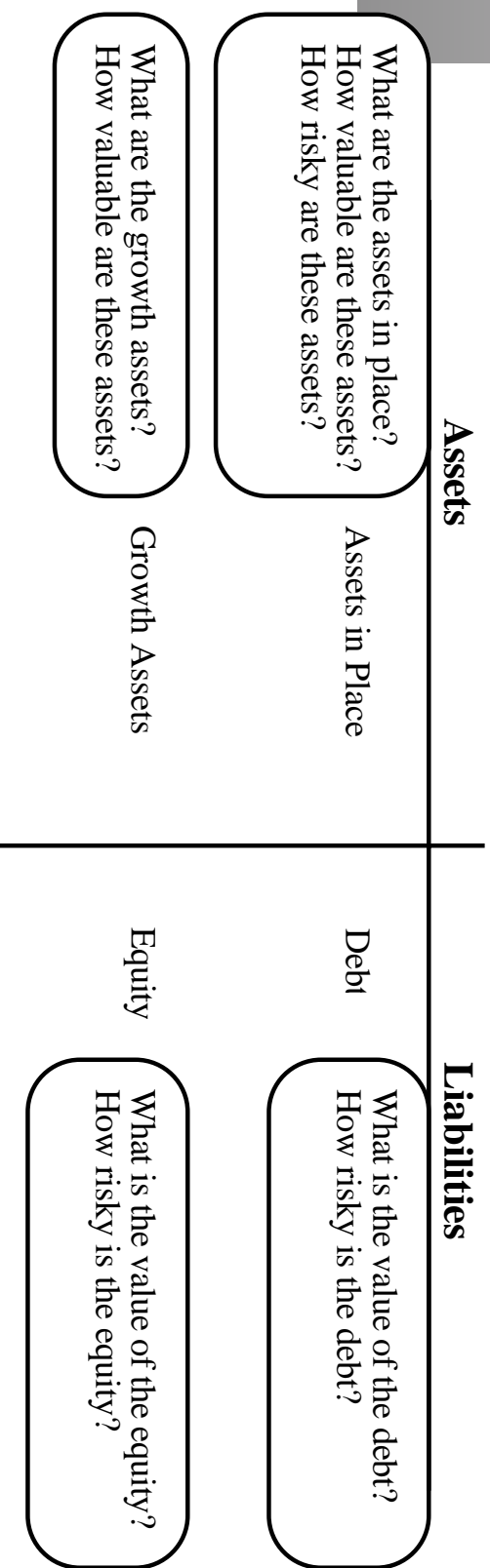




Financial Statement Analysis

Aswath Damodaran

Questions we would like answered...



Basic Financial Statements

- The balance sheet, which summarizes what a firm owns and owes at a point in time.
- The income statement, which reports on how much a firm earned in the period of analysis
- The statement of cash flows, which reports on cash inflows and outflows to the firm during the period of analysis

The Balance Sheet

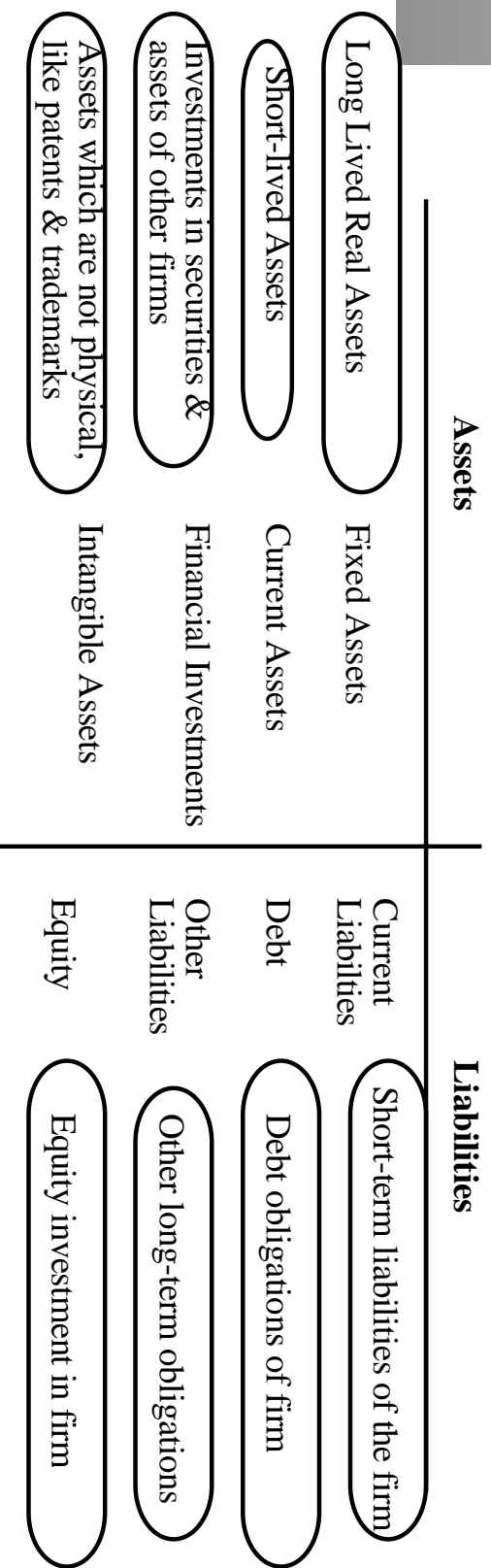
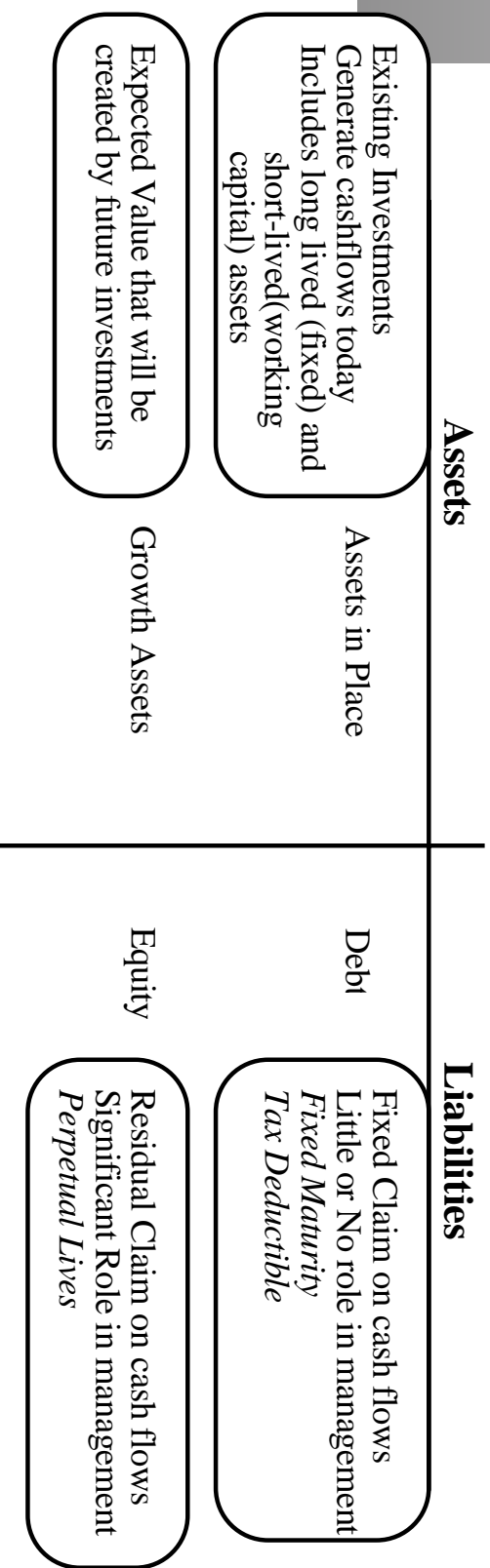


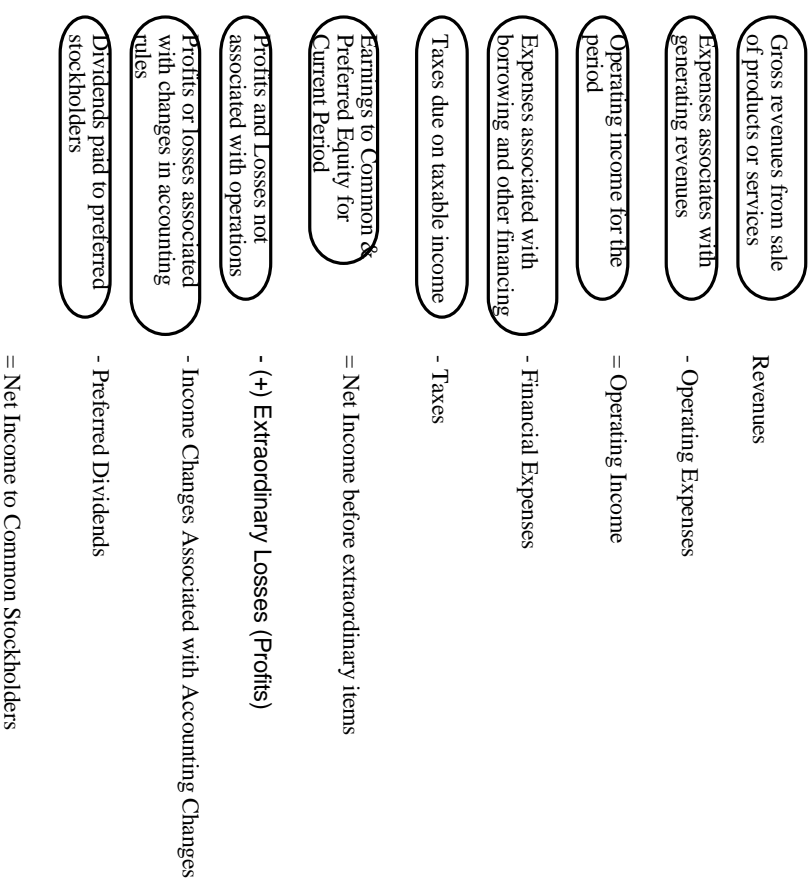
Figure 4.1: The Balance Sheet

A Financial Balance Sheet



The Income Statement

Figure 4.2: Income Statement



Modifications to Income Statement

- There are a few expenses that consistently are miscategorized in financial statements. In particular,
 - Operating leases are considered as operating expenses by accountants but they are really financial expenses
 - R & D expenses are considered as operating expenses by accountants but they are really capital expenses.
- The degree of discretion granted to firms on revenue recognition and extraordinary items is used to manage earnings and provide misleading pictures of profitability.

Dealing with Operating Lease Expenses

- Debt Value of Operating Leases = PV of Operating Lease Expenses at the pre-tax cost of debt
- This now creates an asset - the value of which is equal to the debt value of operating leases. This asset now has to be depreciated over time.
- Finally, the operating earnings has to be adjusted to reflect these changes:
 - Adjusted Operating Earnings = Operating Earnings + Operating Lease Expense - Depreciation on the leased asset
 - If we assume that depreciation = principal payment on the debt value of operating leases, we can use a short cut:
Adjusted Operating Earnings = Operating Earnings + Debt value of Operating leases * Cost of debt

Examples: Operating Leases at Boeing and The Home Depot in 1998

Year	Boeing		Home Depot	
	Operating Lease Expense	Present Value at 5.5%	Operating Lease Expense	Present Value at 5.8%
1	\$ 205	\$ 194.31	\$ 294	\$ 277.88
2	\$ 167	\$ 150.04	\$ 291	\$ 259.97
3	\$ 120	\$ 102.19	\$ 264	\$ 222.92
4	\$ 86	\$ 69.42	\$ 245	\$ 195.53
5	\$ 61	\$ 46.67	\$ 236	\$ 178.03
Yr 6-15	\$ -	\$ -	\$ 270	\$ 1,513.37
PV of Operating Lease Expenses		\$ 562.64		\$ 2,647.70

Imputed Interest Expenses on Operating Leases

	<i>Boeing</i>	<i>The Home Depot</i>
PV of Operating Leases	\$ 562.64	\$ 2647.70
Interest rate on Debt	5.50%	5.80%
Imputed interest expense on PV of operating leases	\$ 30.95	\$ 153.57

The Effects of Capitalizing Operating Leases

- Debt : will increase, leading to an increase in debt ratios used in the cost of capital and levered beta calculation
- Operating income: will increase, since operating leases will now be before the imputed interest on the operating lease expense
- Net income: will be unaffected since it is after both operating and financial expenses anyway
- Return on Capital will generally decrease since the increase in operating income will be proportionately lower than the increase in book capital invested

R&D Expenses: Operating or Capital Expenses

- Accounting standards require us to consider R&D as an operating expense even though it is designed to generate future growth. It is more logical to treat it as capital expenditures.
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To capitalize R&D,

- Specify an amortizable life for R&D (2 - 10 years)
- Collect past R&D expenses for as long as the amortizable life
- Sum up the unamortized R&D over the period. (Thus, if the amortizable life is 5 years, the research asset can be obtained by adding up 1/5th of the R&D expense from five years ago, 2/5th of the R&D expense from four years ago...:

Example: Capitalizing R&D Expenses: Boeing

Year	R&D	Unamortized Portion	Value
1989	\$754	0.10	\$75
1990	\$827	0.20	\$165
1991	\$1,417	0.30	\$425
1992	\$1,846	0.40	\$738
1993	\$1,661	0.50	\$831
1994	\$1,704	0.60	\$1,022
1995	\$1,300	0.70	\$910
1996	\$1,633	0.80	\$1,306
1997	\$1,924	0.90	\$1,732
1998	\$1,895	1.00	\$1,895
Capitalized Value of R&D Expenses =			\$9,100

Boeing's Corrected Operating Income

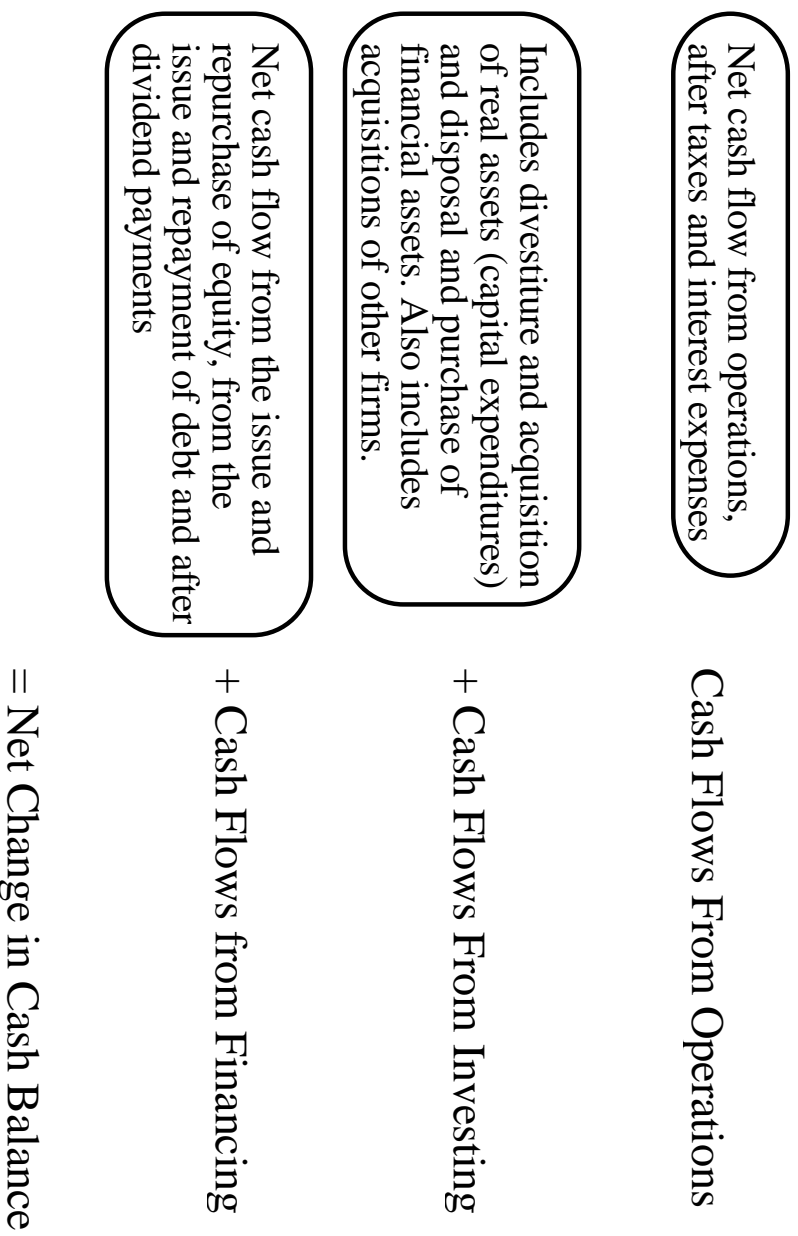
	<i>Boeing</i>
Operating Income	\$1,720
+ Research and Development Expenses	\$1,895
- Amortization of Research Asset	\$1,382
+ Imputed Interest Expense on Operating Leases	\$ 31
= Adjusted Operating Income	\$2,264

The Effect of Capitalizing R&D

- Operating Income will generally increase, though it depends upon whether R&D is growing or not. If it is flat, there will be no effect since the amortization will offset the R&D added back. The faster R&D is growing the more operating income will be affected.
- Net income will increase proportionately, depending again upon how fast R&D is growing
- Book value of equity (and capital) will increase by the capitalized Research asset
- Capital expenditures will increase by the amount of R&D; Depreciation will increase by the amortization of the research asset; For all firms, the net cap ex will increase by the same amount as the after-tax operating income.

The Statement of Cash Flows

Figure 4.3: Statement of Cash Flows



The Financial perspective on cash flows

- In financial analysis, we are much more concerned about
 - Cash flows to the firm or operating cash flows, which are before cash flows to debt and equity)
 - Cash flows to equity, which are after cash flows to debt but prior to cash flows to equity