

Business Fundamentals for Analytics

Financial Accounting

Arnold Schneider
Professor
Scheller College of Business

Introduction to Financial Accounting

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Learning Objectives

- Describe concepts and standards underlying the measurements used in accounting to develop the financial statements of businesses.
- Analyze and account for business transactions.
- Classify and communicate the results of business transactions in the form of financial statements.
- Use and interpret financial information for making decisions pertaining to the business.

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Introduction to Financial Accounting

Measuring & reporting financial information

Forms of Businesses:

- Proprietorship & Partnership
 - Unlimited liability
 - No taxation
- Corporation (Shareholders → Board of Directors → Top Managers)
 - Limited liability
 - Taxation

Corporations can be publicly traded or privately held.



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Assumptions

- Separate entity
We treat the business and the owners as separate entities, focusing on the accounting for the businesses, not the owners.
- Unit of measurement
The currency in which the company is operating.
- Going concern
We presume that the company will continue to operate -- that it'll be ongoing



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Assumptions (Cont'd)

- **Periodicity**
We presume that we can arbitrarily pick any time period that we want to and report the financial results for that time period
- **Materiality**
The only information that needs to be disclosed in financial statements is information that will be useful for those who rely on the financial statements to make decisions.

[Home Depot, p.36]

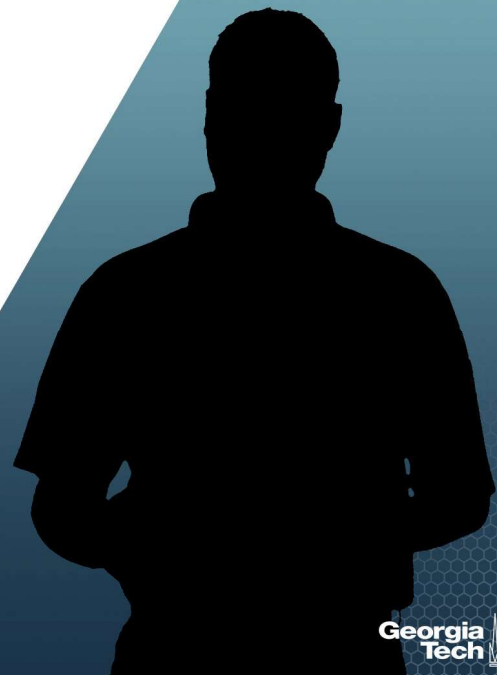
"The valuation reserve related to accounts receivable was not material to our consolidated financial statements at the end of fiscal 2018 or fiscal 2017."
[Home Depot, p.36]



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Users of Financial Reports

- Investors (stockholders)
- Creditors (banks)
- Government agencies (SEC)
- Company management
- Financial analysts




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Financial Statements



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Financial Statements


Generally Accepted Accounting Principles (GAAP)

- Securities & Exchange Commission (SEC).
The rule-making resides under the authority of the SEC.
- Financial Accounting Standards Board (FASB)
FASB consists of representatives from public accounting firms, industry, government agencies, and academia.

International Financial Reporting Standards (IFRS)

GAAP vs. Tax Accounting

We focus only on GAAP, not on tax accounting.



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Qualities of Financial Statements

- Understandability
- Timeliness
- Full disclosure
- Comparability
- Objectivity [UPS, p. 69]
- Decision relevance

"The preparation of our consolidated financial statements requires the use of estimates and assumptions that affect the reported amounts of assets and liabilities, the reported amounts of revenues and expenses, and the disclosure of contingencies. Estimates have been prepared on the basis of the most current and best information and actual results could differ materially from those estimates." [UPS, p. 69]



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Required Financial Statements

- Balance Sheet
 - Measures financial position at a point in time.
 - Assets, Liabilities, and Owner's Equity
- Income Statement
- Statement of Cash Flows

Accounting Equation.

- The left side of the equation represents **resources of the company**, that is the **assets** are the resources.
- The right side represents **sources of the funding** provided by the **creditors**. The Liabilities represent the creditor's claims.
- **Owner's Equity** represents the **sources provided by the owners** and the owner's claims.



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Financial Statements

Balance Sheet: Measures financial position at a point in time

Assets = Liabilities + Owners' Equity

Resources = Sources of funding

Resources = Creditors' claims + owners' claims



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Assets

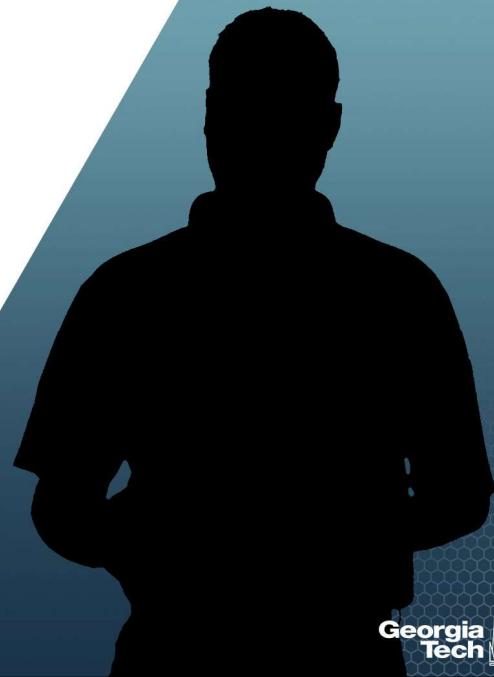


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Assets

Resources owned or rights to receive resources

- Physical (cash, buildings, inventory, equipment)
- Intangible (copyrights, patents, or trademarks)
- Legal rights (e.g. legal right to receive payment)



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Common Asset Accounts

- Cash
- Accounts receivable & notes receivable
- Inventory
- Investments
- Buildings & Equipment
- Copyrights; patents

Order of presentation: Liquidity



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Valuation

- Historical cost
- Sales value
- Replacement cost
- General price-level adjusted costs

Cost Principle: Assets are valued at their historical cost



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Liabilities & Stockholders' Equity



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Liabilities & Stockholders' Equity

Liabilities: Obligations owed to creditors

- Money
- Goods/services

Common Liability Accounts

- Accounts payable
- Notes payable
- Interest payable
- Accrued salaries [Home Depot, p. 31]
- Deferred (Unearned) Revenues [Home Depot, p. 31]

Home Depot, Inc. Liabilities and Stockholders Equity	
Current liabilities:	
Short-term debt	\$
Accounts payable	1,339
Accrued salaries and related expenses	7,755
Sales taxes payable	1,506
Deferred revenue	656
Income taxes payable	1,782
Current installments of long-term debt	11
Other accrued expenses	1,056
Total current liabilities	2,611
Long-term debt, excluding current installments	16,716
Deferred income taxes	26,807
Other long-term liabilities	491
Total liabilities	1,867
	45,881



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Classified Balance Sheets

- Current vs. Long-term Assets -- Conversion to cash within 1 year
 - Current vs. Long-term Liabilities -- Due date within 1 yr.
- [UPS, p. 66]

UPS, INC. Consolidated Balance Sheets		
Assets	December	
	\$ 2018	\$ 2017
Current Assets		
Cash and cash equivalents	4,225	3,320
Marketable securities	810	749
Account receivable, net	8,958	8,773
Current income taxes receivable	940	1,573
Other current assets	1,277	1,303
Total Current Assets	16,210	15,718
Property, Plant, and Equipment, Net	26,676	22,118
Goodwill	3,811	3,872
Intangible Assets, Net	2,075	1,964
Investments and Restricted Assets	170	483
Deferred Income Tax Assets	141	266
Other Non-Current Assets	1,033	1,153
Total Assets	50,016	45,574



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Classified Balance Sheets (Cont'd)

- Current vs. Long-term Assets -- Conversion to cash within 1 year

[UPS, p. 66]

UPS, INC. Liabilities and Shareowners' Equity		
Current Liabilities		
Current maturities of long-term debt and commercial paper	\$ 2,805	\$ 4,011
Accounts payable	5,188	3,934
Accrued wages and withholdings	3,047	2,608
Self-insurance reserves	810	705
Accrued group welfare and retirement plan contributions	715	677
Other current liabilities	1,522	951
Total current liabilities	14,087	12,886
Long-term debt	19,931	20,278
Pension and Post-retirement Benefit Obligations	8,347	7,061
Deferred Income Tax Liabilities	1,619	756
Shareowners' Equity		
Class A common stock	1,424	1,804
Class B common stock	2	2
Additional paid-in capital	7	7
Retained earnings	8,006	5,852
Accumulated other comprehensive loss	(4,994)	(4,867)
Deferred compensation obligations	32	37
Less: Treasury stock	(32)	(37)
Total Equity for Controlling Interests	3,021	994
Non-controlling Interests	16	30
Total Shareowners' Equity	3,037	1,024
Total Liabilities and Shareowners' Equity	50,016	45,574

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Liabilities & Stockholders' Equity

Owners' Equity

Residual interest of owners to assets

$$A = L + OE \text{ (claims against assets)}$$

$$A - L = OE$$

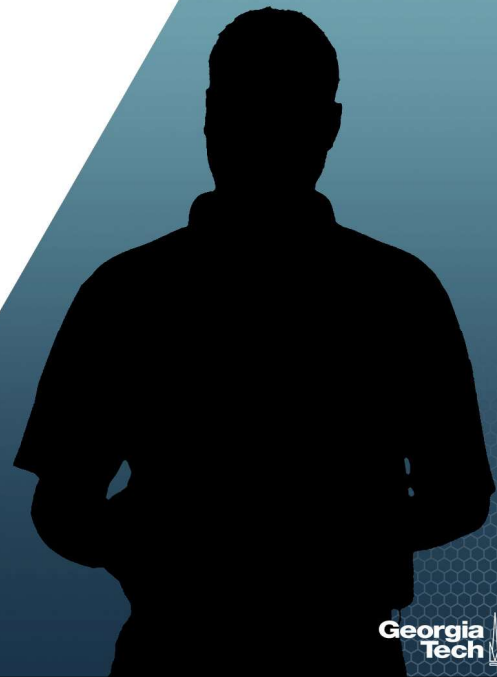


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Stockholders' Equity (OE for Corporations)

- **Capital Stock**-- what the company received when selling shares of its stock
- **Retained Earnings** -- accumulated earnings less dividends. Dividends are a distribution of earnings, and that only occurs when the board of directors decides to distribute the earnings.



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Statement of Retained Earnings

Beginning Retained Earnings
 + Net Income
 - Dividends
 = Ending Retained Earnings



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Statement of Stockholders' Equity (Simplified)

Beginning Stockholders' Equity
+ Net Income
- Dividends
+ Issuance of Capital Stock
= Ending Stockholders' Equity



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Cash Basis vs. Accrual Accounting



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Cash Basis vs. Accrual Accounting

Revenues: Value received for goods sold or services performed

Expenses: Payment, or obligations, for goods or services received

- Cash is not necessarily involved in the determination of revenues or expenses.
- With cash basis accounting, revenues will be recognized when cash is received, and expenses will be recognized when cash is paid out.
- Income statement uses accrual accounting, not cash basis.



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Revenue Recognition Principle

Revenue is recognized when earned

- Delivery of goods
- Performance of service

The earning process is considered to be complete even though cash has not yet been collected.



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Matching Principle (for Expense Recognition)

- Costs are reported as expenses in the same time period as their related revenues.
- Costs that cannot be matched with specific revenues are matched with future time periods that benefit from the cost.



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Income Statement



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Income Statement

- Shows the results of a company's operations (i.e., success) over a period of time.
- Focuses on a time interval. It looks at what happened over a period of time. At a minimum, this period of time is a one year period.
- Fiscal year is any 12 month period that the company chooses.

[Home Depot, p. 36]

"Our fiscal year is a 52 or a 53 week period ending on the Sunday nearest to January 31st. Fiscal 2018 includes 53 weeks compared to fiscal 2017 and fiscal 2016, both of which include 52 weeks." [Home Depot, p. 36]



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Single Step Income Statement

Revenues Earned
 - Expenses Incurred
 = Net Income

- Lists all our revenues and all expenses
- Companies may have additional categories in it (e.g. net sales)



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Gross Margin

Net Sales

- Cost of Goods Sold

Gross Margin

[Home Depot, p. 32]

The Home Depot, Inc Consolidated Statements of Earnings		
Net sales	\$ 108,203	\$ 100,904
Cost of sales	71,043	66,548
Gross profit	37,160	34,358
Operating expenses:		
Selling, general and administrative	19,513	17,844
Depreciation and amortization	1,870	1,811
Impairment loss	247	-
Total operating expenses	21,630	19,675
Operating income	15,530	14,681
Interest and other (income) expense:		
Interest and investment income	(93)	(74)
Interest expense	1,051	1,057
Other	16	-
Interest and other, net	974	983
Earnings before provision for income taxes	14,556	13,698
Provision for income taxes	3,435	5,068
Net earnings	\$ 11,121	\$ 8,630
Basic weighted average common shares	1,137	1,178
Basic earnings per share	\$ 9.78	\$ 7.33
Diluted weighted average common shares	1,143	1,184
Diluted earnings per share	\$ 9.73	7.29



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Operating Expenses

Net Sales

Cost of Goods Sold

Gross Margin

- Operating Expenses (S, G & A)

Operating Income

[Home Depot, p. 32]

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Other Revenues & Expenses

Net Sales

Cost of Goods Sold

Gross Margin

Operating Expenses (S, G &

A)

Operating Income

+/- Other Rev. & Exp.
(Gains, Losses, Interest,
Div. Rev.)

Income Before Taxes

[Home Depot, p. 32]

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Income Tax Expense

Net Sales

Cost of Goods Sold

Gross Margin

Operating Expenses (S, G & A)

Operating Income

Other Rev. & Exp. (Gains,
Losses, Interest, Div. Rev.)

Income Before Taxes

- Income Tax Expense

Income After Taxes

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Non-Recurring Items

Net Sales

Cost of Goods Sold

Gross Margin

Operating Expenses (S, G & A)

Operating Income

Other Rev. & Exp. (Gains, Losses, Interest, Div. Rev.)

Income Before Taxes

Income Tax Expense

Income After Taxes

+/- Discontinued Operations [NCR, p. 51]

"loss from discontinued operations,
net of tax" [NCR, p. 51]

+/- Changes in Accounting Principles

Net Income



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Earnings Per Share (EPS)

Net Income (Net Loss)

Shares of Stock

Basic vs. fully diluted EPS

[NCR, p. 51]



Net income (loss) per common share			
Basic	\$ (1.16)	\$ 1.01	\$ 1.76
Diluted	\$ (1.16)	\$ 0.97	\$ 1.71



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[NCR, p. 60]

NCR Corporation Notes to Consolidated Financial Statements			
	2018	2017	2016
Income (loss) from continuing operations	\$ (36)	\$ 237	283
Series A convertible preferred stock dividends	(49)	(47)	-
Deemed dividend on modification of Series A Convertible Preferred Stock	-	(4)	-
Deemed dividend on Series A Convertible Preferred Stock redemption	-	(58)	-
Net Income (loss) from continuing operations attributable to NCR common stockholders	(85)	(128)	283
Loss from discontinued operations, net of tax	(52)	(5)	(13)
Series A convertible preferred stock dividends	-	-	(49)
Net Income (loss) attributable to NCR common stockholders	\$ (137)	\$ 123	\$ 221
Basic weighted average number of shares outstanding	118.4	121.9	125.6
Dilutive effect of as-if Series A Convertible Preferred Stock	-	-	28.2
Dilutive effect of employee stock options and restricted stock units	-	5.1	3.6
Denominator- from continuing operations	118.4	127.0	157.4
Basic weighted average number of shares outstanding	118.4	121.9	125.6
Dilutive effect of employee stock options and restricted stock units	-	5.1	3.6
Denominator- total	118.4	127.0	129.2
Diluted earnings (loss) per share:			
From continuing operations	\$ (0.72)	\$ 1.01	\$ 1.80
From discontinued operations	(0.44)	(0.04)	(0.10)
Total diluted earnings (loss) per share	(1.16)	\$ (0.97)	\$ 1.71

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Statement of Cash Flows



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Statement of Cash Flows

- How did the company receive cash?
- How did the company use its cash?

Shows how cash changed from the beginning to the end of the period

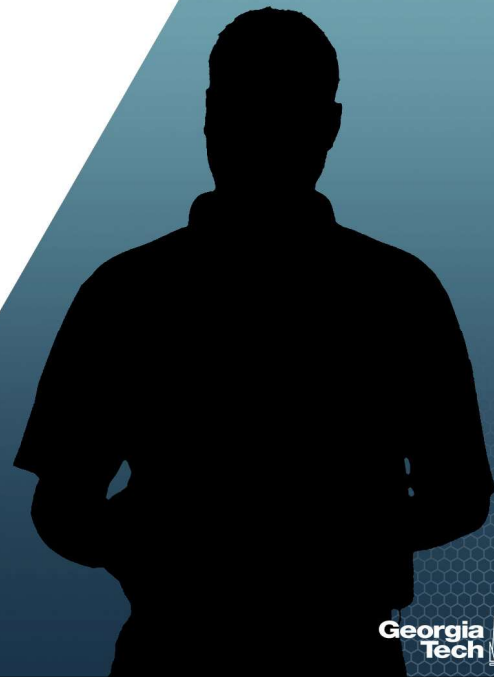
Reports the amount of cash collected and paid out by a company in *operating*, *investing*, and *financing* activities.



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Change in Cash

$$\begin{aligned} & \pm \text{Investing cash flows} \\ & \pm \text{Financing cash flows} \\ & = \text{Change in cash} \end{aligned}$$



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Operating Activities

A company's day-to-day activities.

- Major operating cash inflow—cash receipts from selling goods or from providing services.
- Major operating cash outflow—payments to purchase inventory and to pay operating expenses.

Direct vs. Indirect Methods

- **Direct method** explicitly states where the cash came from and where the cash went to.
- **Indirect method** starts off with the company's net income from the income statement, and it makes some adjustments to get to the cash flow from the operating activities.

[Home Depot, p. 35]

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Operating Activities

[Home Depot, p. 35]

The Home Depot, Inc. Consolidated Statements of Cash Flows	
Cash Flows from Operating Activities:	
Net earnings	
Reconciliations of net earnings to net cash provided by operating activities:	
Depreciation and amortization	
Stock-based compensation expense	
Impairment loss	
Changes in receivables, net	
Changes in merchandise inventories	
Changes in current assets	
Changes in accounts payable and accrued expenses	
Changes in deferred revenue	
Changes in income taxes payable	
Changes in deferred income taxes	
Other operating activities	
Net cash provided by operating activities	



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Investing Activities

Buying and selling long-term assets (land, building, equipment)

[Home Depot, p. 35]

The Home Depot, Inc. Consolidated Statements of Cash Flows	
Cash Flows from Investing Activities:	
Capital expenditures, net of non-cash capital expenditures	
Payments for businesses acquired, net	
Proceeds from sales of property and equipment	
Other investing activities	
Net cash used in investing activities	



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Financing Activities

Cash obtained from or repaid to owners and creditors (loans, repayments, stock issuance).

[Home Depot, p. 35]

The Home Depot, Inc. Consolidated Statements of Cash Flows	
Cash Flows from Financing Activities:	
(Repayments of) proceeds from short-term debt, net	
Proceeds from long-term debt, net of discounts	
Repayments of long-term debt	
Repurchases of common stock	
Proceeds from sales of common stock	
Cash dividends	
Other financing activities	
Net cash used in financing activities	
Change in cash and cash equivalents	
Effect of exchange rate changes on cash and cash equivalents	
Cash and cash equivalents at the of year	



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Financial Statement Notes and Audits

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Notes to the Financial Statements

- Summary of significant accounting policies: assumptions, estimates, and judgments. [NCR, p. 58]

“Earnings Per Share. Basic earnings per share (EPS) is calculated by dividing net income, less any dividends, accretion or decrction, redemption or induced conversion on our Series A Convertible Preferred Stock, by the weighted average number of shares outstanding during the reported period.

In computing diluted EPS, we adjust the numerator used in the basic EPS computation, subject to anti-dilution requirements, to add back the dividends (declared or cumulative undeclared) applicable to the Series A Convertible Preferred Stock. Such add-back would also include any adjustments to equity in the period to accrete the Series A Convertible Preferred Stock to its redemption price, or recorded upon a redemption or induced conversion. We adjust denominator used in the basic EPS computation, subject to anti-dilution requirements, to include the dilution from potential shares resulting from the issuance of Series A Convertible Preferred Stock, restricted stock units, and stock options.”

[NCR, p. 58]

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Notes to the Financial Statements (Cont'd)

- Additional information about the summary totals. [NCR, p. 53]

NCR Corporation Notes to Consolidated Balance Sheets		
As of December 31 (in millions except per share amounts)	2018	2017
Assets		
Current assets		
Cash and cash equivalents	\$ 464	\$ 537
Accounts receivable, net	1,356	1,270
Inventories	806	780
Other current assets	397	243
Total current assets	3,023	2,830
Property, plant and equipment, net	359	341
Goodwill	2,692	2,741
.....



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Notes to the Financial Statements (Cont'd)

- Additional information about the summary totals. [NCR, 108]

NCR Corporation Notes to Consolidated Financial Statements		
As of December 31 (in millions except per share amounts)	Dec 31, 2018	Dec 31, 2017
Property, plant and equipment		
Land and improvements	\$ 6	\$ 7
Buildings and improvements	273	278
Machinery and other equipment	650	633
Property, plant and equipment, gross	929	918
Less: accumulates depreciation	(570)	(577)
Total property, plant and equipment, net	\$ 359	\$ 341



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Audits

- Issued by *independent* CPA firms.
- CPAs attest to conformity with GAAP ("present fairly").
- Financial statement *opinion*: unqualified (clean), modified, adverse [UPS, p. 65]

"In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018, in conformity with accounting principles generally accepted in the United States of America." [UPS, p. 65]



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Audits

- Financial statements are the responsibility of the company's management and not the CPA. [UPS, p. 65]
- Sarbanes-Oxley Act of 2002: Opinions on internal controls [Home Depot, p. 30]

"These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits." [UPS, p. 65]

"We also have audited, in accordance with the standards of the PCAOB, Home Depot's internal control over financial reporting." [Home Depot, p. 30]

"and our report dated March 28, 2019 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting." [Home Depot, p. 30]



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