Airplane Finance

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Air Transportation Management

M.Sc. Program

Fundamentals of Airline Management

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Objectives

- **Ability to understand and *use* three key financial statements typically used by companies for reporting purposes**
  - Income Statement;   Balance Sheet;   Cash Flow
- **Understand and use common financial ratios**
- **Use MonteCristoAir's financials to understand their historic performance and make appropriate strategic decisions**
- **Understand the implications of various financing structures**

Basic financial statements

We need to record the activities that represent our basic business

Income Statement: "Profit and Loss Statement"

Basic equation:

Revenues ***Minus*** ***Expenses*** ***Equals*** ***Profit***

Revenues	Expenses	Profit
What we are paid for what we are in business to do	What it costs us to do it	The gain in value for our shareholders

Revenues	
Passenger	1,258
Freight and mail	95
Other	64
Total	1,417

Expenses	
Wages	427
Fuel	401
Rentals	172
Commissions	93
Maintenance	79
Depreciation	68
Other	101
Total	1,341

Profit	
Operating profit	76
Interest	42
Taxes	17
Net income	17

Basic financial statements

Statement of Financial Position: "Balance Sheet"

Basic equation:

Assets = **Liabilities + Owners' Equity**

Things of value — *What the company owes and to whom*

Cash	135	Payables	215
Receivables	88	Current portion LTD	56
Inventory and others	115	Customer Deposits	174
Current assets	338	Current liabilities	445
Net property, plant, and equipment	975	Long term debt	522
		Other liabilities	134
		Owners' equity	212
Total assets	1,313	Total liabilities and owners' equity	1,313

Basic financial statements

We also need to record other activities such as buying and selling assets and borrowing and repaying loans …..

Statement of Cash Flows: "Cash Flow Statement"

Basic equation:

Cash from operations	+	Cash from investing	+	Cash from financing	=	Net Cash Flow

Cash from operations		Cash from investing		Cash from financing	
Net income	17	Equipment Purchases	-93	New borrowings	199
Depreciation	68	Asset sales	4	Debt repayments	-268
Changes in working Capital	40	Investments	-12	Sale/leasebacks	56
				New equity	3
Operating CF	125	Investing CF	-101	Financing CF	-10

Net CF 14

Relationships and ratios

If you were asked to invest your money in or lend money to a company, what are some questions you might ask?

Questions	*Measures*	*Examples*
Is the company profitable?	*Profit margins* *(Profit as percentage of revenue)*	*EBITDAR margin* *Operating & net margins*
How risky is this business?	*Capitalization (leverage)* *(Debt's share of capital)*	*Debt-to-equity* *Debt-to-capital*
Can they pay their bills and debts on time?	*Coverage* *(Profits available to pay interest)* *(Cash earnings to cover debt servicing)* *Liquidity* *(Cash availability)* *(Ability to cover near-term obligations)*	*Times interest earned* *EBITDAR/Prin+Int+Rentals* *Cash flow-to-total debt* *Cash as a % of revenue* *Current ratio* *Working capital*
What's in it for me as an investor?	*Risk/Return* *Shareholders' gains*	*Return on assets* *Return on equity*

Relationships and ratios

Profitability Ratios

Operating margin measures the efficiency of the company's operations

- Operating margin = operating profit / operating revenue
  - ***EBITDAR margin = (operating profit + depreciation + amortization + rentals) / operating revenue***

	Operating Margin Calculation	EBITDAR Margin Calculation
Operating profit	***76***	***76 +68 +172***
Operating revenues	***1,417***	***1,417***
Operating margin (%)	$\boxed{5.4\%}$	$\boxed{22.3\%}$

The higher the margin, the more profitable the business

Relationships and ratios

Profitability Ratios (cont.)

Net margin measures the total performance of the company from the point of view of the shareholder

- Net margin = net income / operating revenue

	Net Margin Calculation
Net Income	***17***
Operating Revenue	***1,417***
Net Margin (%)	***1.2%***

The higher the net margin, the more profitable the business

Relationships and ratios

Capitalization Ratios

Debt to equity

Measures the proportion of borrowed money to investors' money that has been used in developing the company's financial position

Debt to equity = debt / equity

	Typical calculation	Adjusted for Operating leases
Debt	522 + 56 = 578	578 + (7.5 x 172) = 1,868
Equity	212	212
Debt-to-equity	$\boxed{2.73}$	$\boxed{8.81}$

The higher the debt ratios, the riskier the business

Relationships and ratios

Coverage Ratios

Times interest earned

Measures the profit available to "cover" interest expense

TIE = operating profit / interest expense

	Typical calculation
Operating Profit	76
Interest Expense	42
Coverage	1.81

The higher the ratio, the more cover provided and the lower the risk to creditors

Relationships and ratios

Coverage Ratios (cont.)

Cash flow to total debt

Measures the relationship between debt and the cash from company operations that could pay off the debt

CFTD = cash from operations / total debt

	Typical calculation
Cash from Operations	125
Total debt	578
Cash flow to total debt (%)	21.6%

The higher the better from a credit perspective

Relationships and ratios

Shareholders' Gains

Return on assets

Measures the profitability generated by the company's asset base. There are two methods: one recognizes capitalization, one does not

ROA = net income / total assets

	Typical calculation
Net Income	***17***
Total Assets	***1,313***
Return on Assets (%)	***1.3***

The higher the better from an investor's perspective

Relationships and ratios

Shareholders' Gains (cont.)

Return on equity

Measures the rate of return to the stockholders

ROE = net income / owners' equity

	Typical calculation
Net Income	***17***
Owners' Equity	***212***
Return on Equity (%)	$\boxed{\mathbf{8.0}}$

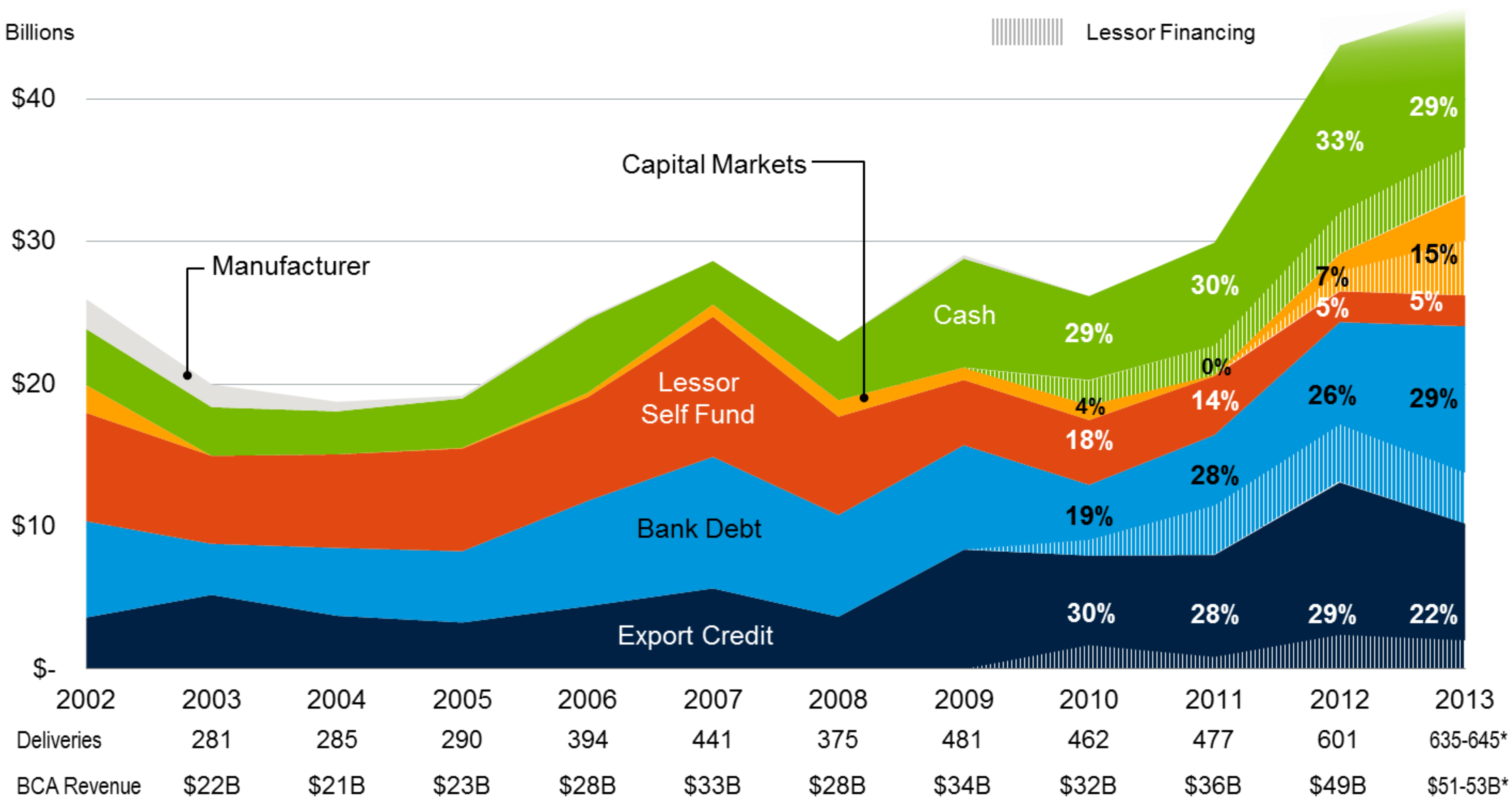
The higher the better from an investor's perspective

Financing Options

- **Lease vs. Buy**

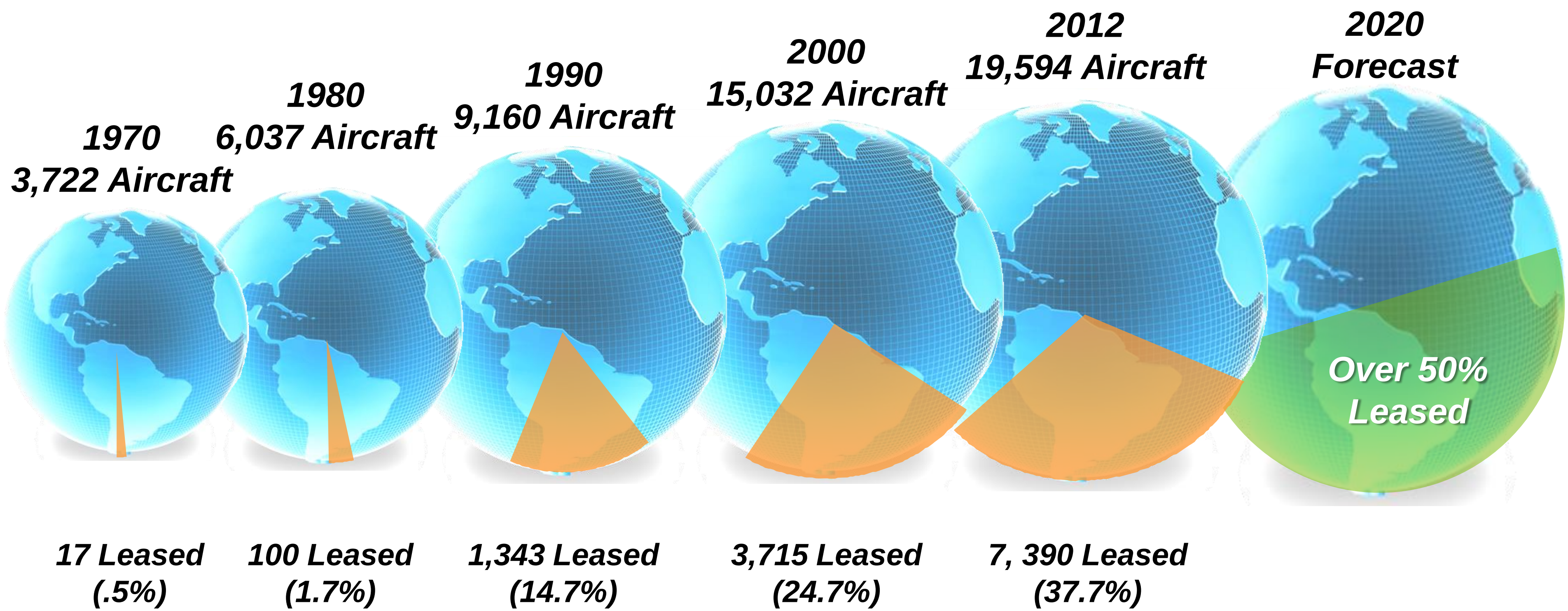
Sources of financing for Boeing deliveries

Forecast for 2013



**Guidance as of Boeing's July 24, 2013 earnings release. BCA Revenue includes revenue from commercial aviation services.*

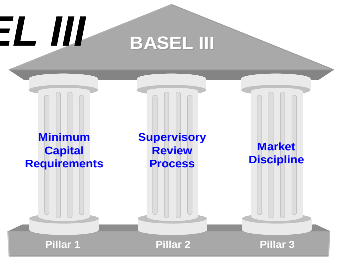
World Airline Fleet: 1970 to 2012



Source: Ascend, Boeing analysis

Operating lease demand accelerators

BASEL III

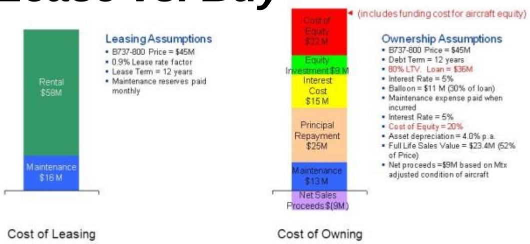


- ***Commercial debt only available on shorter tenors and for better credits***
- ***In 2011, 43% of commercial bank debt went to lessors***

Export Credit

- ***More expensive Export Credit will drive demand for operating leases***

Lease vs. Buy



- ***Lease versus Buy economics favor operating lease***

Advantages and Disadvantages of Operating Leases

Advantages

- *Capital investment requirements reduced*
- *Can increase fleet plan flexibility*
- *Lessor assumes aircraft residual value risk*
- *Airplane may be available for earlier delivery*
- *Financial statement impact minimized*

Disadvantages

- *Airline exposed to lease rate fluctuations*
- *Airline does not gain equity in the fleet*
- *May have smaller tax benefits than purchase or finance lease*
- *Airline must satisfy lease contract requirements (administrative, reporting, maintenance)*
- *Lessor may restrict the use of the aircraft*
- *Lessee pays withholding or other additional taxes*

Risk/Benefit Sharing in Leasing

- **Owner**
  1. Assumes risk of changing aircraft values over economic life of aircraft (asset risk)
  2. Assumes credit risk of operator to pay lease rentals
  3. Receives benefit of tax depreciation deductions
  4. Receives rentals from lessee (operator of aircraft)

- **Lessee**
  1. Has usage of aircraft without ownership costs or asset risk
  2. Requirement to pay for use of aircraft over time versus up-front purchase
  3. Shifts asset risk to third party (owner)
  4. Receives lower rentals as a result of U.S. tax benefits from aircraft ownership
  5. In most cases, aircraft lease obligations are not considered “debt” and are not shown on airline balance sheet

Advantages and Disadvantages of Purchase

Advantages

- *Maximum airline control of airplane configuration*
- *Airline acquires equity in fleet*
  - *Equity can be used as a source of cash*
- *Significant tax benefits (varies by country)*
- *Benefits to airline from aircraft's residual value*
- *Most financially attractive option in many cases*

Disadvantages

- *Large investment and financing requirements*
- *Residual value risk*
- *Restrictions included in loan covenants*
- *Less fleet plan flexibility than operating lease*

How do other carriers handle lease vs. buy?

Looking forward, we have firm commitments to take delivery of an additional 42 Boeing 737 aircraft, with 33 Boeing 737 aircraft leases expiring between 2014 and 2018, each with the option to renew. Additionally we have an agreement in place to sell 10 Boeing 737 aircraft between 2014 and 2015. This provides us with the <u>flexibility</u> to end 2018 with a 737 fleet size between 102 and 135, depending on the exercise of the lease renewal options.

WESTJET

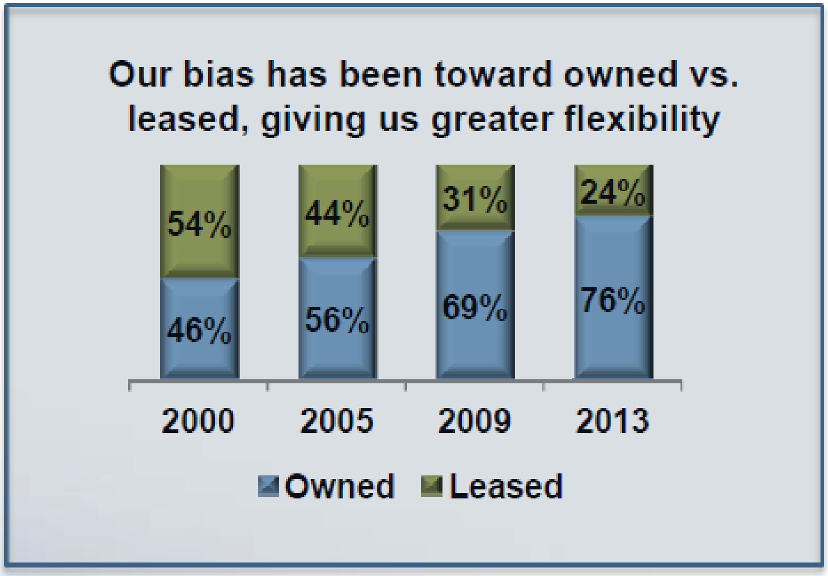
FLEET AND PAX GROWTH TO 2018

	New Aircraft	Lease Returns / Disposals	Year End Fleet	Pax No's (m's)	Pax Growth
FY 14	0	-15	290	**82**	**+ 3%**
FY 15	11	-3	298	**84**	**+ 3%**
FY 16	35	-5	328	**89**	**+ 6%**
FY 17	50	-24	354	**96**	**+ 7%**
FY 18	50	-18	386	**103**	**+ 7%**
FY 19	29	-5	410	**110**	**+ 7%**
Total	**175**	**-70**	**410**		

Ability to flex growth (via lease returns/disposals) to service opportunities

RYANAIR

Alaska Air Group



Summary

- **Operating leasing Is attractive to many airlines**
  - Low impact on balance sheet
  - Flexibility
  - No residual value risk
- **Most airplanes are purchased**
  - Most financially attractive option in many cases
  - Attractive tax benefits (varies by country)
  - Builds equity
- **Financing options vary widely by airline and location**
- **Many airlines use both purchases and operating leases**

Key takeaways

1) Financial Statements will allow you to determine how a business is performing
2) Positive Cash Flow is crucial to long-term success
3) A healthy balance between debt and equity (owners money) will balance risk and return
4) A mix of financing strategies provides flexibility

MonteCristoAir case study connection

1) Your team can use these ratios and calculations to ‘keep score’ of your decisions
2) Your investment decisions will impact your team’s financial position
   - Operations (profits)
   - Ratios (debt/equity/coverage)
3) Consider the ‘proper’ mix of purchased vs. leased aircraft