Financials: Extracting Cash Flows

- Why do you care whether the rose is called a rose?
- A positive NPV project is a positive NPV project, no matter whether the accountants claim it lost money or gained money.

Q1: Where do you find
"Cash Flows for NPV Analysis"
on the financials?

We shall reuse the example from the book, primarily because I make too many small errors too easily when I cook up new examples.

Important: My accounting presentation is cursory. Ask me questions!

Reasons For Caring

There are many good reasons for understanding financial statements, e.g.:

- You need it for intelligent business conversations.
  - What are earnings, and how do they differ from cash flows?
  - What do the numbers on Yahoo!*Finance* mean?
- Your own company uses them. You need to understand your subsidiaries' reports.
- All public companies report them. Good and free intelligence.
- The IRS computes income tax with very similar financial computations.
- Contracts are written on accounting numbers.
- Managers care—their compensation is linked to them.

There are many other reasons to take an accounting course than just computing cash flows for use in PV analysis. Still, understanding cash flows is our own emphasis.

Financial Statements

- FASB's (public) financial statements have a number of possibly conflicting goals—not only accuracy, but also conservatism.
- Public companies must file annual 10-K and quarterly 10-Q.
- Recall the assignment to read the 2006 PepsiCo annual report.
- Financials have four components:
  - Balance Sheet. (Snapshot.)
  - Income Statement. (Flow)
  - Cash Flow Statement. (Flow)
  - Owners' Equity. (Snapshot. Ignored by us)
- We worry primarily about two—cash flows and income statement. There are the two flow statements.
- Owners' equity seems fairly useless to me.
- Balance sheet seems pretty inaccurate to me. Sometimes we need it.
- For most of recent history, FASB has focused primarily on the meaning of the numbers in the income statement. Then, they changed to caring about the balance sheet, too. However, I think they have given up on this attempt, and are now back to caring more about information about the last year.

PepsiCo Balance Sheet

13-1B

PepsiCo Income Statement

13-1B

	(in millions except per share amounts)	2001	2000	1999
	NET SALES			
1	New PepsiCo	$ 26,935	$25,479	$22,970
2	Bottling Operations	–	–	2,123
3	Total Net Sales	26,935	25,479	25,093
	COSTS AND EXPENSES			
4	Cost of sales	10,754	10,226	10,326
5	Selling, general and administrative expenses	11,608	11,104	11,018
6	Amortization of intangible assets	165	147	193
7	Merger-related costs	356	–	–
8	Other impairment and restructuring charges	31	184	73
9	Total Costs and Expenses	22,914	21,661	21,610
	OPERATING PROFIT			
10	New PepsiCo	$ 4,021	$3,818	$3,430
11	Bottling Operations	–	–	2,123
12	Total Operating Profit	$ 4,021	$3,818	$3,483
13	Bottling equity income and transaction gains/(loss), net	160	130	1,083
14	Interest expense	(219)	(272)	(421)
15	Interest income	67	85	130
16	**INCOME BEFORE INCOME TAXES**	4,029	3,761	4,275
17	**PROVISION FOR INCOME TAXES**	1,367	1,218	1,770
18	**NET INCOME**	$ 2,662	$ 2,543	$ 2,505
	NET INCOME PER COMMON SHARE			
19	Basic	$ 1.51	$ 1.45	$ 1.41
20	Diluted	$ 1.47	$ 1.42	$ 1.38

PepsiCo Cash Flow Statement

13-1B

in millions

	12/29/01	12/30/00
Cash Flows - Operating Activities		
Net income	$ 2,662	$ 2,543
Adjustments to reconcile net income to net cash provided by operating activities		
Bottling equity income, net	(160)	(130)
Depreciation and amortization	1,082	1,093
Merger-related costs	356	–
Other impairment and restructuring charges	31	184
Cash payments for merger-related costs and restructuring charges	(273)	(38)
Deferred income taxes	162	33
Deferred compensation - ESOP	48	36
Other noncash charges and credits, net	209	303
Changes in operating working capital, excluding effects of acquisitions and dispositions		
Accounts and Notes Receivables	7	(52)
Inventories	(75)	(51)
Prepaid expenses and other current assets	(6)	(35)
Accounts payable and other current liabilities	(236)	219
Income taxes payable	394	335
Net change in operating working capital	84	416
Net Cash Provided by Operating Activities	4,201	4,440
Cash Flows - Investing Activities		
Capital spending	(1,324)	(1,352)
Acquisitions and investments in unconsolidated affiliates	(432)	(98)
Sales of businesses	–	33
Sales of property, plant & equipment	–	57
Short-term investments. by original maturity		
Other, net	(381)	(262)
Net Cash Used for Investing Activities	(2,637)	(1,996)
Cash Flows - Financing Activities		
Proceeds from issuances of long-term debt	324	130
Payments of long-term debt	(573)	(879)
Short-term borrowings, by original maturity		
Cash dividends paid	(994)	(949)
Share repurchases - common	(1,716)	(1,430)
Share repurchases - preferred	(10)	–
Quaker share repurchases	(5)	(254)
Proceeds from issuance of shares in connection with the Quaker merger	524	–
Proceeds from exercises of stock options	623	690
Net Cash Used for Financing Activities	(1,919)	(2,648)

Differences in Perspective

- Accounting: Representative Picture of Firm State.
  (Not really, but close enough. [Conservatism])

- Finance: Precise Timing of Cash Flows.

- The difference is cash which has not yet changed hands, but which is "almost sure" to come.

- Example: I lend you $100 today. You will return to me $500 tomorrow for sure. Nothing else happens in this world.

  Accounting Perspective: You have earned $400 (or discounted, a little less) today. You are earning nothing tomorrow.
  Loosely, +$400 followed by $0.

  Finance Perspective: You are losing $100 today. You are gaining $500 tomorrow.
  Loosely, –$100 followed by +$500. (May be reduced for possible non-payment, time value of money, etc.)

Q2: Give some other examples.

Accruals

Loosely speaking, difference between earnings and cash flows.

- Long-Term Accruals. (Depreciation and siblings.)
- "Medium-Term" Accurals. (Deferred Taxes.)
- Short-Term Accruals. (Accounts Receivables.)

Interest, Expenses, and Net Income 13-2.A P1

For computing earnings and taxes from cash inflows:

Interest: Interest expense is immediately deducted from revenues. They are considered to be a cost of doing business.

(This will play a big part later in the course when we talk about optimal capital structure.)

Ongoing Expenses: Current operating expenses are immediately deducted from revenues.

Depreciation for Big Expenses: Capital and other expenses (including some real current operating expenses at times) cannot be immediately deducted, but are "depreciated" according to a schedule set by the IRS for the tax financials, and by FASB for the public financials (through GAAP).

- The most common may be straight-line depreciation. For example, a building that is on a 20-year straight-line depreciation and costs $100,000 has a depreciation of $5,000 each year.
- Note that the depreciation schedule is not exactly the useful life of the asset. The real useful life may be longer (buildings) or shorter (computers), espcially for tax financials.
  Unfortunately, no matter whether the depreciation schedule accurately or inaccurately reflects the life and value of the equipment, the cash to buy the asset has to go out *upfront*, not when the financials make us believe it has cost us something.
- At times, Congress (the IRS) allows accelerated depreciation schedules for assets. The details change every year.
- For the moment, just assume that the IRS and GAAP depreci-

ation schedules are the same. I will soon explain how to deal with the fact that this is not so.

Corporate Example

Project	
Real Life	6 Years
Cost	\$75 Plant Year 1
	\$75 Plant Year 2
Raw Output	\$70/year
− Input Costs	\$5/year
− Selling Expense	\$5/year
= Net Output	\$60/year
Overall Cost of Capital	12%/year
Corporate Tax Rate (τ)	40%

Available Financing — Used	
Debt Capacity	\$50
Debt Interest Rate (Coupon)	10%/year

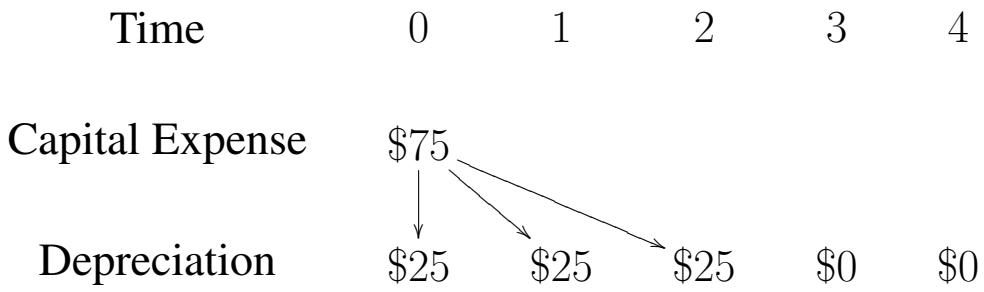
Note: Loan contract specifies first interest payment to be due in year 2.

Accounting Treatment	
Accounting Life	3 Years

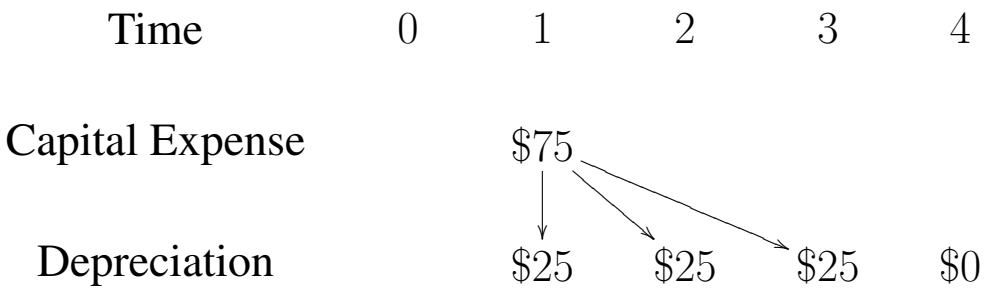
Depreciation begins in the year of the capital expense.

Depreciation

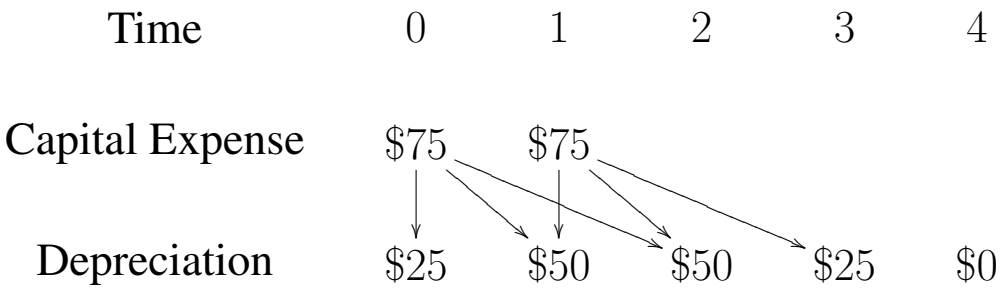
- First Expense:



- Second Expense:



- Together:



Bull?		**Income Statement**, Year	1	2	3	4	5	6
		Revenues (Gross Sales)	$70	$70			$70	$70
	–	Cost of Goods Sold (COGS)	$5	$5	$5		$5	$5
	–	(SG&A)	$5	$5	$5		$5	$5
	=	EBITDA (Net Sales)	$60	$60	$60		$60	$60
	–	Depreciation						$0
	=	EBIT (Operating Income)					$60	$60
	–	Interest Payments	$0	$5	$5		$5	$5
	=	EAIBT (or EBT)		$5			$55	$55
	–	Corporate Income Taxes	$14	$2			$22	$22
	=	Net Income		$3			$33	$33

	On The Cash Flow Statement, Year	1	2	3	4	5	6
	Capital Expenditures			-	-	-	-
	Net Issuance of Debt		-	-	-	-	

Q3: How much does this project produce for use of creditors and shareholders?

- Consider the project a black box that consumes and pays out cash.
- Issue 1: You must undo depreciation and capital expenditures treatments by the accountants.
- Issue 2: Interest is money paid out to financiers.

- First Step: The money that goes to both creditors and shareholders. How much goes in? How much goes out?
- Second Step: What of this goes to creditors and shareholders, respectively?

	Income Statement, Year	1	2	3	4	5	6
	Revenues (Gross Sales)	$70	$70	$70	$70	$70	$70
–	Cost of Goods Sold (COGS)	$5	$5	$5	$5	$5	$5
–	(SG&A)	$5	$5	$5	$5	$5	$5
=	EBITDA (Net Sales)	$60	$60	$60	$60	$60	$60
–	Depreciation	$25	$50	$50	$25	$0	$0
=	EBIT (Operating Income)	$35	$10	$10	$35	$60	$60
–	Interest Payments	$0	$5	$5	$5	$5	$5
=	EAIBT (or EBT)	$35	$5	$5	$30	$55	$55
–	Corporate Income Taxes	$14	$2	$2	$12	$22	$22
=	Net Income	$21	$3	$3	$18	$33	$33

On The Cash Flow Statement, Year	1	2	3	4	5	6
Capital Expenditures	$75	$75	-	-	-	-
Net Issuance of Debt	$50	-	-	-	-	–$50

Cash Flow Computation, Year	1	2	3	4	5	6
Loan, Principal and Interest						
Project Black Box Inflow/Outflow						
Levered Equity Inflow/Outflow						

Q4: Economically, what's real? what's fake?

(Small note: on the balance sheet, capital expenses that have not yet been depreciated are called assets.)

Q5: What are the cash flows from the full project, i.e., if you finance both loan and equity?

[Note: the capital structure of the firm remains the same. It is just that you now finance both.]

Q6: What are the cash flows to the residual equity holders?

Q7: What is the main long-term accruals related computation?

Q8: What is the main difference between accounting and finance as far as interest is concered?

Sidenote: Due the tax deductability of interest, the NPV of the project is higher when there is more debt. This will be covered later in the course.

Q9: Does the cash flow pattern mimick the net income pattern?

Q10: What are the advantages of using EBITDA, EBIT, and Net Income for project valuation?

Financial and IRS Tax Statements

- Firms have to do what Don Vito had to do: Keep multiple "accounting systems": one being the real economic one for net present value analysis, the other being the pretense financial one for financial disclosure, and finally the IRS one, which determines our tax obligation.
- Methods for the latter two are the same, the principles are the same, but the details differ—and, thus, also the numbers will differ.
- IRS statements are more "mechanical" rule-based than FASB statements. The rules change every year by the whim of Congress.
- The US considers tax financials' privacy sacrosanct.

Our Tax Payment Preferences

Q11: For our tax financials, do we prefer paying taxes early or late?

Q12: For our tax financials, do we prefer taking depreciation expenses early or late?

IMPORTANT:

- **Finance/economics cares about physical cash flows (i.e., the capital expenditure!), not (tax) accounting depreciation schedules.**
- **Because you do care about payments to Uncle Sam, there is whole other need to understand financial (tax) accounting to be able to compute physical cash flows.**

$\Rightarrow$ **Thus, otherwise (almost) irrelevant depreciation rules take on actual cash flow importance.**

Deferred Taxes

Deferred Taxes = Cumulated Differences between GAAP and IRS taxes.

- IRS = $60 depreciation in year 1, $15 in year 2. **Check IS.**
- GAAP = $25 in each of 3 years

	IRS Income Statement (not publicly reported)						
	Year	1	2	3	4	5	6
=	EBITDA, both GAAP and IRS	$60	$60	$60	$60	$60	$60
–	IRS Depreciation	$60	$75	$15	$0	$0	$0
=	EBIT (Op.Inc.), IRS	$0	–$15	$45	$60	$60	$60
–	Interest, IRS	$0	$5	$5	$5	$5	$5
=	EAIBT (or EBT), IRS	$0	–$20	$40	$55	$55	$55
–	Incometax (at 40%)	$0	– $8	$16	$22	$22	$22
=	Net Income, IRS (usually never computed), not real either	$0	–$12	$24	$33	$33	$33
vs.	Net Income, GAAP	$21	$3	$3	$18	$33	$22

	Year:	1	2	3	4	5	6
	***Reported* GAAP Income Taxes:**	**$14**	**$2**	**$2**	**$12**	**$22**	**$22**
	Actual Real Paid Tax:	$0	–$8	$16	$22	$22	$22
Difference	Illustratory "Deferred Tax" **Expense** Think "you publicly overreported taxes by"	$14	$10	–$14	–$10	$0	$0
Cumulated	**Publicly Reported GAAP "Deferred Tax" Account**	**$14**	**$24**	**$10**	**$0**	**$0**	**$0**

Q13: How do you convert reported net income into real net income?

Short-Term Accruals

- We illustrate STA with receivables.
- Receivables are one component of working capital (which also includes payables, inventories, taxes payable, etc.).
- Our Model: Our customers always pay 1 year after the sale.
- Our Sales: \$50, \$100, \$120, \$100, \$50, and \$0.
- Nothing else (depreciation, taxes, etc), so sales is income.
- **Q14:** What are our accounts receivables, what are our cash flows?

Go to next page for table

- **Q17:** Is the reported income the same as cash flow?
- **Q18:** Can we just subtract A/R from reported net income to get the cash flows?
- **Q19:** If we only have sales and A/R, what do we need to do to get the cash flows (in both examples)?

Q15: What if our customers always pay one period late?

Time	1	2	3	4	5	6
Sales = Income	$50	$100	$120	$100	$50	$0
Cash Flows Unknown						
Acc/Rec						

Q16: What if half of our customers pay immediately, while the other half delay for 1 year?

Time	1	2	3	4	5	6
Sales/Income	$50	$100	$120	$100	$50	$0
Cash Flows						
Acc/Rec						

- **Q20:** What kind of firms consume massive working capital? Generate working capital? (When in our example?)

- **Q21:** How can you raise cash flows with working capital?

Similar Working Capital Components:

- Accounts Payables.
- Inventories
- Prepaid items.
- Income taxes payable (i.e., April 15).

  Not the same as deferred income taxes.

Earnings Management

Q22: Is all earnings management illegal?

Q23: Is it easier to manage long-term or short-term accruals?

Q24: As manager, can you legally manage earnings?

Q25: As manager, can you legally manage cash flows?

Q26: How can you measure whether a firm is aggressive or conservative in its accounting?

ZZZZ Best, Waste Management, Worldcom, Enron... Occasionally the opposite: FreddieMac.

A More Complete CF Formula

		Earnings before interest and taxes (EBIT) (note: before taxes)
	–	Corporate Income Taxes
	+	Changes in Deferred Taxes
=		*Net Operating Profit*
	+	Depreciation
=		*Gross Cash Flow*
	–	Capital Expenditures
	–	Increase in Working Capital
	–	Investment in Goodwill (M&A)
	–	Increase in Net Other Assets (Catchall)
=		*Cash Flow from Operations*
	+	Non-operating Cash Flows
=		*Total Firm (Project) Cash Flow*
	–	Interest Payments
	+	Changes in Debt
=		*Cash Flow to Levered Equity*

Note: most firms require variations of this formula.

Note: changes in deferred taxes translate the public financials' tax allocations into the real tax payments.

Economic Value Added (EVA) and variants basically try to do this in real time from an accounting system.

The Accounting Cash Flow Statement

Q27: What is the main difference between the accounting view of cash flows and the finance view of cash flows?

		Cash Flow from Operating Activity (has interest subtracted out)
	+	Cash Flow from Investing Activity
	+	Interest Expense
=		*Cash Flow to Project*

	+	Net Issuance of Debt
	–	*Interest Expense*
=		*Cash Flow to Levered Equity*

Note how the "Cash Flow to Levered Equity" can be rewritten as "Cash Flow from Operating Activities" + "Cash Flow from Investing" + "Net Issuance of Debt."

Pepsico Financials

	Income Statement	December		
		2001	2000	1999
=	Revenue	26,935	25,479	25,093
	COGS	10,754	10,226	10,326
	+ SG&A	11,608	11,104	11,018
	+ Depreciation and Amortization	165	147	193
	+ Unusual Expenses	387	184	73
–	**= Total Operating Expenses**	22,914	21,661	21,610
=	**Operating Income**	4,021	3,818	3,483
+	Net Interest Income	8	–57	792
=	**Income Before Tax**	4,029	3,761	4,275
–	Income Tax	1,367	1,218	1,770
=	**Income After Tax**	2,662	2,543	2,505
–	Extraordinary Items	0	0	0
=	**Net Income**	2,662	2,543	2,505

	Cash Flow Statement	December		
		2001	2000	1999
	Net Income	2,662	2,543	2,505
+	Depreciation and Depletion	1,082	1,093	1,156
+	Deferred Tax	162	33	573
+	Non-Cash Items	211	355	–708
+	Changes In Working Capital	84	416	79
=	**Total Operating Activity**	4,201	4,440	3,605
	Capital Expenditures	–1,324	–1,352	–1,341
+	Other Investing	–1,313	–644	169
=	**Total Investing Activity**	–2,637	–1,996	–1,172
	Financing Cash Flow Items	–5	–254	–382
+	Dividends	–994	–949	–935
+	Net Issuance of Stock	–579	–740	–902
+	Net Issuance of Debt	–341	–705	391
=	**Total Financing Activity**	–1,919	–2,648	–1,828
–	Foreign Exchange Effects	0	–4	3
=	**Net Change In Cash**	–355	–208	608

All figures are in million dollars and not inflation-adjusted.

Some PepsiCo depreciation is bundled into SG&A.

Clarifications

Notes:

- The depreciation that we need is only on the cash flow statement. The one on the income statement is not complete, because some depreciation is rolled by accountants into SG&A and COGS.
- Net Income has taxes and interest already subtracted out.
- I could not figure out what "Other Investing" really was.
- PepsiCo is an ugly example. Usually firms have negative interest cash flows—PepsiCo has positive interest.

  For **Cash Flow From Operations**, usually Net Income subtracts interest expense. We then want to add it back in, because finance considers interest payment a distribution to capital providers.

  In PepsiCo's case, interest income grossed up Net Income by $8 million, so we want to subtract it back out. Thus, CFO and CFI is reduced by $8 million here.
- In 2001, PepsiCo spent more money (owners took more out) than the firm's project produced. This would have had to come from their stock of cash lieing around.

Homework Assignment

1. Reread Chapter 13.
2. Read Chapter 14.
3. Hand in all Chapter 13 end-of-chapter problems, due in 7 days.