Chapter 2

Financial Statements, Cash Flow, and Taxes

Major changes are occurring in Accounting. Textbooks are often years behind changes. In my videos, I will discuss some of these changes.

Chapter 2 Things to absorb - For Chapter 2, the main focus is on the format and purpose of balance sheet and income statement, and the names of items that might appear in these statements (e.g., depreciation is on income statement and accumulated depreciation may be on balance sheet), names of four required financial statements, the basics of tax calculations, and understand how to identify/calculate cash flow.

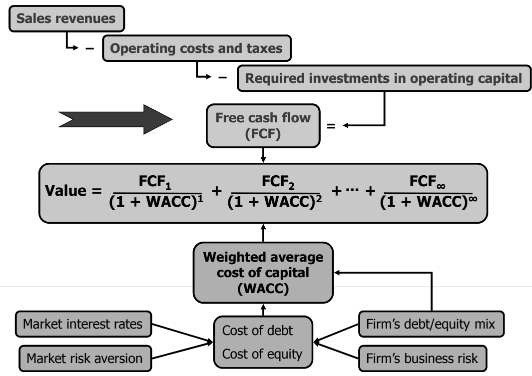
Things to Read - You will need to read the chapter. You will need to search for terms using a search engine.

Things to Do - Make 100 on the quiz. Be able to answer End of Chapter Questions 1-4, 6, and 7 and Problems 1, 2, 4, 6, and 9-11. Note, I will ask you to know the names of many financial accounts that are not listed in the chapter, expect some Internet searches. Many account names vary by company (e.g., Income Statement = Profit and Loss Statement = Statement of Income = Statement of Operations), thus learning this chapter requires learning potential account names.

Topics in Chapter

- Income statement
- Balance sheet
- Statement of cash flows
- Statement of Owner's Equity
- Free cash flow
- Performance measures
- Corporate taxes and Personal taxes

Determinants of Intrinsic Value: Calculating FCF



Accounting and Finance

Understanding financial accounting is essential to understanding corporate finance.

Key Components of the Financials:
The Balance Sheet
The Income Statement
The Statement of Cash Flows

The Balance Sheet

The Balance Sheet is a financial statement that shows the firm's assets and liabilities at a particular time.

Total Assets = Total Liabilities + Shareholders' Equity

Why is it useful?

Shareholders' Equity = Total Assets – Total Liabilities

The Income Statement

Income Statement: a financial statement that shows the revenues, expenses, and net income of a firm over a period of time.

Why is this useful?

The Statement of Cash Flows

The Statement of Cash Flows shows the firm's cash receipts and cash payments over time.

Why is it useful?

Free Cash Flow is cash available for distribution to investors after the firm pays for new investments or additions to working capital.

Book Values vs. Market Values

- GAAP (Generally Accepted Accounting Principles)
- Book Value
  - Value of assets or liabilities according to the balance sheet.
  - Values recorded at their *historical cost* adjusted for depreciation
- Market Value
  - The value of assets or liabilities were they to be resold in a market

Big Changes are Coming/Here

- United States (and a few others) are FASB/GAAP
- Most of the rest of the world are IASB/IFRS
- A gradual switch to IFRS
  - Sarbanes Oxley and Disclosures
  - Different Forms

Accounting Practice

Grey areas for financial managers:

Revenue recognition

Cookie-jar reserves

Off-balance sheet assets and liabilities

Mark-to-market accounting

The Five Basic Ways to Manipulate Financial Statements

- 1. "Aggressive" versus "Conservative" Accounting, Aggressive accounting accelerates recognition of income and delays recognition of expenses. It also increases the firm's tax rate.
  - Cisco recognizes sales when equipment leaves factory. They were famous for placing unassembled parts on trucks at end of quarter and then assembling items on truck.
- 2. End of Quarter Control of Discretionary Expenses at Quarter-End/Acceleration of Sales using discounts at quarter End (e.g. travel bans or bans on purchasing supplies)
  - Sunbeam selling Gas Grills in January at large discounts, while giving free storage in Sunbeam Warehouses, with 150 day free financing.

The Five Basic Ways to Manipulate Financial Statements

- 3. Moving items between Current assets, Current liabilities, and Long-Term Liabilities at quarter end
  - Some companies take out long-term loans (increase in Long Term Liabilities) just prior to quarter end to increase Cash (Current Asset) and pay them off as soon as quarter is over. This improves the cash position and liquidity ratios.
- 4. Placing focus on Proforma Statements (EBITDA) or frequent use of one-time charges
  - Kodak used 1-time charges associated with hiring and firing employees for the 15 years (until Bankruptcy)
  - Recognition of Deferred Taxes to create cashless Operating Cash Flow

The Five Basic Ways to Manipulate Financial Statements

- 5. Manipulation using choice of Industry since Difference Industries have different GAAP
  - Ford and GM classify most income and expenses as if they were a Financing Company rather than a manufacturer.

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The Income Statement

Income Statement: a financial statement that shows the revenues, expenses, and net income of a firm over a period of time.

Why is this useful?

3-16

Income Statement

	2012	2013
Sales	$3,432,000	$5,834,400
COGS	2,864,000	4,980,000
Other expenses	340,000	720,000
Deprec.	18,900	116,960
Tot. op. costs	3,222,900	5,816,960
EBIT	209,100	17,440
Int. expense	62,500	176,000
Pre-tax earnings	146,600	(158,560)
Taxes (40%)	58,640	(63,424)
Net income	$ 87,960	($ 95,136)

What happened to sales and net income?

- Sales increased by over $2.4 million.
- Costs shot up by more than sales.
- Net income was negative.
- However, the firm received a tax refund since it paid taxes of more than $63,424 during the past two years.

Income Statement: Example

In the income statement below, what was the value of Home Depot's EBIT in 2009?

INCOME STATEMENT OF HOME DEPOT, 2009	$ million	% of sales
Net sales	66,176	100.0
Cost of goods sold	43,764	66.1
Selling, general & admininstrative expenses	15,907	24.0
Depreciation	1,806	2.7
Earnings before interest and income taxes	4,699	7.1
Interest expense	676	1.0
Taxable income	4,023	6.1
Taxes	1,362	2.1
Net income	2,661	4.0
Allocation of net income		
Dividends	1,525	2.3
Addition to retained earnings	1,136	1.7

Common Size Income Statement (right column)

Variations are many
Revenue
-Cost of Goods Sold
=Gross Profit
-Operating Expenses (e.g. Labor, SGA, Rent, etc.)
=EBITDA
-Depreciation and Amortization
=EBIT (a.k.a Operating Profit/Earning/Income)
-Net Interest Expense (or Income)
=EBT (aka Profit/Income/Earnings before Taxes)
-Taxes
=Net Income
- Dividends (could be multiple lines)
=Additions to Retained Earnings

RECAP CORPORATION Statement of Comprehensive Income For the Year Ending December 31, 20X7		
Sales		$6,500,000
Cost of goods sold		4,000,000
Gross profit		$2,500,000
Operating expenses		
Salaries	$750,000	
Rent	250,000	
Other operating expenses	300,000	1,300,000
Income from continuing operations before income taxes		$1,200,000
Income taxes		500,000
Income from continuing operations		$ 700,000
Discontinued operations		
Profit on operations of food processing unit, including gain on disposal	$800,000	
Less: Income tax on disposal of business unit	200,000	
Gain on discontinued operations		600,000
Extraordinary item		
Gain on sale of diamonds found in landfill	$900,000	
Less: Income tax on diamonds	250,000	
Extraordinary gain		650,000
Net income/earnings		$1,950,000
Other comprehensive income adjustments from certain investments		100,000
Comprehensive income		$2,050,000

Amounts in SEK thousand	Note	2014	2013
Operating income			
Net sales	5	168,403	145,488
Work performed for own use and capitalized	7	13,462	16,404
Other operating income	10	3,829	269
Total		**185,694**	**162,161**
Operating expenses			
Raw materials and consumables		-90,962	-83,791
Other external costs	8	-22,317	-18,240
Personnel costs	9	-40,559	-38,723
Depreciation, amortization and impairment of tangible and intangible non-current assets		-35 703	-30,585
Other operating expenses	10	-1,536	-13
Total operating expenses		**-191,077**	**-171,352**
Operating income/loss		**-5,383**	**-9,191**
Financial income	11	17,562	2,491
Financial expenses	11	-18,339	-20,219
Net financial items		**-777**	**-17,728**
Results before tax		**-6,160**	**-26,919**
Taxes	12	16,583	-2,820
Net income/loss for the year		**10,423**	**-29,739**
Other comprehensive income			
Currency exchange differences	13	-1,356	-132
Other comprehensive income/loss for the year, net after tax		**-1,356**	**-132**
Total comprehensive income/loss for the year		**9,067**	**-29,871**

Profits vs. Cash Flow

Differences between profits & cash flow:

- Depreciation
- Cash vs. accrual accounting

The Balance Sheet

The Balance Sheet is a financial statement that shows the firm's assets and liabilities at a particular time.

Total Assets = Total Liabilities + Shareholders' Equity

Why is it useful?

Shareholders' Equity = Total Assets – Total Liabilities

Balance Sheet: Assets

	2012	2013
Cash	$ 9,000	$ 7,282
S-T invest.	48,600	20,000
AR	351,200	632,160
Inventories	715,200	1,287,360
Total CA	1,124,000	1,946,802
Gross FA	491,000	1,202,950
Less: Depr.	146,200	263,160
Net FA	344,800	939,790
Total assets	$1,468,800	$2,886,592

Effect of Expansion on Assets

- Net fixed assets almost tripled in size.
- AR and inventory almost doubled.
- Cash and short-term investments fell.

Balance Sheet: Liabilities & Equity

	2012	2013
Accts. payable	$ 145,600	$ 324,000
Notes payable	200,000	720,000
Accruals	136,000	284,960
Total CL	481,600	1,328,960
Long-term debt	323,432	1,000,000
Common stock	460,000	460,000
Ret. earnings	203,768	97,632
Total equity	663,768	557,632
Total L&E	$1,468,800	$2,886,592

What effect did the expansion have on liabilities & equity?

- CL increased as creditors and suppliers "financed" part of the expansion.
- Long-term debt increased to help finance the expansion.
- The company didn't issue any stock.
- Retained earnings fell, due to the year's negative net income and dividend payment.

The Balance Sheet

Current Assets • Cash & Securities • Receivables • Inventories + **Fixed Assets** • Tangible Assets • Intangible Assets **Total Assets**	=	**Current Liabilities** • Payables • Short-term Debt + **Long-term Liabilities** + **Shareholders' Equity** **Total Liabilities & Shareholders' Equity**

Balance Sheet

- The balance sheet is a snapshot of the firm's assets and liabilities at a given point in time
- Assets are listed in order of decreasing liquidity
  - Ease of conversion to cash
  - Without significant loss of value
- Balance Sheet Identity
  - Assets = Liabilities + Stockholders' Equity

Assets

Assets *represent the uses of a firm's funds*

i.e. Assets show what the firm "owns"

- Liquid Assets can be converted easily into cash
- Current vs. Fixed Assets

Current Assets: Examples

Which of the following assets is typically considered most liquid? Least liquid?

- Marketable securities
- Accounts receivable
- Inventories

Which of the following is a current asset?

- Property that a firm owns
- A firm's production equipment
- Unsold inventories

Look for Buzzwords

- Current Assets
  - Cash, Inventory, _______ Receivables, Prepaid __________, Short-term something owned
- Long Term Assets
  - Property, Plant, Equipment, Fixed Assets, Intangibles, Long Term something owned

Fixed Assets

- Tangible Assets
- Intangible Assets
- Goodwill

Fixed Assets: Example

- *Which of the following represent tangible assets? Intangible assets?*
  - Property
  - Production Facilities
  - Patents
  - Production Equipment
  - Trademarks
  - Copyrights

Liabilities

Liabilities represent the sources of a firm's funding.

(i.e. Liabilities represent what a firm "owes.")

- Current vs. Long-Term Liabilities

Current Assets – Current Liabilities = *Net Working Capital*

Liabilities: Example

- *Which of the following is a current liability?*
  - Bond debt that matures in 3 years
  - A bank loan that is due in 24 months
  - An obligation to pay a supplier within 6 months

More Buzzwords

- Current Liabilities
  - _____ Payables, Current Portion _____, Accrued _________
- Long-Term Liabilities
  - Bonds, Bank Loans, Capital Leases, Debt

Equity is Special

- Preferred Stock (rarely)
- Common Equity
  - Common Stock
  - Retained Earnings
  - Additional Paid-In CAPITAL Surplus
    - Only if stock has par value
  - Treasury Stock
    - Only in some locations

Net Working Capital: Example

In the balance sheet below, what was the value of net working capital in 2008? 2009?

BALANCE SHEET OF HOME DEPOT
(Figures in $ milions)

Assets	2009	2008	Liabilities and Shareholders' Equity	2009	2008
Current assets			Current liabilities		
Cash and marketable securities	1,421	519	Debt due for repayment	1,020	1,767
Receivables	964	972	Accounts payable	8,185	8,221
Inventories	10,188	10,673	Other current liabilities	1,158	1,165
Other current assets	1,327	1,198	Total current liabilities	10,363	11,153
Total current assets	13,900	13,362			
Fixed Assets			Long-term debt	8,662	9,667
Tangible fixed assets			Deferred income taxes	319	369
Property, plant, and equipment	37,345	36,223	Other long-term liabilities	2,140	2,198
Less accumulated depreciation	11,795	9,989			
Net tangible fixed assets	25,550	26,234	Total liabilities	21,484	23,387
Intangible asset (goodwill)	1,171	1,134	Shareholders' equity:		
Long-term investments	33	36	Common stock and other paid-in capital	6,390	6,133
Other assets	223	398	Retained earnings	13,588	12,452
			Treasury stock	$ (585)	(808)
Total Assets	40,877	41,164	Total shareholders' equity	19,393	17,777
			Total liabilities and shareholders' equity	40,877	41,164

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Book Values vs. Market Values

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The Statement of Cash Flows

The Statement of Cash Flows shows the firm’s cash receipts and cash payments over time.

Why is it useful?

Free Cash Flow is cash available for distribution to investors after the firm pays for new investments or additions to working capital.

The Statement of Cash Flows

Structure:

Cash flow from operations
+
Cash flow from investments
+
Cash flow from financing

Change in cash balance

CASH FLOW STATEMENT

- **Cash Flows** are segregated based on source:
  - ***classification guidelines can be arbitrary.***
- **Operating activities:** involve the cash effects of transactions that enter into the determination of net income.
- **Investing activities:** concern with buying (and selling) property, plants, and equipment (PPE); acquiring and disposing of securities of other entities;
- **Financing activities:** include issuance and reacquisition of a firm's debt and capital stock, and dividend payments.

Statement of Cash Flows

- **Cash Flow from Operating Activities (CFO)**
  - Accounts receivable, Inventories, Prepaid expenses, Accounts payable, Rent payable, Interest payable, Income tax payable, Deferred income taxes
- **Cash Flow from Investing Activities (CFI)**
  - Property, plant, and equipment costs and sales, Investment in affiliates, Cash paid/received for acquisitions and investments
- **Cash Flow from Financing Activities (CFF)**
  - Notes payable, Short-term debt, Long-term debt, Bonds, Common stock, Retained earnings, Dividends paid
- **Relationship between balance sheet changes and cash flows is:**
  - Increases (decreases) in assets are net cash outflows (inflows).
  - Increases (decreases) in liabilities are net cash inflows (outflows).

Statement of Cash Flows: 2013

Operating Activities	
Net Income	($ 95,136)
Adjustments:	
Depreciation	116,960
Change in AR	(280,960)
Change in inventories	(572,160)
Change in AP	178,400
Change in accruals	148,960
Net cash provided (used) by ops.	($503,936)

Statement of Cash Flows: 2013

Investing Activities	
Cash used to acquire FA	($711,950)
Change in S-T invest.	28,600
Net cash prov. (used) by inv. act.	($683,350)

Statement of Cash Flows: 2013

Financing Activities	
Change in notes payable	$ 520,000
Change in long-term debt	676,568
Payment of cash dividends	(11,000)
Net cash provided (used) by fin. act.	$1,185,568

Summary of Statement of CF

Net cash provided (used) by ops.	($ 503,936)
Net cash to acquire FA	(683,350)
Net cash prov. (used) by fin. act.	1,185,568
Net change in cash	(1,718)
Cash at beginning of year	9,000
Cash at end of year	$ 7,282

What can you conclude from the statement of cash flows?

- Net CF from operations = -$503,936, because of negative net income and increases in working capital.
- The firm spent $711,950 on FA.
- The firm borrowed heavily and sold some short-term investments to meet its cash requirements.
- Even after borrowing, the cash account fell by $1,718.

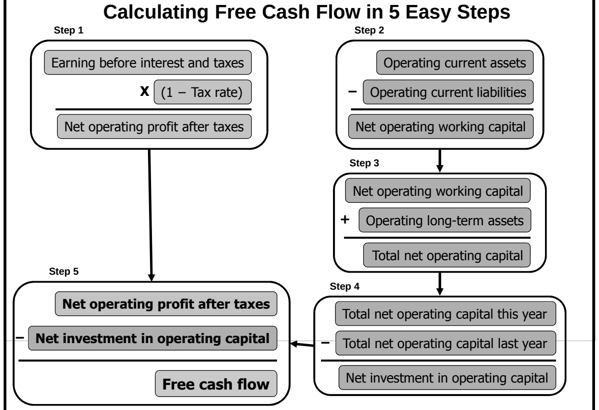
What is free cash flow (FCF)? Why is it important?

- FCF is the amount of cash available from operations for distribution to all investors (including stockholders and debtholders) after making the necessary investments to support operations.
- A company's value depends on the amount of FCF it can generate.

What are the five uses of FCF?

1. Pay interest on debt.
2. Pay back principal on debt.
3. Pay dividends.
4. Buy back stock.
5. Buy nonoperating assets (e.g., marketable securities, investments in other companies, etc.)

Calculating Free Cash Flow in 5 Easy Steps



Net Operating Profit after Taxes (NOPAT)

$$NOPAT = EBIT(1 - \text{Tax rate})$$

$$NOPAT_{13} = \$17{,}440(1 - 0.4) = \$10{,}464.$$

$$NOPAT_{12} = \$125{,}460.$$

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What are operating current assets?

- Operating current assets are the CA needed to support operations.
  - Op CA include: cash, inventory, receivables.
  - Op CA exclude: short-term investments, because these are not a part of operations.

What are operating current liabilities?

- Operating current liabilities are the CL resulting as a normal part of operations.
  - Op CL include: accounts payable and accruals.
  - Op CL exclude: notes payable, because this is a source of financing, not a part of operations.

Net Operating Working Capital (NOWC)

$$\text{NOWC} = \begin{matrix}\text{Operating}\\ \text{CA}\end{matrix} - \begin{matrix}\text{Operating}\\ \text{CL}\end{matrix}$$

$NOWC_{13}$ = (\$7,282 + \$632,160 + \$1,287,360)
- (\$324,000 + \$284,960)
= \$1,317,842.

$NOWC_{12}$ = \$793,800.

Total net operating capital (also called operating capital)

- Operating Capital= NOWC + Net fixed assets.
- Operating Capital 2013
  = \$1,317,842 + \$939,790
  = \$2,257,632.
- Operating Capital 2012 = \$1,138,600.

Free Cash Flow (FCF) for 2013

FCF = NOPAT - Net investment in operating capital

= $10,464 - ($2,257,632 - $1,138,600)

= $10,464 - $1,119,032

= -$1,108,568.

How do you suppose investors reacted?

Uses of FCF

After-tax interest payment =	$105,600
Reduction (increase) in debt =	−$1,196,568
Payment of dividends =	$11,000
Repurchase (Issue) stock =	$0
Purch. (Sale) of ST investments =	−$28,600
Total uses of FCF =	−$1,108,568

Return on Invested Capital (ROIC)

ROIC = NOPAT / operating capital

$ROIC_{13}$ = $10,464 / $2,257,632 = 0.5%.

$ROIC_{12}$ = 11.0%.

The firm's cost of capital is 10%. Did the growth add value?

- No. The ROIC of 0.5% is less than the WACC of 10%. Investors did not get the return they require.
- Note: High growth usually causes negative FCF (due to investment in capital), but that's ok if ROIC > WACC. For example, in 2008 Qualcomm had high growth, negative FCF, but a high ROIC.

Economic Value Added (EVA)

- WACC is weighted average cost of capital
- EVA = NOPAT- (WACC)(Capital)

Economic Value Added (WACC = 10% for both years)

$$\begin{aligned}
EVA &= NOPAT - (WACC)(Capital) \\
EVA_{13} &= \$10,464 - (0.1)(\$2,257,632) \\
&= \$10,464 - \$225,763 \\
&= -\$215,299. \\
EVA_{12} &= \$125,460 - (0.10)(\$1,138,600) \\
&= \$125,460 - \$113,860 \\
&= \$11,600.
\end{aligned}$$

Stock Price and Other Data

	2012	2013
Stock price	$8.50	$6.00
# of shares	100,000	100,000
EPS	$0.88	-$0.95
DPS	$0.22	$0.11

Market Value Added (MVA)

- MVA = Market Value of the Firm - Book Value of the Firm
- Market Value = (# shares of stock)(price per share) + Value of debt
- Book Value = Total common equity + Value of debt

(More…)

MVA (Continued)

- If the market value of debt is close to the book value of debt, then MVA is:
- MVA = Market value of equity – book value of equity

2013 MVA (Assume market value of debt = book value of debt.)

- Market Value of Equity 2013:
  - (100,000)($6.00) = $600,000.
- Book Value of Equity 2013:
  - $557,632.
- MVA_{13} = $600,000 - $557,632 = $42,368.
- MVA_{12} = $850,000 - $663,768 = $186,232.

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Key Features of the Tax Code

- Corporate Taxes
- Individual Taxes

2005-2012 Corporate Tax Rates

Taxable Income	Tax on Base	Rate on amount above base
0 -50,000	0	15%
50,000 - 75,000	7,500	25%
75,000 - 100,000	13,750	34%
100,000 - 335,000	22,250	39%
335,000 - 10M	113,900	34%
10M - 15M	3,400,000	35%
15M - 18.3M	5,150,000	38%
18.3M and up	6,416,667	35%

Features of Corporate Taxation

- Progressive rate up until $18.3 million taxable income.
  - Below $18.3 million, the marginal rate is not equal to the average rate.
  - Above $18.3 million, the marginal rate and the average rate are 35%.

Features of Corporate Taxes (Cont.)

- A corporation can:
  - deduct its interest expenses but not its dividend payments;
  - carry back losses for two years, carry forward losses for 20 years.*
  - exclude 70% of dividend income if it owns less than 20% of the company’s stock

*Losses in 2001 and 2002 can be carried back for five years.

Example

- Assume a corporation has $100,000 of taxable income from operations, $5,000 of interest income, and $10,000 of dividend income.
- What is its tax liability?

Example (Continued)

Operating income	$100,000
Interest income	5,000
Taxable dividend income	3,000*
Taxable income	$108,000

*Dividends - Exclusion
= $10,000 - 0.7($10,000) = $3,000.

Example (Continued)

Taxable Income = $108,000
Tax on base = $22,250
Amount over base = $108,000 - $100,000
= $8,000
Tax = $22,250 + 0.39 ($8,000)
= $25,370.

Key Features of Individual Taxation

- Individuals face progressive tax rates, from 10% to 35%.
- The rate on long-term (i.e., more than one year) capital gains is 15%. But capital gains are only taxed if you sell the asset.
- Dividends are taxed at the same rate as capital gains.
- Interest on municipal (i.e., state and local government) bonds is not subject to Federal taxation.

Taxable versus Tax Exempt Bonds

- State and local government bonds (municipals, or "munis") are generally exempt from federal taxes.

ExxonMobil bonds at 10% versus California muni bonds at 7%

- T = Tax rate = 25.0%.
- After-tax interest income:
- ExxonMobil = 0.10($5,000) - 0.10($5,000)(0.25)
- ExxonMobil = 0.10($5,000)(0.75) = $375.
- CAL = 0.07($5,000) - 0 = $350.

Breakeven Tax Rate

- At what tax rate would you be indifferent between the muni and the corporate bonds?
- Solve for T in this equation:

Muni yield = Corp Yield(1-T)

7.00% = 10.0%(1-T)

T = 30.0%.

Implications

- If T > 30%, buy tax exempt munis.
- If T < 30%, buy corporate bonds.
- Only high income, and hence high tax bracket, individuals should buy munis.

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