

Off-Balance Sheet Financing Techniques

(1) Leases

Firms which have noncancelable operating leases have *de facto* debt. The following adjustment procedure is appropriate.

- Calculate Present Value of future payments. Information for this calculation can be obtained from the footnotes:
 1. Future payments: *Next five years* given year by year. *Total thereafter* can be broken down after assuming appropriate “decay” rate (lease term)
 2. *Discount Rate* can be estimated by looking at firm’s long-term debt or by rate implicit in firm’s existing *capital leases*.
- Add present value to liabilities (and assets) of firm.

(2) Pensions/ Postretirement Benefits--

Adjust B/S liability to reflect economic status of pensions based on ABO or PBO

Adjust B/S liability to reflect economic status of postretirement benefits based on APBO

(3) Joint Ventures and (finance) subsidiaries

Note -- one doesn’t always need F/S of affiliate as firms will often identify in footnotes (Contingent Liabilities) the extent to which they are liable for or have guaranteed debt of their affiliates. Additionally attention should be paid to “grandchildren”; i.e. parent has subsidiary and subsidiary has subsidiary where there is a significant portion of debt. (See Texaco and Caltex example in problem section of Chapter 10).

(4) Take-or-pay and/or through-put contracts.

Firms may enter into long term contracts with their suppliers promising to buy a certain amount of raw material every year for “n” years at a price agreed to at the time of the contract. They must pay the agreed upon amount even if they don’t take delivery. Such arrangements should be treated in a similar fashion as noncancelable operating leases [(1) above].

(5) Redeemable preferred shares (See Chapter 8 - p. 574)

These “preferred” shares should be treated as debt not equity. [Note - the SEC requires that redeemable preferred shares be reported separately from stockholder’s equity] . These shares constitute a fixed preference in liquidation and the dividend payments are fixed and often cumulative. In calculating the amount of the liability any dividends in arrears (if they are cumulative) should be included.

(6) Sale of Receivables

Firms often “sell” (or securitize) their receivables to third parties (recording the transaction as a debit to cash and credit to A/R). As long as the seller is subject to recourse for an amount greater than or equal to the normal bad debt expense, then effectively the firm has borrowed the money and used the A/R as collateral. The appropriate adjustment should be to increase A/R and debt by the amount of the sold receivables still uncollected.

(Note - in this transaction the firm has recorded CFF as CFO)

(7) Contingent Liabilities - self-explanatory

Year	BUY		and	BORROW		!!	CAPITAL LEASE	
0	PP&E	1000		Cash	1000	!!	Leasehold Asset	1000
	Cash		1000	Loan Payable		1000 !!	Leasehold Liability	1000
1	Dep Exp	333		Int Exp	100	!!	Lease Expense	433
	Acc Dep		333	Loan Payable	302	!!	Leasehold Liability	302
				Cash		402 !!	Cash	402
						!!	Leasehold Asset (Acc Amm)	333
2	Dep Exp	333		Int Exp	70	!!	Lease Expense	403
	Acc Dep		333	Loan Payable	332	!!	Leasehold Liability	332
				Cash		402 !!	Cash	402
						!!	Leasehold Asset (Acc Amm)	333
3	Dep Exp	333		Int Exp	36	!!	Lease Expense	369
	Acc Dep		333	Loan Payable	366	!!	Leasehold Liability	366
				Cash		402 !!	Cash	402
						!!	Leasehold Asset (Acc Amm)	333

	B&B / Capital Lease				Operating Lease	
	I/S	CFO	Asset	Liability	I/S=CFO	A&L
1	(433)	(100)	667	698	(402)	-
2	(403)	(70)	333	366	(402)	-
3	(369)	(36)	-	-	(402)	-

AMR
Excerpts from Balance Sheet and Lease Footnotes

December 31, 1994

Assets		
Equipment and property (net of accumulated depreciation of 5,465)		\$12,020
Equipment and property under capital leases (net of accumulated amortization of 1,166)		1,878
Total assets		19,486
Liabilities		
Long-term debt		
Current maturity	590	
Noncurrent	<u>5,603</u>	6,193
Capital lease obligations		
Current	128	
Noncurrent	<u>2,275</u>	<u>2,403</u>
Total long-term debt and capital lease obligations		8,596
Shareholders equity		\$ 3,380

Leases

AMR's subsidiaries lease various types of equipment and property, including aircraft, passenger terminals, equipment, and various other facilities. The future minimum lease payments required under capital leases, together with the present value of net minimum lease payments, and future minimum lease payments required under operating leases that have initial or remaining noncancelable lease terms in excess of one year as of December 31, 1994, were (\$ in millions):

Year Ending December 31	Capital Leases	Operating Leases
1995	\$ 273	\$ 946
1996	300	924
1997	280	920
1998	276	931
1999	270	912
2000 and subsequent	<u>2,440</u>	<u>15,378</u>
	\$3,839	\$20,011
Less amount representing interest	<u>1,436</u>	
Present value of minimum lease payments	\$2,403	

At December 31, 1994, the Company had 216 jet aircraft and 123 turboprop aircraft under operating leases and 82 jet aircraft and 63 turboprop under capital leases.

Source: AMR, 1994 Annual Report.

Estimation of the Present Value of Operating Leases

A. *The Implicit Discount Rate of a Firm's Capital Leases*

Two approaches may be employed to estimate the average discount rate used to capitalize a firm's capital leases. The first uses only the next period's MLP; the second incorporates all future MLPs in the estimation procedure.

1. *Using Next Period's MLP*

The 1995 MLP for AMR's capital leases is \$273 million. That payment includes interest and principal. The principal portion is shown in AMR's current liabilities section as \$128 million. The difference between the two, \$145 million, represents the interest component of the MLP. As the present value of AMR's capital leases equals \$2,403, the interest rate on the capitalized leases can be estimated as $(\$145/\$2,403)$ 6.03%.

This calculation assumes that the principal payment of \$128 million will be made at the end of the year. If it is made early in the year, then the interest expense is based on the principal outstanding after payment of the current portion. If the current portion is a significant portion of the overall liability, then the results can be biased. An alternative estimate of the implicit interest rate may be derived using the average liability balance; that is, $\$145/[0.5 \times (\$2,403 + \$2,275)] = 6.2\%$.

2. *Using All Future MLPs*

The interest rate can also be estimated by solving for the implicit interest rate (internal rate of return) that equates the MLPs and their present value. This calculation requires an assumption about the pattern of MLPs after the first five years. As discussed further in the next section (with reference to operating leases), the simplest assumption is that the payment level (\$270 million) in the fifth year (1999) continues to the future, implying the following payment stream:

Year	Payments
1995	273
1996	300
1997	280
1998	276
1999	270
2000-2008	270
2009 (residual)	\$ 10
	\$3,839

The internal rate of return that equates this stream to the present value of \$2,403 is 7.0%.

Alternatively, one can assume a declining rate of payments with a decline rate based on the payment pattern of the first five years. In AMR's case, payments increase initially and then decline slowly as the payment levels of 1998 and 1999 are approximately 98% of the previous year. Using this pattern and assuming payments of

$$(0.98 \times \$270) = \$264 \text{ in the year 2000}$$

$$(0.98 \times \$264) = \$256 \text{ in the year 2001}$$

and so on result in an internal rate of return of 6.9%, very close to the 7.0% based on the constant rate assumption. Generally, the differences are not significantly different, and unless the rate of decline is very steep, the constant rate assumption simplifies the computation.

The first procedure yields an estimate of 6.0 to 6.2%; the second yields estimates of 6.9 to 7.0%. Based on these estimates, we use 6.5% for our analysis of AMR's operating leases.

B Assumed Pattern of MLPs

The MLPs for the first five years (1995 to 1999) are given. From the year 2000 and on, two assumptions are possible:

1. Constant rate, or
2. Declining rate

Under the constant rate assumption, it is assumed that MLPs from the year 2000 and on equal the 1999 payment of \$912. Alternatively, and more realistically, one would expect the payments to decline over time. The rate of decline implicit in the MLPs reported individually for the first five years may be used to estimate the payment pattern after the initial five years. Based on that payment pattern, we use a decline rate of 1.8%. The assumed patterns and the resultant present values are presented below.

Assumed Pattern of MLPs for Operating Leases

Initial five-year given payments

<i>Year</i>	<i>MLPs</i>
1995	946
1996	924
1997	920
1998	931
1999	912

Year	Assumed Payment Rate	
	Constant Amount	Declining Rate (1.8%)
2000	\$912	\$896
2001	912	879
2002	912	864
2003	912	848
2004	912	833
2005	912	818
2006	912	803
2007	912	789
2008	912	774
2009	912	760
2010	912	747
2011	912	733
2012	912	720
2013	912	707
2014	912	694
2015	912	682
2016	786	670
2017		658
2018		646
2019		634
2020		224
Aggregate	\$20,011	\$20,011
Present value at 6.5%	\$10,515	\$10,212

Note: the two present value estimates of \$10.5 and \$10.2 billion are within 3% of each other.

*Residual to arrive at aggregate MLPs of \$20,011.

Sales (securitization) of Receivables

(or hiding receivables and payables off-balance sheet)

Before we examine receivable securitization; consider a situation where a firm has \$1,000 of receivables and the firm borrows \$1,000 from the bank using the receivables as collateral.

- The \$1,000 received would be treated as Cash from Financing.
- The balance sheet would show

Accounts receivable	\$1,000	Short-term debt	\$1,000.
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Sale of Receivables

Receivables are sometimes financed by the sale (or securitization) to unrelated parties. That is the firm “sells” the receivables to a buyer (normally a financial institution).¹ The firm uses the proceeds from the sale to continue operations or reduce debt. The firm services the original receivables; i.e. it collects from the original customers and passes the money on to the financial institution.

Such transactions are generally recorded as sales. That is, the firm decreases Accounts Receivable and increases Cash from Operations. Thus, if the firm would sell \$1,000 of its receivables,

- it would show an increase of cash from operations if \$1,000 and
- no receivable or debt on its balance sheet.

However, most sales of receivables provide that the buyer has “limited recourse” to the seller. As the recourse provision is generally well above the expected loss ratio on the receivables; the seller retains all the expected loss experience. These transactions are therefore effectively collateralized borrowings with the receivables being the collateral against the loan **as in our illustration above**. Sales of receivables are thus a form of off balance sheet financing and should be adjusted accordingly.

(1) Accounts Receivable and Current Liabilities should be increased by

➤ the balance of receivables sold and uncollected.

(2) The original classification of the cash as CFO must be corrected as the cash received from the finance company is debt and hence should be treated as cash from financing. The adjustment is to deduct from CFO (add to CFF)

➤ the change in the balance of receivables sold and uncollected.

¹ The sale is usually done at a discount. The discount is the profit earned by the buyer. We are ignoring this discount in our discussions.

Illustration: AMR and Delta Airlines

The attached exhibit presents excerpts from AMR and Delta Airlines' financial statements and footnotes describing their sale of receivables. AMR has been engaged in receivable sales since 1991 and the outstanding uncollected receivables was \$300 million in 1992 and 1993 and decreased to \$112 million in 1994.

Delta first began such sales in 1994. The footnote states that Delta sold \$489 in accounts receivable and received two notes (one for \$300 million and the other for \$189 million) in return. They then sold one of the notes for \$300 million and received cash for it. As the remaining note of \$189 is kept on Delta's books as an accounts receivable we only have to focus on the \$300 million for which they received cash. The nature of Delta's receivables sale is slightly more complex than AMR's as Delta sold receivables to one party and received cash from another. Nonetheless, the effects of the transaction and the required adjustments are similar.

Balance Sheet: For both companies their respective footnotes acknowledge that they maintain on their books an allowance for doubtful accounts which include allowances for the receivables sold. Thus, as Delta states explicitly "the Company has substantially the same credit risk as if the Receivables had not been sold". The proceeds should therefore not be viewed as a reduction of receivables but rather as an increase in (short-term) borrowing. In AMR's case 1994 Accounts Receivable and Current Liabilities should be increased by \$112 million, whereas in 1993 these amounts should be increased by \$300 million. For Delta, 1994 Accounts Receivables and Current Liabilities should be increased by \$300 million.

Cash Flow Classification: Accounting for these transactions as sales distorts the pattern of CFO as the firm receives cash earlier than if the receivables had been collected in due course. An adjustment is required which reclassifies *the change in the uncollected receivables sold*² from CFO to Cash from Financing.

If the balance in the uncollected receivables stays the same each year, there is no distortion. Any variation, however, affects the year-to-year comparison of cash flows.

Delta's footnote points out the \$300 million increased Cash from Operations in 1994. This amount should be removed from 1994 CFO and transferred to Cash from Financing. For AMR there is no adjustment required for 1993 as the uncollected

² This can best be understood if we consider that one of the addbacks to net income to arrive at CFO is the change in Accounts Receivables. Since in the balance sheet adjustments made earlier, the reported accounts receivables was increased by the uncollected balance of the receivables sold, the change in receivables balance must now be altered by the change in the uncollected receivables sold.

AMR AND DELTA Sale of Receivables
Excerpts from Footnotes and Balance Sheet

	<u>AMR</u>		<u>DELTA</u>	
	1994	1993	1994	1993
Cash and short-term investments	\$ 777	\$ 586	1,710	\$1,180
Accounts receivable, net	<u>1,206</u>	<u>910</u>	<u>886</u>	<u>1,055</u>
"Quick assets"	\$1,983	\$1,496	\$2,596	\$2,235
Current liabilities	4,914	4,417	3,536	3,019
Cash from operations	\$1,609	\$1,377	\$1,324	\$ 677

From AMR's 1994 Annual Report

Commitment and Contingencies Footnote

In July 1991, American entered into a five-year agreement whereby American transfers, on a continuing basis and with recourse to the receivables, an undivided interest in a designated pool of receivables. Undivided interests in new receivables are transferred daily as collections reduce previously transferred receivables. At December 1994 and 1993, receivables are presented net of approximately \$112 million and \$300 million, respectively, of such transferred receivables. American maintains an allowance for uncollectible receivables based upon expected collectability of all receivables, including the receivables transferred.

From AMR's 1993 Annual Report .

Commitment and Contingencies Footnote

. . . At December 1993 and 1992, receivables are presented net of approximately \$300 million of such transferred receivables

From Delta's 1994 Annual Report

Sale of Receivables Footnote

On June 24, 1994, Delta entered into a revolving accounts receivable facility (Facility) providing for the sale of \$489 million of a defined pool of accounts receivable (Receivables) through a wholly-owned subsidiary to a trust in exchange for a senior certificate in the principal amount of \$300 million (Senior Certificate) and a subordinate certificate in the principal amount of \$189 million (Subordinate Certificate). The subsidiary retained the Subordinate Certificate and the Company received \$300 million in cash from the sale of the Senior Certificate to a third party. The principal amount of the Subordinate Certificate fluctuates daily depending upon the volume of receivables sold, and is payable to the subsidiary only to the extent the collections received on the Receivables exceed amounts due on the Senior Certificate. The Facility, which replaced an interim facility established in March 1994, is scheduled to terminate in July 1995, subject to earlier termination in certain circumstances.

At June 30, 1994, the \$300 million net proceeds from the sale were reported as operating cash flows in the Company's Consolidated Statements of Cash Flows and as a reduction in accounts receivable on the Company's Consolidated Balance Sheets. The Subordinate Certificate is included in accounts receivable on the Company's Consolidated Balance Sheets. The full amount of the allowance for doubtful accounts related to the receivables sold has been retained, as the Company has substantially the same credit risk as if the receivables had not been sold.

Source: AMR and Delta, 1993-1994 Annual Reports

receivables were \$300 million in both 1992 and 1993. In 1994, the uncollected receivables decreased by \$188 million. Thus, 1994 CFO is understated by this amount as AMR reported this cash as part of CFO in earlier years.

Generally, adding back the receivables and increasing short-term debt will hurt a firm's accounts receivable turnover (increased A/R) and leverage ratios (increased debt) and also generally damage a firm's reported short-term liquidity position. Similarly, when the level of receivable sold increases; (i.e. the uncollected receivables increases) the adjustment procedure will worsen CFO and any related ratios.

Adjusting Balance Sheet for AMR and Delta's Sale of Receivables
Increase Accounts Receivables and Current Liabilities by

	AMR		DELTA	
	\$112 in 1994 and \$300 in 1993		\$300 in 1994	
Adjusted Numbers:	1994	1993	1994	1993
Cash & Short-term investments	777	586	1,710	1,180
Account Receivable, net of allowance	<u>1,318</u>	<u>1,210</u>	<u>1,186</u>	<u>1,055</u>
“Quick Assets”	2,095	1,796	2,896	2,235
Current Liabilities	5,026	4,717	3,836	3,019

Adjusting CFO for AMR and Delta's Sale of Receivables
Deduct (Add) Net Proceeds from (to) CFO

	AMR		DELTA	
	(\$188) in 1994		\$300 in 1994	
	1994	1993	1994	1993
Cash From Operations	1,797	1,377	1,024	677

Effects of Adjustment:

The effects of these adjustments can be demonstrated using selected data.

Comparison of Selected Data

	<i>As Reported</i>		<i>After Adjustment</i>	
	AMR	DELTA	AMR	DELTA
% Change in Receivables-1994	32.3%	(16.0)%	8.9%	12.4%
Quick Ratio	40.3%	73.4%	41.7%	75.5%
% Change in CFO - 1994	16.8%	95.6%	30.5%	51.2%
CFO/Current Liabilities -1994	32.7%	37.4%	35.8%	26.7%
-1993	31.2%	22.4%	29.2%	22.4%

JOINT VENTURES

Equity versus Consolidation

Accounting Treatment

- (a) Used for investees when parent is considered to have significant influence. Operationally,
- equity method used for holdings between 20%-50%
 - (full) consolidation for holdings in excess of 50%

(b) Subsidiaries are treated as part of parent Just as parent's financial performance is measured on the basis of revenues / expense / income, the subsidiary's contribution to the parent is similarly measured; i.e. income from subsidiary / affiliate is not a function of dividends and capital gains but rather is based on (a portion of) actual income of subsidiary.

(c) In full consolidation, two companies are treated as one. Assets and liabilities of both entities are added together on balance sheet. Similarly on income statement, revenues and expenses are added together. Minority interest is subtracted to reflect portion 'not belonging' to parent

- Note: although generally not US GAAP, proportional consolidation is another possibility. It is used in foreign countries and is most useful for analytic purposes. We therefore include it in our example. Proportional Consolidation only picks up parents share of assets/liabilities and revenues/expenses. No need for Minority interest.

(d) Equity method is "one-line" consolidation. On parent's balance sheet, (proportion of) net assets carried as investment in affiliates; on parent's income statement parent's share of subsidiary income included as one line item. Investment account is increased by income of subsidiary and decreased by dividends paid be sub to parent.

—See example for contrast in approaches

(e) In terms of income measurement and net book values (i.e. equity), equity method and consolidation are identical. Difference lies in terms of detail on income statement and balance sheet. Individual assets and liabilities not included; similarly individual revenue and expense items ignored.

Below are financial statements of parent (P) and subsidiary (S) prior to purchase by P of 50% of S for \$5 (i.e. 50% of S book value of 10)

	<u>P</u>	<u>S</u>
Assets	100	50
Liabilities	70	40
Equity	<u>30</u>	<u>10</u>
	<u>100</u>	<u>50</u>

Upon purchase, the statements on an equity, consolidated (full and proportional) are presented below. (Note: parent's assets are 95 since they paid 5 for affiliate)

	<u>Equity</u>	<u>Consolidation</u>	
		<u>Full</u>	<u>Proportional</u>
Assets	95	145	120
Investment in Affiliates	<u>5</u>	---	---
	<u>100</u>	<u>145</u>	<u>120</u>
Liabilities	70	110	90
Minority Interest		5	
Equity	<u>30</u>	<u>30</u>	<u>30</u>
	<u>100</u>	<u>145</u>	<u>120</u>

In Year 1 following purchase, assume these are income statements of parent(alone) and subsidiary.

	<u>P(alone)</u>	<u>S</u>
Revenues	50	10
Expenses	<u>30</u>	<u>8</u>
Net Income	<u>20</u>	<u>2</u>

:

Yr 1 Parent Income Statements	<u>Equity</u>	<u>Consolidation</u>	
		<u>Full</u>	<u>Proportional</u>
Revenues	50	60	55
Expenses	<u>30</u>	<u>38</u>	<u>34</u>
	<u>20</u>	<u>22</u>	<u>21</u>
Income from Affiliate	1		
Minority Interest	---	(1)	---
Net Income	<u>21</u>	<u>21</u>	<u>21</u>

Yr 1 Balance Sheets	<u>P (Equity)</u>	<u>S</u>	<u>Consolidation</u>	
			<u>Full</u>	<u>Proportional</u>
Assets	115	52	167	141
Investment in Affiliates	<u>6</u>		---	---
	<u>121</u>		<u>167</u>	<u>141</u>
Liabilities	70	40	110	90
Minority Interest			6	
Equity	<u>51</u>	<u>12</u>	<u>51</u>	<u>51</u>
	<u>121</u>	<u>52</u>	<u>167</u>	<u>141</u>

For equity method, analysis is unbalanced; e.g.

(a) Profitability measures

- Bottom line income includes subsidiary; subsidiary assets needed to generate them are not included. Thus, measures such as RCA are biased. [Note: ROE is okay]
- Bottom line income includes subsidiary; elements of subsidiary expenses not included. Thus return on sales measures biased; Similarly interest coverage ratios biased as numerator includes subsidiary income whereas denominator does not have subsidiary interest expense (see (b)). Subsidiary income will first have to be used to cover subsidiary interest expense.

(b) Solvency Measures

- Although equity is included, the individual assets and liabilities are not. This has important implications for credit analysis.
 - liabilities are hidden in subsidiaries
 - what is actual fixed interest charge obligation?
 - nature of parents assets unknown; are they soft; tangible or intangible?

See Case 13-1 Coca-Cola