

Chapter 1

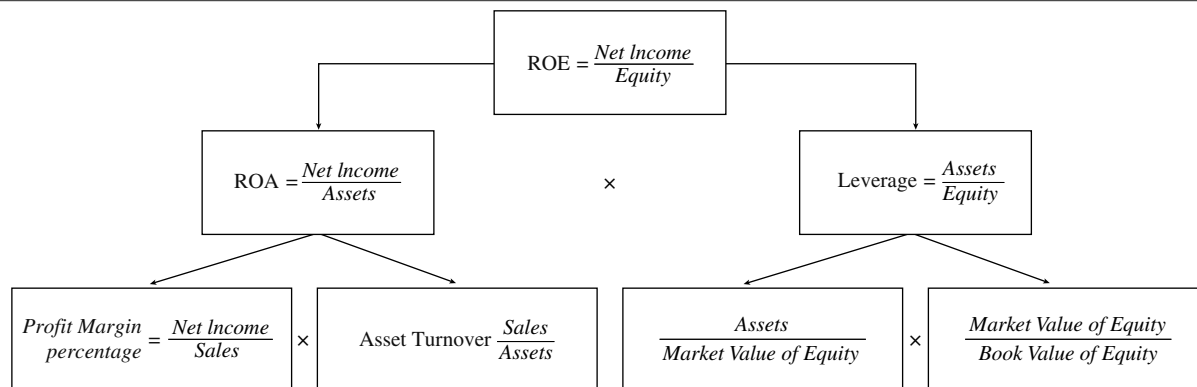
APPENDIX 1A – EVALUATING FIRM PERFORMANCE (ONLINE)

In this appendix, we provide a structured approach to evaluating firm performance. This approach can be used for many purposes. For example, it might be used to evaluate the potential performance of a proposed or completed merger. It might also be used as an analytical tool applied by auditors to evaluate the performance of an existing client. Individuals could use the approach as an initial step in determining investment opportunities. Depending on the objective of your analysis, a good starting point is to compute the return on equity (ROE) for the most recent years available. The structured approach decomposes this ratio into several commonly used ratios, which are subsequently decomposed further. The overall approach is summarized in Illustration A1-1.

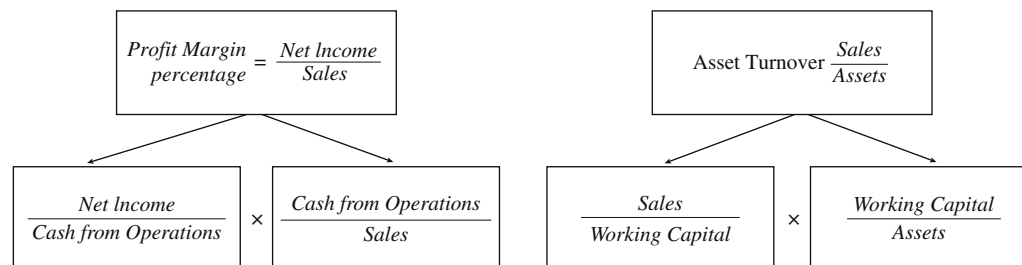
ILLUSTRATION A1-1

Structured Approach to Evaluate Firm Performance

Panel A: Decomposing Return on Equity (ROE)



Panel B: Decomposing the Profit Margin Percentage Using Cash from Operations and Decomposing the Asset Turnover Ratio Using Working Capital



In this textbook and in our structured approach, we use the following definition of ROE (more complex definitions of ROE can be applied with similar results):

$$\text{ROE} = \frac{\text{Net Income}}{\text{Equity}} \quad (1)$$

Next this ratio is decomposed into two components: Return on Assets (ROA) and a Leverage ratio. These ratios are defined as:

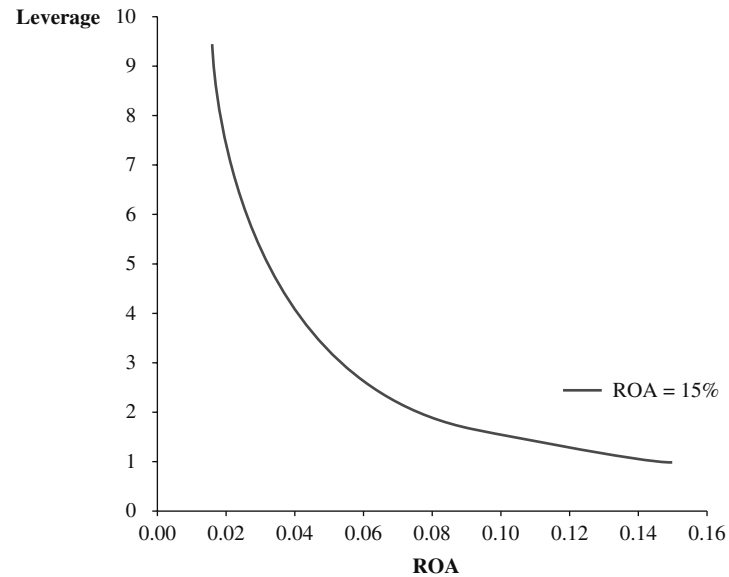
$$\text{ROA} = \frac{\text{Net Income}}{\text{Assets}} \quad (2)$$

$$\text{Leverage} = \frac{\text{Assets}}{\text{Equity}} = \frac{\text{Equity} + \text{Liabilities}}{\text{Equity}} \quad (3)$$

If you multiply these two ratios, Assets cancels out and you get ROE. Thus $\text{ROE} = \text{ROA} \times \text{Leverage}$. Assets divided by equity is considered a leverage ratio because Assets are equal to Liabilities plus Equity. Thus if the firm has more liabilities, this ratio is greater. The advantage of decomposing the ratios is that the ratio of interest can be graphed as a function of its decomposition. The graph of the decomposition of ROE is shown in Illustration A1-2.

ILLUSTRATION A1-2

ROE (15%) by ROA and Leverage



In Illustration A1-2, the solid line represents all possible combinations of ROA and leverage that equal an ROE of 15%. ROE amounts greater than 15% would appear above the solid line and ROE amounts less than 15% would appear below the solid line in the illustration. This illustration dramatizes the fact that if you pick two points on the solid line, they represent two companies with the same ROE but for very different reasons. A firm on the lower part of the solid line achieved its ROE with a high ROA with low amounts of leverage. A firm on the upper portion of the solid line achieved its ROE by using more debt in the capital structure but earning a lower ROA.

ROA Decomposition

The next decomposition breaks down the ROA ratio. ROA is decomposed into two components: the Profit Margin Percentage and an Asset Turnover ratio. These ratios are defined as:

$$\text{Profit Margin Percentage} = \frac{\text{Net Income}}{\text{Sales}} \quad (4)$$

$$\text{Asset Turnover} = \frac{\text{Sales}}{\text{Assets}} \quad (5)$$

Again note that if you multiply these two ratios, Sales cancels out and you obtain the ROA ratio ($\text{ROA} = \text{Profit Margin} \times \text{Asset Turnover}$). The graph of the decomposition of ROA is shown in Illustration A1-3.

In Illustration A1-3, the solid line represents all possible combinations of the Asset Turnover ratio and Profit Margin percentage that equal an ROA of 10%. ROA amounts greater than 10% would appear above the solid line and ROA amounts less than 10% would appear below the solid line in the illustration. Thus, if you pick two widely spaced points on the solid line, they would represent two companies with the same ROA but for very different reasons. A firm on the lower part of the solid line achieved its ROA with a high profit margin but without generating a lot of revenues per dollar of assets. A firm on the upper portion of the solid line achieved its ROA by generating more sales per dollar of assets invested while earning a lower profit margin. As noted in the illustration, a higher profit margin may indicate a less competitive industry. Alternatively, it might indicate high profit margins resulting from barriers to entry in that industry, such as a very capital-intensive industry. Higher profit margins could be due to regulatory constraints that prevent other firms from entering the market.

Decomposing Leverage

The next decomposition breaks down the leverage ratio. Interpreting leverage goes beyond relying on book value to debt ratios. In measuring the level of debt it is important to consider the market value of the firm's equity. Therefore, leverage is decomposed into two

ILLUSTRATION A1-3

ROA (10%) by Profit Margin % and Asset Turnover

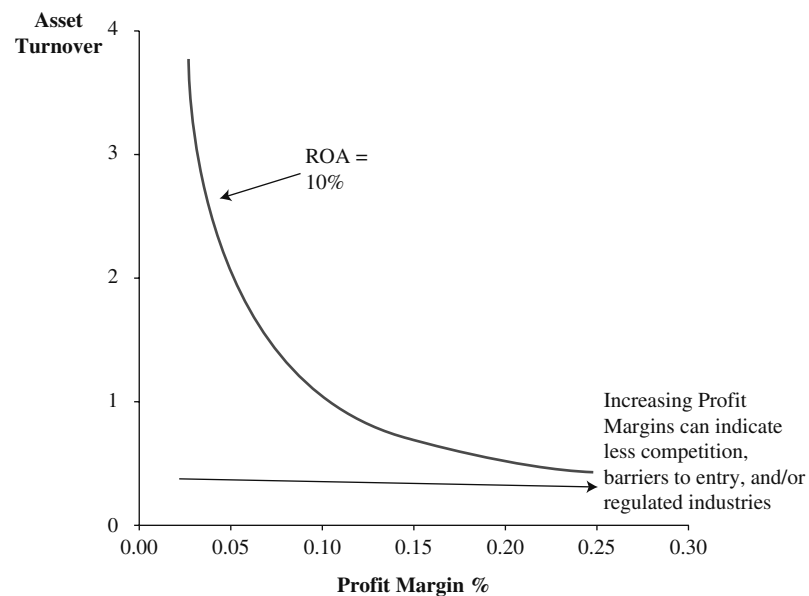
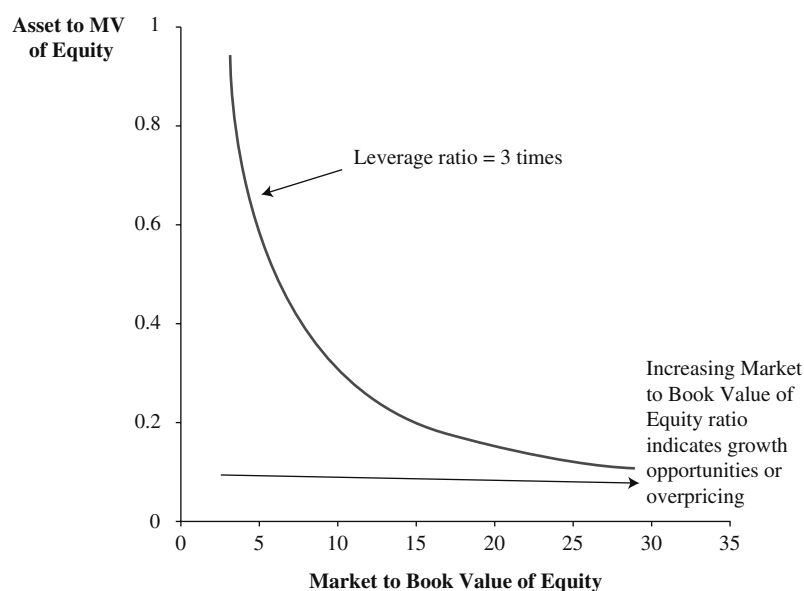


ILLUSTRATION A1-4**Leverage as Function of Asset/MVE and Market to Book Value of Equity**

components: the Asset to Market Value of Equity and the Market Value of Equity to Book Value of Equity (market to book ratio). These ratios are defined as:

$$\text{Asset to Market Value Percentage} = \frac{\text{Assets}}{\text{Market Value of Equity}} \quad (6)$$

$$\text{Market to Book Ratio} = \frac{\text{Market Value of Equity}}{\text{Book Value of Equity}} \quad (7)$$

Again note that if you multiply these two ratios, Market Value cancels out and you obtain the leverage ratio (Leverage = Asset to Market Value Percentage $\times$ Market to Book Ratio). The graph of the decomposition of leverage is shown in Illustration A1-4.

Increasing market to book ratios often indicates increased growth opportunities for the firm, but could alternatively indicate overpricing. Thus, care must be taken in evaluating changes in these ratios.

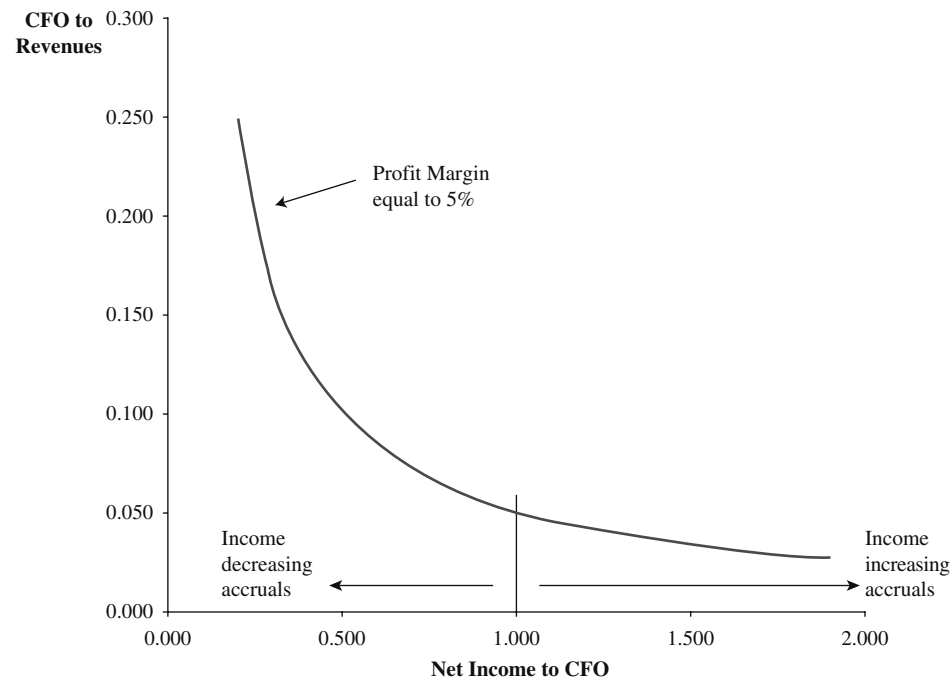
Decomposing the Profit Margin and the Asset Turnover Ratios

Because the income statement is prepared on an accrual basis, further analysis is needed to incorporate the firm's cash flow position. This decomposition examines the size of the firm's accruals and whether they increase or decrease a firm's earnings. Also, the decomposition takes into account the amount of cash from operations (CFO) that is generated by the reported level of revenues. The profit margin is decomposed into two components: Net Income to Cash from Operations and Cash from Operations to Total Revenues. These ratios are defined as:

$$\text{Asset Net Income to Cash from Operations} = \frac{\text{Net Income}}{\text{Cash from Operations}} \quad (8)$$

$$\text{Cash from Operations to Revenues} = \frac{\text{Cash from Operations}}{\text{Revenues}} \quad (9)$$

The asset turnover ratio is decomposed using the firm's working capital (current assets less current liabilities). Working capital measures the firm's liquidity; changes in working

ILLUSTRATION A1-5**Profit Margin (5%) Decomposition**

capital might indicate growth or alternatively could be a precursor to liquidity problems if the firm is struggling to sell its inventories or to collect its receivables, for example. The decomposition of the asset turnover ratio follows:

$$\text{Sales to Working Capital} = \frac{\text{Sales}}{\text{Working Capital}} \quad (10)$$

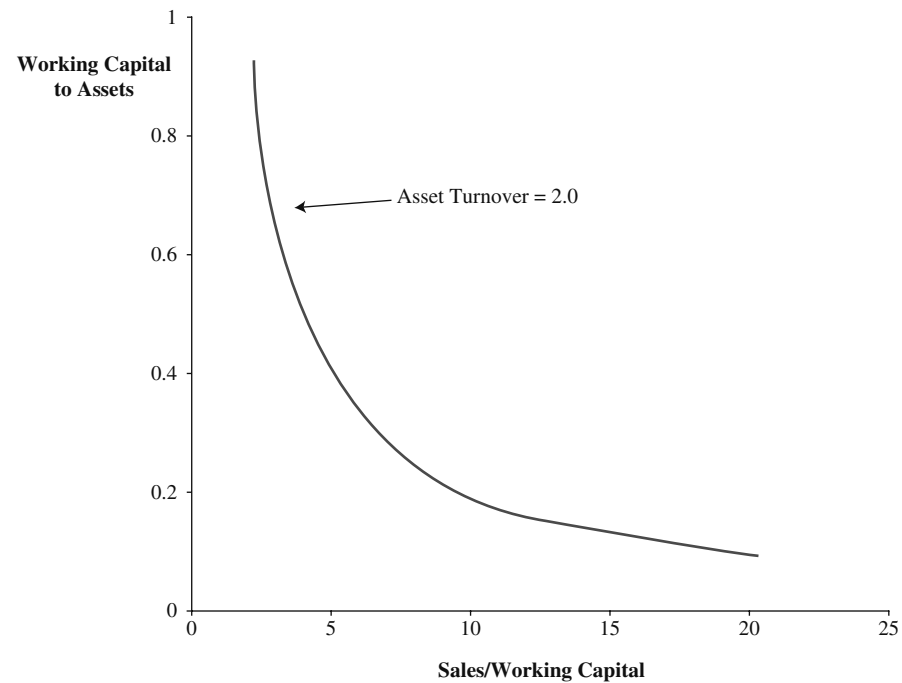
$$\text{Working Capital to Assets} = \frac{\text{Working Capital}}{\text{Assets}} \quad (11)$$

The graph for the profit margin decomposition is shown in Illustration A1-5. The solid line represents all the possible combinations of net income to CFO and CFO to revenues that result in a profit margin of 5%. The line representing higher profit margins would be located above the line and lower profit margins would be represented below the line. The graph provides insight into the accrual process. Consider the case where net income equals CFO (see the vertical line at 1.00). Points above 1.0 represent situations where accruals increase earnings and points below 1.0 represent cases where accruals decrease earnings. Thus if the firm's last three profit margin observations plot very close to the vertical line at net income to CFO of 1.0, this implies that the overall timing of the revenues and expenses reported on the income statement are very close to the overall timing of the cash collections and cash payments. Income increasing accruals might signal future cash from operations, while income decreasing accruals would be likely to indicate lower future cash flows.

Illustration A1-6 provides the graph of the decomposition of the asset turnover ratio. Clearly, if the firm can generate more revenues with lower working capital or lower assets, the asset turnover will increase.

Other Important Ratios

While the structured approach is a good start to financial analysis, it is not comprehensive. For instance, a common-size income statement is a great tool for analyzing various margins (such as the gross margin or operating margin) and locating areas of the income statement

ILLUSTRATION A1-6**Asset Turnover (= 2.0) Breakdown**

where certain expenses are growing faster than revenues. Also, there are other groupings of ratios that bear mention. By *groupings*, we mean that these ratios should be considered jointly rather than individually. For instance, consider the following three ratios:

1. Gross margin percentage (sales less cost of goods sold divided by sales)
2. Receivables turnover (sales divided by receivables)
3. Inventory turnover (cost of goods sold divided by inventory)

Turnover ratios are useful because they compare an income statement number and a balance sheet number (the name of the turnover ratio always defines the item in the denominator of the ratio). The gross margin ratio might indicate that sales grew faster than cost of goods sold, while a decrease in the inventory turnover may provide a warning that the firm could have over-purchased inventory.

Two final ratios to consider in your evaluation are:

1. Long-term debt to assets
2. Cash interest coverage ratio (cash from operations plus cash interest and cash taxes divided by cash interest paid)

The first ratio measures the amount of debt included in the capital structure, while the second ratio provides a measure of the firm's ability to meet the cash interest payment.

INTRODUCTION TO BUSINESS

COMBINATIONS AND THE

CONCEPTUAL FRAMEWORK (ONLINE)

1.11 FASB CODIFICATION (SOURCE OF GAAP)

On July 1, 2009, the Financial Accounting Standards Board (FASB) launched the *FASB Accounting Standards Codification* as the single source of authoritative nongovernmental U.S. generally accepted accounting principles (GAAP). The Codification is effective for interim and annual periods ending after September 15, 2009. All existing accounting standards documents are superseded as described in *FASB Statement No. 168, The FASB Accounting Standards Codification and the Hierarchy of Generally Accepted Accounting Principles*. All other accounting literature not included in the Codification is nonauthoritative.³⁰

While not intended to change existing U.S. GAAP, the purpose of the Codification is to integrate existing accounting standards by multiple standard-setters within levels A through D of the former GAAP hierarchy. Cross-references are provided to link the Codification to the original standards. The Codification also contains *relevant* portions of authoritative content issued by the Securities and Exchange Commission as well as selected SEC staff interpretations and administrative guidelines.

It does not include SEC staff speeches, testimony, or Current Issues and Rulemaking Projects (CIRPs), nor does it include pronouncements of the IASB. Nonetheless, one expectation of the Codification's implementation is that it will ease the convergence of U.S. GAAP and international standards (IFRS); and the material correlates at the topic and section levels to IFRS. As we move forward, future U.S. accounting standards will be issued in the form of an update to the appropriate topic or subtopic within the Codification.

The Codification is intended to simplify the classification of existing and future standards by restructuring all authoritative U.S. GAAP (other than that for governmental entities) into one online database under a common referencing system. The codification is organized in a tiered structure consisting of a framework of topics, subtopics, sections, and paragraphs on each subject. The Codification does not codify all GAAP since the GAAP hierarchy also includes items such as practice, textbooks,

³⁰ Rules and interpretive releases of the Securities and Exchange Commission (SEC) under authority of federal securities laws are also sources of authoritative GAAP for SEC registrants. In addition to the SEC's rules and interpretive releases, the SEC staff issues Staff Accounting Bulletins that represent practices followed by the staff in administering SEC disclosure requirements, and it utilizes SEC Staff Announcements and Observer comments made at Emerging Issues Task Force meetings to publicly announce its views on certain accounting issues for SEC registrants.

articles, and other similar content. Thus instead of referring to specific FASB statements, the Codification will be referenced as *ASC*, which is the Accounting Standards Codification (ASC). In fact, the FASB will no longer issue statements (such as *FAS No. 141*), but will instead issue updates to the Codification. The updates will be referred to as *ASU* (or accounting standards update). The Codification replaces the GAAP hierarchy.

GAAP pronouncements are divided into 90 accounting topics, and all topics are displayed using a consistent structure. In order to apply or search the Codification, one must understand its structure. References to the Codification contain four groupings of numbers. These four numbered items refer to (1) the topic, (2) the subtopic, (3) the section, and (4) the paragraph number for the appropriate accounting. Thus the code ASC 450-20-25-2 refers to topic 450, which is contingencies; subtopic 20, which is loss contingencies; section 25, which is recognition; and the 2 refers to the second paragraph.

Highest-level topics are organized in nine main areas, but are mainly grouped by financial statement. For instance, three general topics relate to the balance sheet (assets, liabilities, and equity) and two of the general topics relate to the income statement (revenues and expenses).

<i>Groupings</i>	<i>General Topics</i>	<i>Topic Numbering</i>	<i>Number of Specific Topics in Each General Topic</i>
	General Principles	105	1
	Presentation	200–299	15
Balance Sheet Topics	Assets	300–399	9
	Liabilities	400–499	9
	Equity	505	1
Income Statement	Revenues	605	1
	Expenses	700–799	8
Other Topics	Broad Transactions	800–899	14
	Industry	900–999	32
Total			90

- a. *General Principles (Topic 105)*. This topic establishes the *Accounting Standards Codification* (Codification) as the source of authoritative generally accepted accounting principles (GAAP). Rules and interpretive releases of the Securities and Exchange Commission (SEC) under authority of federal securities laws are also sources of authoritative GAAP for SEC registrants. Also, certain accounting standards allowed for the continued application of superseded accounting standards. Such grandfathered standards are typically not included in the Codification. Some of the grandfathered topics are listed in ASC 105-10-65-1.
- b. *Presentation (Topic Codes 205–299)*. There are 15 topics related to presentation of comparative financial statements. These topics do not address recognition, measurement, and derecognition matters. Not all presentation issues will be found in ASC 200 topics. Within each general topic (topics 300 and higher), section 45 describes “other presentation matters” specific to that particular general topic. These can always be found in ASC XXX-YY-45-xx. For instance,

ASC 330-10-45-2 describes the guidance on presenting contract costs of certain construction-type contracts. The topics included in presentation are as follows:

Presentation Topic (ASC 200 Topics)

205	Presentation of Financial Statements
210	Balance Sheet
215	Statement of Shareholder Equity
220	Comprehensive Income
225	Income Statement
230	Statement of Cash Flows
235	Notes to Financial Statements
250	Accounting Changes and Error Corrections
255	Changing Prices
260	Earnings per Share
270	Interim Reporting
272	Limited Liability Entities
274	Personal Financial Statements
275	Risks and Uncertainties
280	Segment Reporting

- c. *Financial Statement Accounts (Topic Codes 305–700)*. The Codification organizes topics in a financial statement order including Assets, Liabilities, Equity, Revenue, and Expenses. Topics include Receivables, Revenue Recognition, Inventory, and so on.

Balance Sheet Topics

Assets (ASC 300 Topics)

305	Cash and Cash Equivalents
310	Receivables
320	Investments—Debt and Equity Securities
323	Investments—Equity Method and Joint Ventures
325	Investments—Other
330	Inventory
340	Other Assets and Deferred Costs
350	Intangibles—Goodwill and Other
360	Property, Plant, and Equipment

Liabilities (ASC 400 Topics)

405	Liabilities
410	Asset Retirement and Environmental Obligations
420	Exit or Disposal Cost Obligations
430	Deferred Revenue
440	Commitments
450	Contingencies
460	Guarantees
470	Debt
480	Distinguishing Liabilities from Equity

Equity (ASC 500 Topics)

505	Equity
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Income Statement Topics

Revenue (ASC 600 Topics)

605	Revenue Recognition
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Expenses (ASC 700 Topics)

705	Cost of Sales and Services
710	Compensations—General
712	Compensation—Nonretirement Postemployment Benefits
715	Compensation—Retirement Benefits
718	Compensation—Stock Compensation
720	Other Expenses
730	Research and Development
740	Income Taxes

- d. *Broad Transactions (Topic Codes 805–899)*. These topics relate to multiple financial statement accounts and are generally transaction-oriented. Topics include Business Combinations, Consolidations, Derivatives, Nonmonetary Transactions, Related Party Disclosures, Leases, and so on.

Broad Transactions (ASC 800 Topics)

805	Business Combinations
808	Collaborative Arrangements
810	Consolidation
815	Derivatives and Hedging
820	Fair Value Measurements and Disclosures
825	Financial Instruments
830	Foreign Currency Matters
835	Interest
840	Leases
845	Nonmonetary Transactions
850	Related Party Disclosures
852	Reorganizations
855	Subsequent Events
860	Transfers and Servicing

- e. *Industries (Topic Codes 905–999)*. These 32 topics relate to accounting that is unique to an industry or type of activity. Topics include Airlines, Entertainment, Extractive Activities, Financial Services, Non-for-Profit Entities, Software, Real Estate, and so on.

Industry Topics (ASC 900 Topics)

905	Agriculture
908	Airlines
910	Contractors—Construction
912	Contractors—Federal Government
915	Development Stage Entities
920	Entertainment—Broadcasters
922	Entertainment—Cable Television
924	Entertainment—Casinos
926	Entertainment—Films
928	Entertainment—Music
930	Extractive Activities—Mining
932	Extractive Activities—Oil and Gas
940	Financial Services—Broker and Dealers
942	Financial Services—Depository and Lending
944	Financial Services—Insurance
946	Financial Services—Investment Companies
948	Financial Services—Mortgage Banking

950	Financial Services—Title Plant
952	Franchisors
954	Health Care Entities
958	Not-for-Profit Entities
960	Plan Accounting—Defined Benefit Pension Plans
962	Plan Accounting—Defined Contribution Pension Plans
965	Plan Accounting—Health and Welfare Benefit Plans
970	Real Estate—General
972	Real Estate—Common Interest Realty Associations
974	Real Estate—Real Estate Investment Trusts
976	Real Estate—Retail Land
978	Real Estate—Time-Sharing Activities
980	Regulated Operations
985	Software
995	U.S. Steamship Entities

Throughout this textbook, we reference the Codification by topic number only on occasion (i.e., FASB ASC 810 “Consolidations”) or in many instances using up to four groupings of numbers, which include the topic–subtopic–section–paragraph number (i.e., FASB ASC 810-20-25-4).

The Codification includes the following literature issued by various standard-setters that applies to all entities (other than governmental entities):

Standards Issued by Standard-Setters Other Than the SEC

- a. Financial Accounting Standards Board (FASB)
 1. Statements (FAS)
 2. Interpretations (FIN)
 3. Technical Bulletins (FTB)
 4. Staff Positions (FSP)
 5. Staff Implementation Guides (Q&A)
 6. Statement No. 138 Examples
- b. Emerging Issues Task Force (EITF)
 1. Abstracts
 2. Topic D
- c. Derivative Implementation Group (DIG) Issues
- d. Accounting Principles Board (APB) Opinions
- e. Accounting Research Bulletins (ARB)
- f. Accounting Interpretations (AIN)
- g. American Institute of Certified Public Accountants (AICPA)
 1. Statements of Position (SOP)
 2. Audit and Accounting Guides (AAG)—only incremental accounting guidance
 3. Practice Bulletins (PB), including the Notices to Practitioners elevated to Practice Bulletin status by Practice Bulletin 1
 4. Technical Inquiry Service (TIS)—only for Software Revenue Recognition

Standards Issued by the SEC

To increase the utility of the Codification for public companies, relevant portions of authoritative content issued by the SEC and selected SEC staff interpretations and administrative guidance have been included for reference in the Codification, such as:

- a. Regulation S-X (SX)
- b. Financial Reporting Releases (FRR)/Accounting Series Releases (ASR)
- c. Interpretive Releases (IR)
- d. SEC Staff Guidance in
 1. Staff Accounting Bulletins (SAB)
 2. EITF Topic D and SEC Staff Observer comments

Changes to GAAP: Updating the FASB Standards

Updates to the Codification are called *Accounting Standards Updates* and are referenced as ASU YYYY-xx, where the Ys indicate the year the update was approved and xx represents the number of the update for that year. For instance, ASU 2010-29 is the 29th update to the standards issued in 2010. Updates, by themselves, are not authoritative, but serve to update the Codification, provide background information, and provide the basis for the conclusions on the change. See online content at www.wiley.com/go/jeter/AdvancedAccounting7e for more details on researching the Codification.