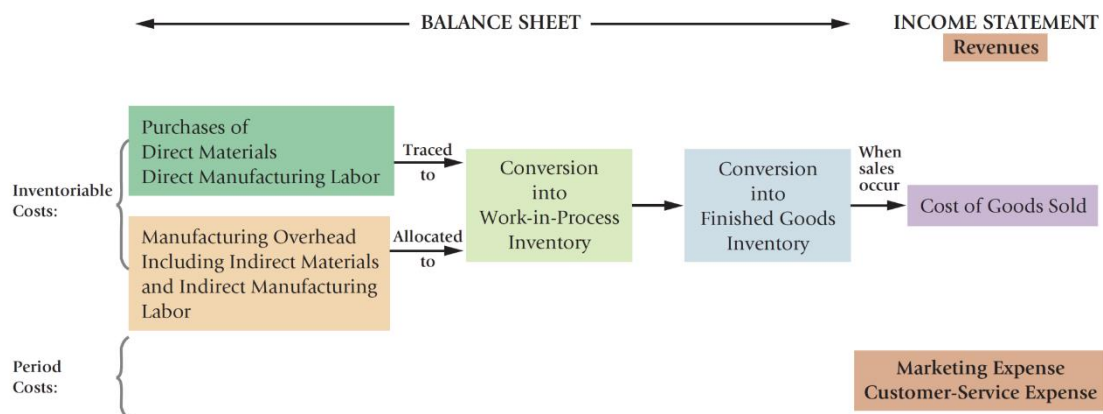


Figure 5.5 *Flow of costs in job costing*

Source: BHIMANI, A. et al. Management and Cost Accounting

Direct materials used and direct manufacturing labor become part of work-in-process inventory on the balance sheet. This is because direct manufacturing labor transforms direct materials into another asset, work-in-process inventory.

Manufacturing overhead costs are first accumulated in a manufacturing overhead account and then allocated to individual jobs. As manufacturing overhead costs are allocated, they become part of work-in-process inventory.

As individual jobs are completed, work-in-process inventory becomes another balance sheet asset, finished goods inventory. Only when finished goods are sold, is the expense of cost of goods sold recognized in the income statement and matched against revenues earned.

Period costs do not create any assets on the balance sheet because they are not incurred to transform materials into a finished product. Instead, they are expensed in the income statement, as they are incurred, to best match revenues.

A job-costing system has a separate job-cost record for each job. A summary of the job-cost record is typically found in a subsidiary ledger. The general ledger account Work-

in-Process Control presents the total of separate job-cost records pertaining to all unfinished jobs. The job-cost records and Work-in-Process Control account track job costs from when jobs start until they are complete. When jobs are completed or sold, they are recorded in the finished goods inventory records of jobs in the subsidiary ledger. The general ledger account Finished Goods Control records the total of these separate job-cost records for all finished jobs completed and for all jobs sold.

Managers use budgeted indirect-cost rates and normal costing instead of actual costing because indirect costs can be assigned to individual jobs on an ongoing and timely basis, rather than only at the end of the fiscal year when actual costs are known. **At the end of the year**, budgeted rates are unlikely to equal actual rates because they are based on estimates made up to 12 months before actual costs are incurred. Therefore, managers need to make adjustments for the difference between indirect costs allocated and indirect costs actually incurred.

- **Underallocated indirect costs** occur when the allocated amount of indirect costs in an accounting period is less than the actual amount.
- **Overallocated indirect costs** occur when the allocated amount of indirect costs in an accounting period is greater than the actual amount.

Underallocated (overallocated) indirect costs are also called underapplied (overapplied) indirect costs and underabsorbed (overabsorbed) indirect costs.

There are three main approaches to adjust the underallocated or overallocated overhead. These are:

1. The **adjusted allocation-rate approach** – restates all overhead entries in the general ledger and job-cost records to represent actual cost rates rather than budgeted cost rates. The result is that at year end, every job-cost record and finished goods record—as well as the ending Work-in-Process Control, Finished Goods Control, and Cost of Goods Sold accounts—represent *actual* manufacturing overhead costs incurred. The adjusted allocation-rate approach yields the benefits of both the timeliness and convenience of normal costing during the year and the allocation of actual manufacturing overhead costs at year-end.
2. **Proration approach** spreads underallocated or overallocated overhead among ending work-in-process inventory, finished goods inventory, and cost of goods sold. Material inventory is excluded from this process as no manufacturing costs have been allocated to it. The under/overallocated overhead is allocated on the basis of *total amount of manufacturing overhead allocated (before proration.)* This will result in allocating manufacturing overhead based on actual manufacturing overhead costs.

This method will report the same ending balances in the general ledger as the adjusted allocation-rate approach. However, unlike the adjusted allocation-rate approach, no adjustments from budgeted to actual manufacturing overhead rates are made in the individual job-cost records. The objective of the proration approach is to only adjust the general ledger to actual manufacturing overhead rates for purposes of financial reporting.

3. Under the **writeroff approach**, the total under- or overallocated manufacturing overhead is included in this year's Cost of Goods Sold.

The choice of adjustment approach is guided by the amount of underallocation or overallocation and the purpose of the adjustment.

- If the purpose of the adjustment is to state balance sheet and income statements based on actual rates and the amount of underallocation or overallocation is **big**, relative to total operating income, then managers prefer to use the **proration method**. This is because proration is the most accurate method of allocating actual manufacturing overhead costs to the general ledger accounts.
- If the purpose of the adjustment is to state balance sheet and income statements based on actual manufacturing overhead rates and the amount of underallocation or overallocation is **small**, relative to total operating income, then managers prefer to use the **writeroff to cost of goods sold expense method**. It is because it is a good approximation to the more accurate proration method.
- If the purpose of the adjustment is to provide an **accurate record** of actual individual job costs for profitability analysis and learning for managing costs and bidding on future jobs, then managers prefer to use the **adjusted allocation-rate method**. It is because it makes adjustments in individual job records in addition to the general ledger accounts.

5.6 Variations from Normal Costing: Service Sector

Job costing is also very useful in service organizations where each service is a job. Like costing for manufacturing companies, direct costs in services companies can be traced to jobs and a cost-allocation base, such as number of professional labor-hours, is used to allocate the indirect costs.

In some **service organizations**, actual direct-labor costs, the largest component of total costs, can be difficult to trace to jobs as they are completed. In situations such as these, a company needing timely information during the progress of an audit will use budgeted rates for some direct costs and budgeted rates for indirect costs. All budgeted rates are calculated at the start of the fiscal year. In contrast, normal costing uses actual cost rates for all direct costs and budgeted cost rates only for indirect costs.

The mechanics of using budgeted rates for direct costs are similar to the methods employed when using budgeted rates for indirect costs in normal costing.

Summary



The building blocks of a **costing system** are cost object, direct costs, indirect costs, cost pool and cost-allocation base. Costing systems aim to report cost numbers that reflect the way that chosen cost objects (such as products, services or customers) use the resources of an organisation.

Job-costing systems assign costs to a distinct unit of a product or service. In contrast, process-costing systems assign costs to masses of similar units and calculate unit costs on an average basis. These two costing systems are best viewed as opposite ends of a continuum. The costing systems of many companies combine some elements of both job costing and process costing.

A general approach to job costing involves identifying (a) the job, (b) the direct-cost categories, (c) the indirect-cost categories, (d) the cost-allocation bases, (e) the cost-allocation rates, and (f) adding all direct and indirect costs.

Actual costing and **normal costing** differ in their use of actual or budgeted indirect-cost rates.

Both methods use actual quantities of direct-cost inputs and actual quantities of the allocation bases for allocating indirect costs.

Costing systems aim to report cost numbers that reflect the way chosen cost objects use the resources of an organisation. This is the case for service, merchandising and manufacturing environments.

Three key source documents in a job-costing system are a **job cost record**, a **materials requisition record** and a **labour time record**.

The transactions in a job-costing system in manufacturing track (a) the acquisition of materials and other manufacturing inputs, (b) their conversion into work in progress, (c) their eventual conversion into finished goods, and (d) the sale of finished goods. Each of the stages (a) to (d) in the manufacture/sale cycle can be represented by journal entries in the costing system.

The theoretically correct alternative to disposing of under-or overallocated indirect costs is to prorate that amount on the basis of the total amount of the allocated indirect cost in the ending balances of stocks and cost of goods sold. For simplicity, many organisations write-off any such amount to Cost of Goods Sold.

References



ATRILL, P., McLANEY, E. *Management Accounting for Decision Makers*. 9th ed. Harlow: Pearson, 2019. ISBN 978-1-292-20458-1.

BHIMANI, A. et al. *Management and Cost Accounting*. 7th ed. Harlow: Pearson, 2019. ISBN 978-1-292-23271-3.

BRAGG, M. S. *Cost Accounting Fundamentals. Essential Concepts and Examples*. 5th edition. Centennial, Colorado: AccountingTools, Inc., 2016. ISBN 978-1-938910-69-2.

BRAUN, K. W., TIETZ, W. M. *Managerial Accounting*. 4th ed. Harlow: Pearson, 2015. ISBN 978-0134128528.

DATAR, S. M., RAJAN, M. V. *Managerial Accounting: Decision Making and Motivating Performance*. 1st ed. Harlow: Pearson, 2015. ISBN: 978-0137024872.

DRURY, C. *Cost and Management Accounting*. 8th ed. Hampshire: Cengage Learning EMEA, 2015. ISBN 978-1-4080-9388-7.

DRURY, C. *Management and Cost Accounting*. 9th ed. Hampshire: Cengage Learning EMEA, 2016. ISBN 978-1-4080-9393-1.

PROCTOR, R. *Managerial Accounting. Decision Making and Performance Management*. 4th ed. Essex: Pearson, 2012. ISBN 978-0-273-76448-9.

WEETMAN, P. *Management Accounting*. 2nd ed. Financial Times/ Prentice Hall, 2010. ISBN 978-0273718451.