

# ASCEND BUSINESS BRIEFING

Tuesday 04 November 2008, Hong Kong



# VALUES FACE THE CRUNCH

Welcome

Gehan Talwatte, Managing Director

Presentations from the Ascend team

- Market Outlook
- Questions for the audience
- Capacity cuts
- Confidence in numbers
- Asset value movements and trends

Eddy Pieniazek, Director and Head of Consultancy

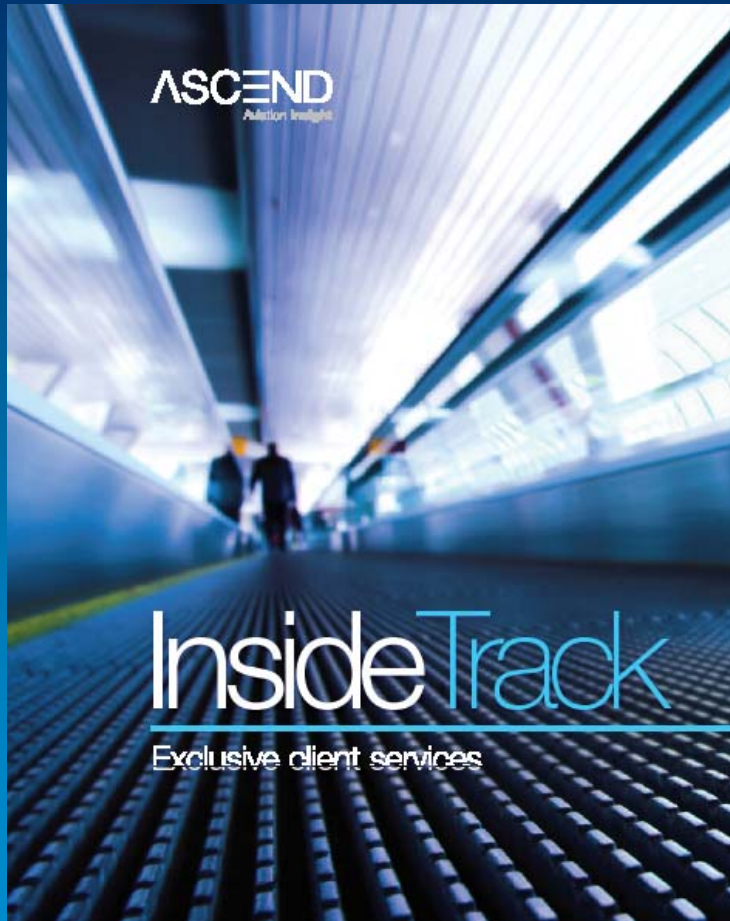
Shamin Mughal, Statistical Analyst

Question and Answer session

WELCOME

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GEHAN TALWATTE



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Business Briefings

New York  
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Community

(<http://ascend.aviation2020.net>)

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- ❑ Full Life and Half Life Values
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All the data you need. Dynamically updated. In one place.

"Ascend Online is our primary source for aircraft information."

Mark S. Streeter, Managing Director, JP Morgan

## NEW FEATURE FLEET VALUES

Fleet	Fleet Values															
Context	Select Company	British Airways	Go												New Query	Home
															Export XL	PDF
Aircraft			Total				Owned				Leased					
Manufacturer	Type	Variant	No	Av. Age	BV (US\$m)	MV (US\$m)	No	Av. Age	BV (US\$m)	MV (US\$m)	No	Av. Age	BV (US\$m)	MV (US\$m)		
Airbus	A318		100	0	0	0										
Airbus	A319		100	33	7	718	728	23	7	499	506	10	7	219		
Airbus	A320		200	29	6	829	848	14	3	487	491	15	10	342		
Airbus	A321		200	11	2	439	431	11	2	439	431	0		0		
Airbus	A380		800	0	0	0	0									
Boeing	737 (CFMI)	300 Series	5	18	35	34					5	18	35			
Boeing	737 (CFMI)	400 Series	19	16	193	191	15	15	154	153	4	17	39			
Boeing	737 (CFMI)	500 Series	9	15	81	79					9	15	81			
Boeing	747	400 Series	57	15	2,241	2,325	52	13	2,078	2,159	5	17	163	1		
Boeing	757	200 Series (P&W & RR 'E4...	13	16	190	204	12	13	180	192	1	19	10			
Boeing	767	300ER Series	21	16	403	436	20	15	387	418	1	18	17			
Boeing	777	200 Series	3	13	113	111	3	13	113	111	0		0			
Boeing	777	200ER Series	39	10	2,550	2,989	36	9	2,370	2,776	3	10	180	2		
Boeing	777	300ER Series	0	0	0	0										
Boeing	787	8	0	0	0	0										
<b>Totals:</b>			<b>239</b>	<b>11</b>	<b>7,793</b>	<b>8,375</b>	<b>186</b>	<b>11</b>	<b>6,708</b>	<b>7,235</b>	<b>53</b>	<b>13</b>	<b>1,085</b>	<b>1,140</b>		

Total Records: 16

## SPECIFIC VALUES

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Fleet

Context

Individual Aircraft

New Query | Home

Values Chart Technical Event History Utilisation

Export XL | PDF

Aircraft Values

- Specific Values
- Generic Values
- Portfolios
- Data Matrices
- Fleet Values

Engine Values

- Generic Values
- Portfolios

Analysis

- Market Comparison
- Biz Jet Comparison
- Liquidity Overview
- Aviation Programs

Individual Aircraft

New Query

Values Chart Technical Event History Utilisation Export XL

Date	Event	Reg	Operator	Manager	Owner
11/15/2008	Scheduled to be per...	N17326	Continental Airlines	Continental Airlines	Undisclosed Bank / Broker / Lessor
10/2/2008	Ferry flight/moved to ...	N17326	Continental Airlines	Continental Airlines	Undisclosed Bank / Broker / Lessor
9/3/2008	Parked	N17326	Continental Airlines	Continental Airlines	Undisclosed Bank / Broker / Lessor
6/11/2008	Purchased - sale & l...	N17326	Continental Airlines	Continental Airlines	Undisclosed Bank / Broker / Lessor
5/29/2008	Purchased off lease ...	N17326	Continental Airlines	Continental Airlines	Continental Airlines
6/30/2006	Leased in	N17326	Continental Airlines	CIT Aerospace	The CIT Group / Capital Transportation Inc
3/17/2004	Title transferred to Tr...	N17326	Continental Airlines	CIT Aerospace	The CIT Group / Capital Transportati...
4/9/1999	Purchased - subject ...	N17326	Continental Airlines	CIT Aerospace	The CIT Group / Capital Transportation Inc
12/15/1998	Merger of Owner	N17326	Continental Airlines	UniCapital Air Group	UniCapital Air Group
6/26/1998	Purchased - subject ...	N17326	Continental Airlines	Cauff Lippman & Crane A...	Cauff Lippman & Crane Aviation
10/15/1993	Transferred to new ...	N17326	Continental Airlines	GECAS	General Electric Capital Corp
12/28/1992	Purchased - subject ...	N17326	Continental Airlines	General Electric Capital C...	General Electric Capital Corp
2/1/1987	Merger of Operator	N17326	Continental Airlines	Continental Airlines	Security Pacific Corp
8/14/1986	Purchased - sale & l...	N17326	New York Air	Continental Airlines	Security Pacific Corp

Monthly Base Lease Rate      Nominal      0.092      0.089      0.086      0.083      0.080      0.077      0.075      0.072      0.069      0.066

## PORTFOLIOS

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Demonstration Portfolio - ACL

Context

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Aircraft Values

- Specific Valuation
- Generic Valuation
- Portfolios
- Data Matrices
- Fleet Values

Engine Values

- Generic Valuation
- Portfolios

Analysis

- Market Commentaries
- Biz Jet Commentaries
- Liquidity Overviews
- Aviation Programmes

Current Values (US\$m)

PDF

Manufacturer	Type	MinVar	Serial Number	Registration	Market Half Life	Base Half Life	Market Full Life	Base Full Life	Market Lease/mth	Base Lease/mth	Deal No.
Airbus	A340	312	007	EC-KHU	40.26	41.41	51.91	53.06	0.50	0.50	
Boeing	767	3S1ER	25221	5R-MFF	24.69↓	22.64	33.01↓	30.96	0.39↓	0.30	
Boeing	747	436	23909	G-BNLB	33.03↓	32.98			0.48	0.49	
Boeing	737 (C...	3T0	23456	N17326	4.54↓	5.29	8.46↓	9.21	0.11↓	0.10	
ATR	ATR 72	202	272	SP-LFC	6.25	4.60	7.29	5.64	0.08	0.07	
Boeing	757	2Q8	28170	OH-LBT	19.88↓	19.51	27.57↓	27.20	0.22↓	0.22	
Saab	340	B	378	JA8900	2.05	1.85			0.03	0.03	
Airbus	A320	232	0530	EP-MHK	18.95↓	17.70	23.96↓	22.71	0.19↓	0.21	
Boeing (McDon...	MD-80	82	48070	N808ME	2.00↓	1.75	4.96↓	4.71	0.04	0.04	

					151.65	147.73	n/a	n/a			
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Don't just take our word for it.....

The results have been **outstanding**.... using one resource has really improved the **speed and efficiency** of our decision-making. It's very **intuitive and reliable**

Chris Partridge, Director of Asset Finance &  
Leasing Deutsche Bank

# MARKET OUTLOOK

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## WHICH WAY FROM HERE?

Eddy Pieniazek, Director and Head of Consultancy

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## AGENDA

- The market outlook
- Questions for the audience
- Capacity cuts: implications for your portfolio
- Shamin: confidence in numbers
- Asset value movements and trends
- Questions / discussion

## First – some radical assumptions for 2009...

- Air travel/traffic in 2009 will be at a level not materially different from that in 2008 (i.e. telekinetic transportation is still for the future)
- Jet airliners will continue to be delivered in 2009, including approx. 1,000 Airbus and Boeing (i.e. earthquakes or plagues will not destroy Seattle, Toulouse or Hamburg)
- Not all airlines will fail/cease operations (there will still be an airline industry, even though some of the paint schemes will change)
- There will be a need for aviation finance (aircraft will not be produced 'free of charge')
- Lending will resume (the 'recovery' requires this, but that doesn't mean it will happen soon...)

# 1. THE MARKET CYCLE

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A big picture view and why it impacts on asset values

## A Grim Business Environment...

*“We are about to enter phase two of the crisis when demand will start to collapse”* Tony Tyler, Cathay Pacific CEO

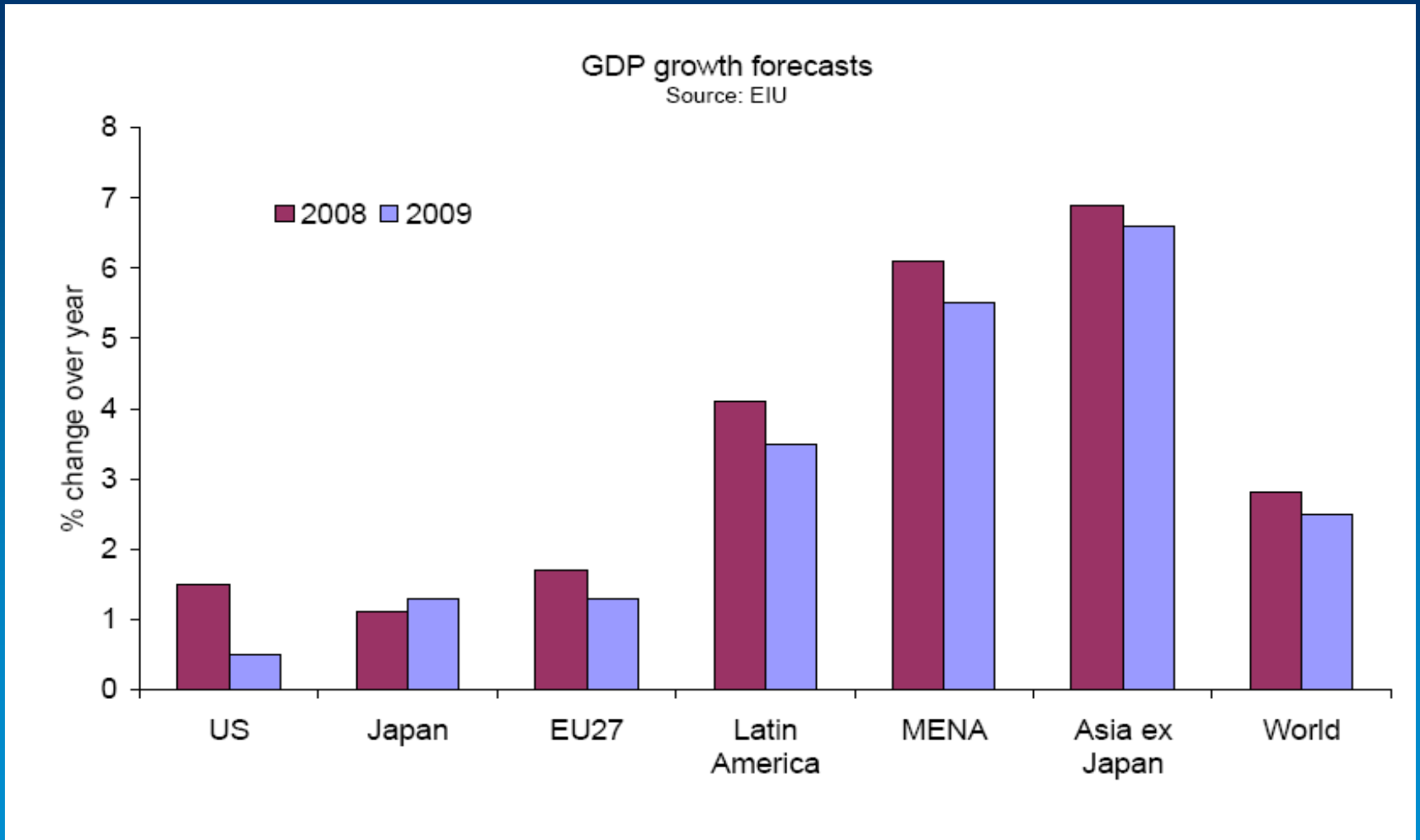
*“It will get worse, before it gets bad...”* Jose Abramovici, Calyon

*“A recession gets rid of crappy, loss-making airlines and it means we can buy aircraft more cheaply.”* Michael O'Leary, Ryanair

## ...Gets Better?

*“2009 will bring a dose of optimism to major U.S. airline carriers due to the effects of lower oil prices, falling domestic capacity and revenue-per-available-seat-mile growth”*  
Senior analyst Michael Derchin FTN Midwest Securities

# GDP growth forecast to be weaker in 2009



## Oil prices lower, but still painfully high

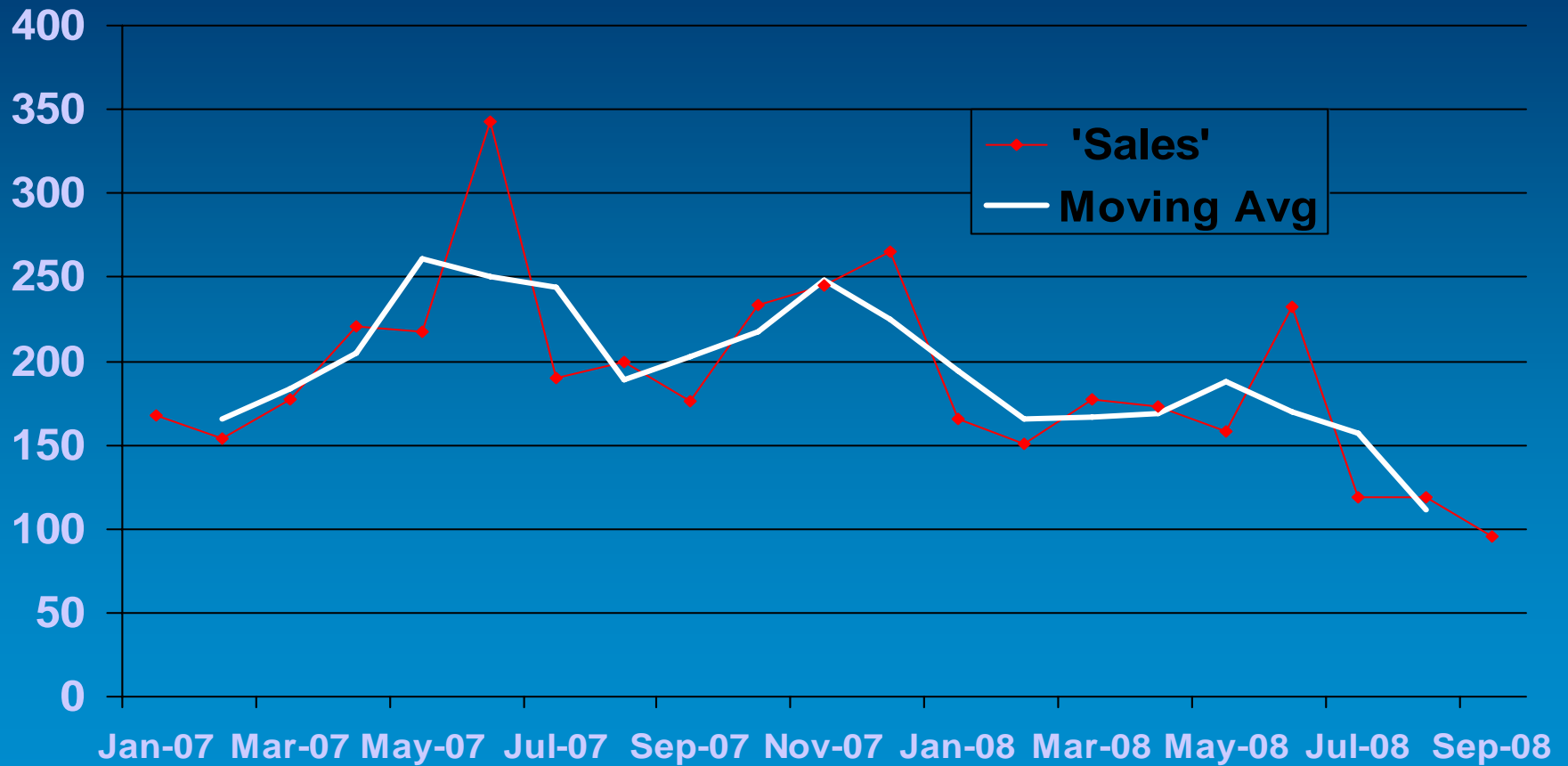


Source: Energy Information Administration

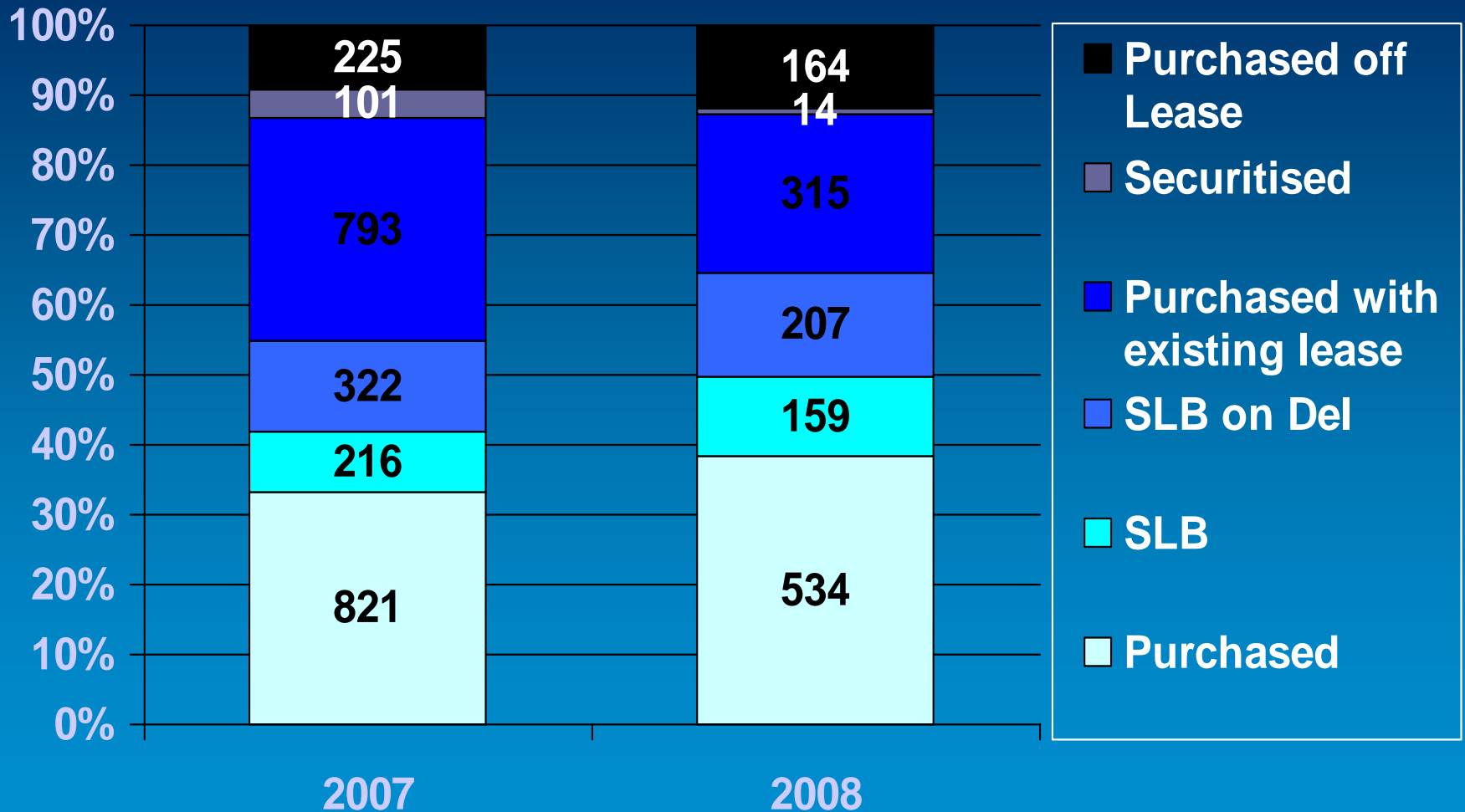
# Commercial aircraft transactions: Jan-Sept



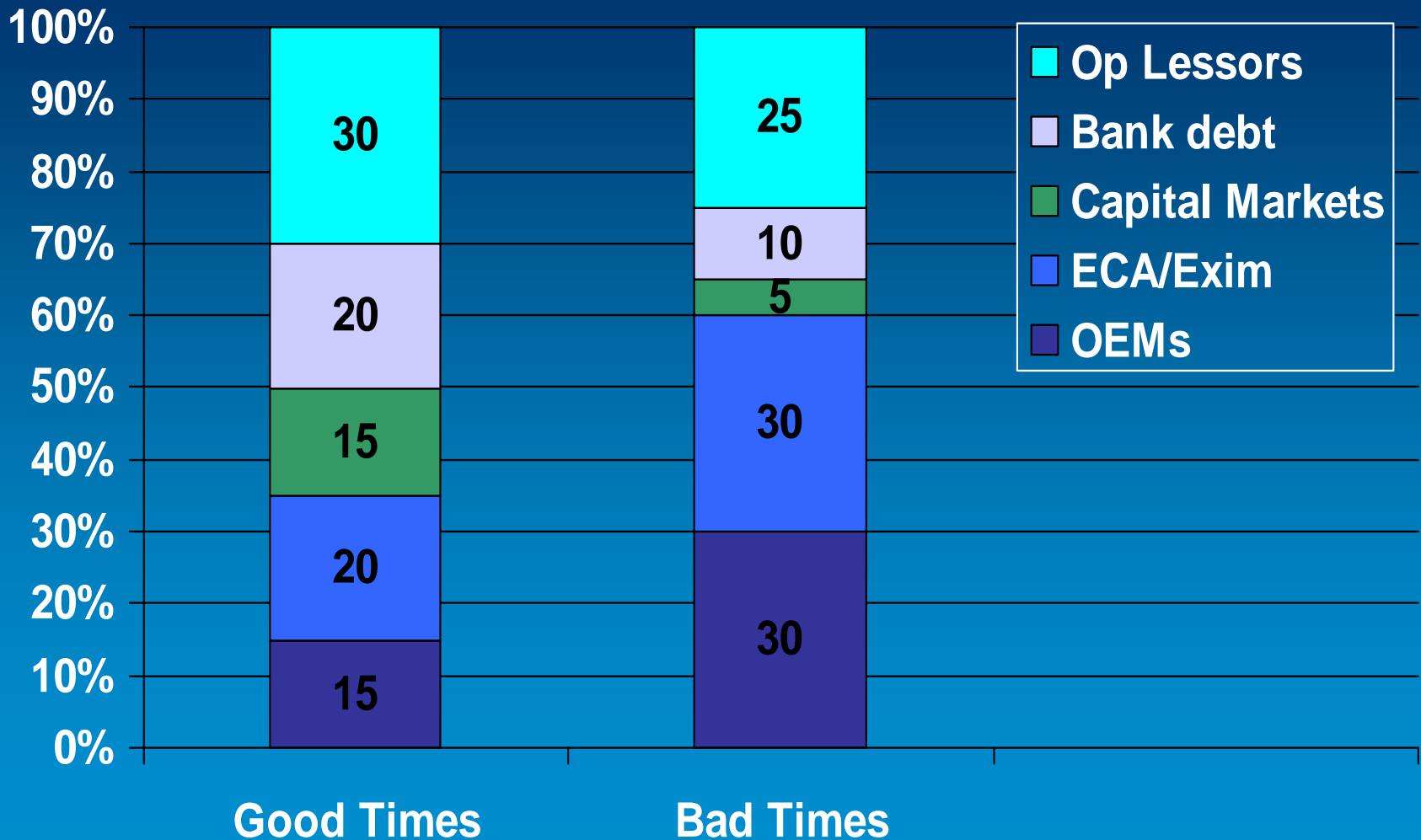
# Deals declining since mid 2007



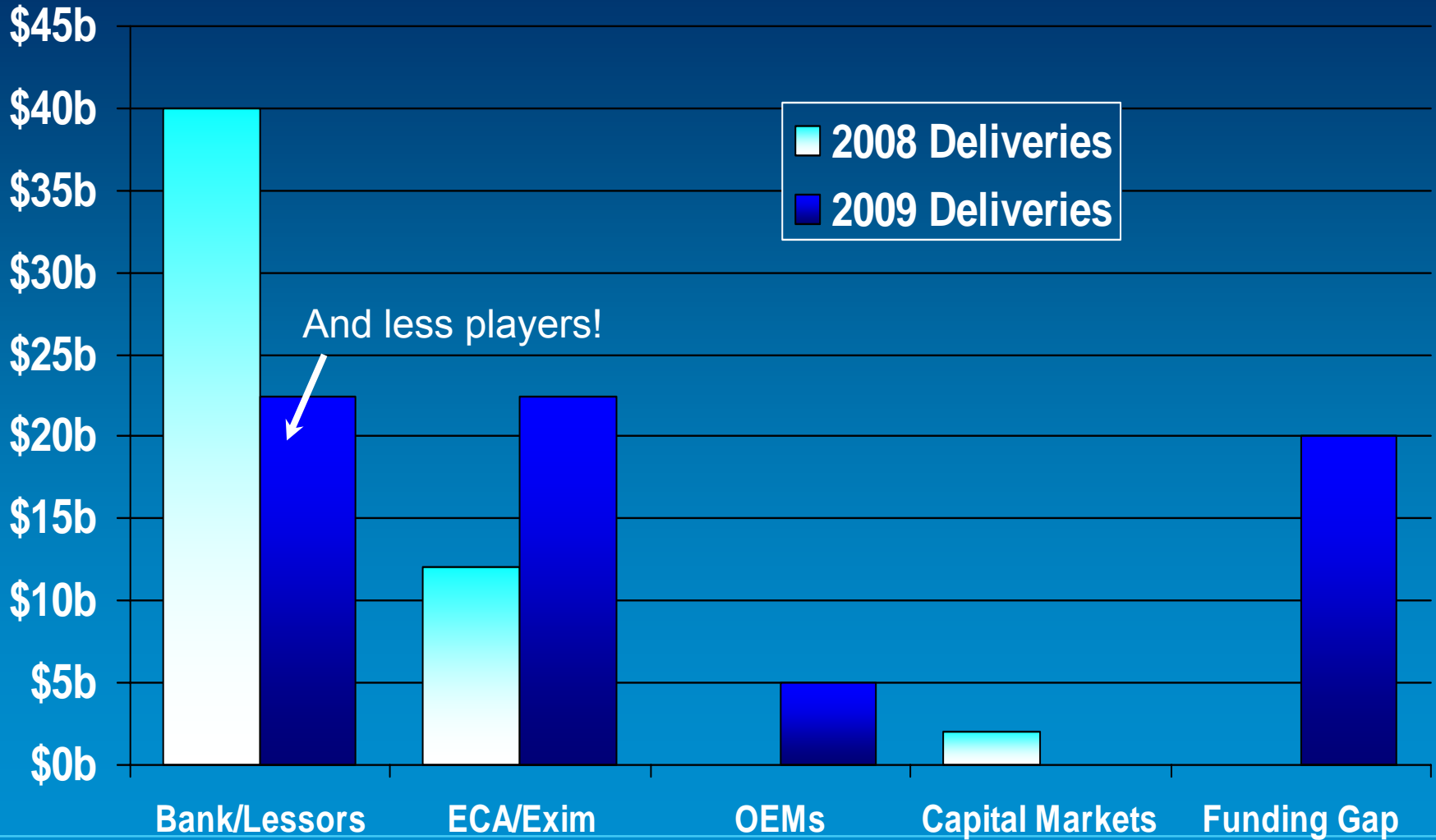
## Breakdown of commercial aircraft sales



## Sources of finance



# The missing billions - who will provide them?



## 2. QUESTIONS FOR THE AUDIENCE

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A chance to air your views

- **What do you expect will happen to the major Asian airlines in 2009?**
  - a) All will survive with profits in tow
  - b) All will survive but in a sea of red ink
  - c) 1- 5 top carriers will consolidate
  - d) 1- 5 top carriers will fail (feel free to name them)
  - e) Its worse than that...
  
- **What will happen to the orderbooks for the major manufacturers?**

Order cancellations and deferrals by the hundreds  
No voluntary cancellations, but continued deferrals  
A chance to pick up near term delivery slots by the brave and the funded,  
or will the slots fall away
  
- **Lessors**

Will we say goodbye to some well known names?
  
- **Financiers**

What are the ingredients for survival in 2009? Who will be writing aviation business? Will deals be qualified any differently?

### 3. CAPACITY CUTS

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Whilst the airlines 'right-size', what does this mean for your portfolio?

## Airlines fight back – cutting capacity

Announced fleet cuts to end 2009 incl. airline failures to date

	<b>WB</b>	<b>NB</b>	<b>RJ</b>	<b>TP</b>	<b>TBD</b>	<b>Total</b>
<b>Fleet Cut</b>	<b>111</b>	<b>543</b>	<b>233</b>	<b>86</b>	<b>56</b>	<b>1,029</b>
<b>% of Global</b>	<b>0.5%</b>	<b>2.4%</b>	<b>1.0%</b>	<b>0.4%</b>	<b>0.3%</b>	<b>&lt;5%</b>
<b>% of Category</b>	<b>3%</b>	<b>5%</b>	<b>7%</b>	<b>2%</b>		
<b>Seats Cut</b>	<b>24,131</b>	<b>68,062</b>	<b>11,030</b>	<b>3,560</b>	<b>7,460</b>	<b>114,243 (4.1%)</b>

<b>Regional</b>	<b>N.Am</b>	<b>Europe</b>	<b>Asia/P</b>	<b>Lat.Am</b>	<b>Afr/ME</b>	<b>Total</b>
<b>Fleet Cut</b>	<b>776</b>	<b>155</b>	<b>89</b>	<b>9</b>	<b>0</b>	<b>1,029</b>
<b>% of Region</b>	<b>9.3%</b>	<b>2.6%</b>	<b>1.9%</b>	<b>0.6%</b>	<b>0</b>	<b>&lt;5%</b>
<b>Seats Cut</b>	<b>9.7%</b>	<b>2.5%</b>	<b>2.1%</b>	<b>1.4%</b>	<b>0</b>	<b>4.1%</b>

US/EU/Asia have issues....but the Middle East is following another path

Can also cut capacity another way – reduce utilisation

World's airlines will offer 59.7 million fewer seats in the 4th Qtr 2008 than they did a year ago. 275 airports worldwide to lose air service altogether

## Airlines in difficulty are taking desperate measures...

Survivors will include airlines with solid finances and low debt

Back to the lessors – cap in hand

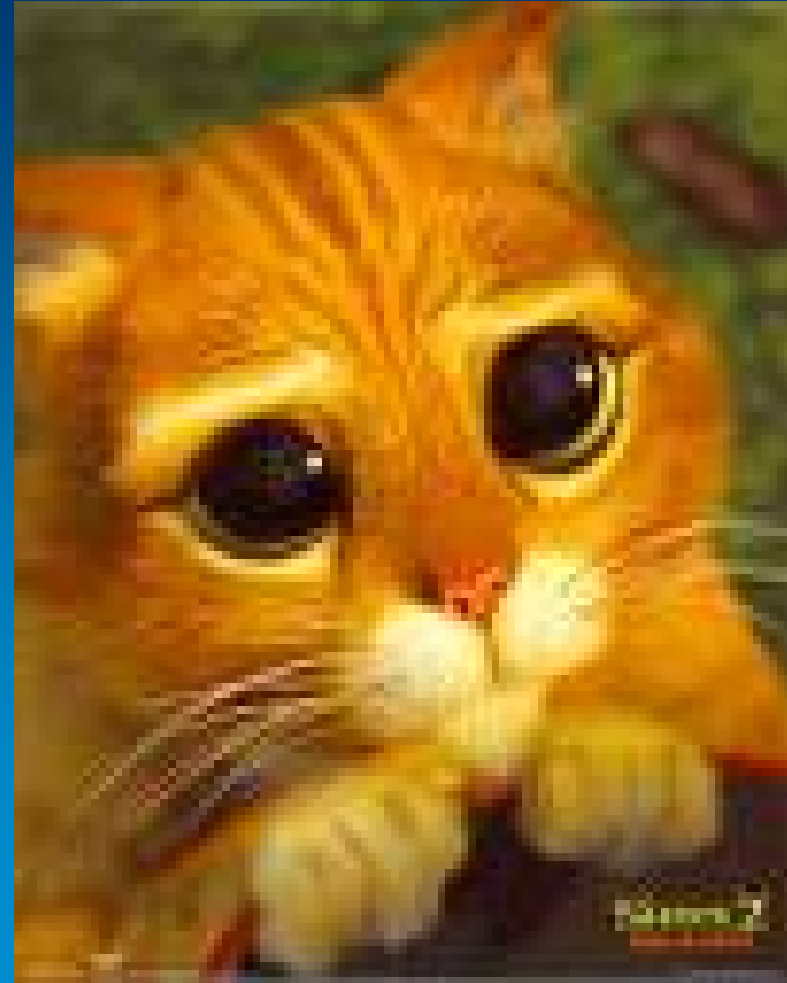
Asking for rental reductions

Asking for rental holidays

Announcing early returns

Supply to exceed demand?

The Lessors Predicament



## 4. CONFIDENCE IN NUMBERS – Shamin Mughal

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Tools help you breath more easily



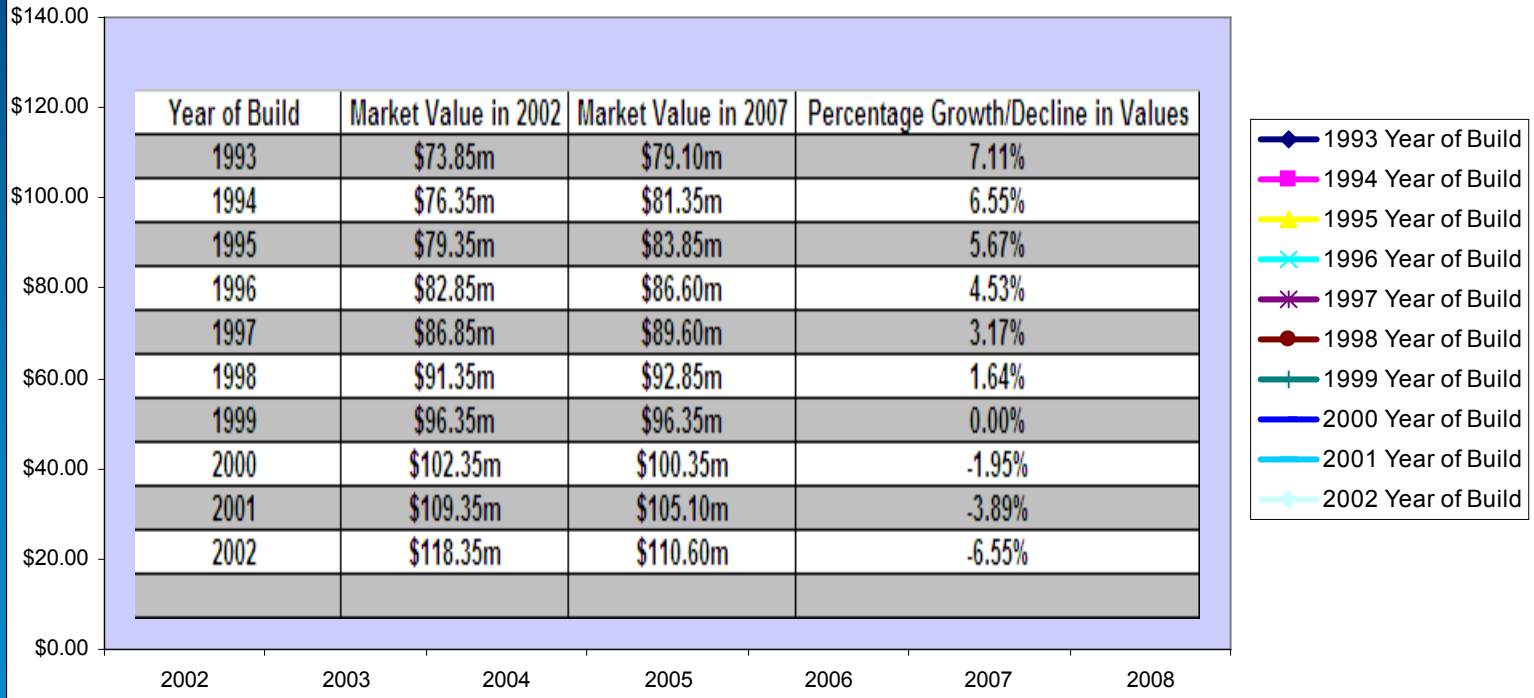
## Outline

A case study of three aircraft using the AARQ (Ascend Asset Risk Quantifier)

- Purpose of Exercise
- **Case Study 1:** Wide Body Freighter – B747-400F
- **Case Study 2:** Narrow Body – B737-800
- **Case Study 3:** How much Exposure is too much
- **Case Study 4:** Comparing Risk Profiles of 3 narrow bodies using co-efficient of variation
- Conclusion

# Value trends for the B747-400F

Graph Showing B747-400F Market Value Trends 2002-Present



# Probability of achieving values

## Case Study 1

What returns could be expected between 2008 and 2013, and what is the probability associated with those returns?

What does the model forecast as a FV in 2013?

What does Ascend forecast as a FV in 2013?

What is the 5% VaR figure in 2013?

VaR = **Value at Risk** calculates the maximum loss expected (or worst case scenario) on an investment, over a given time period and given a specified degree of confidence.

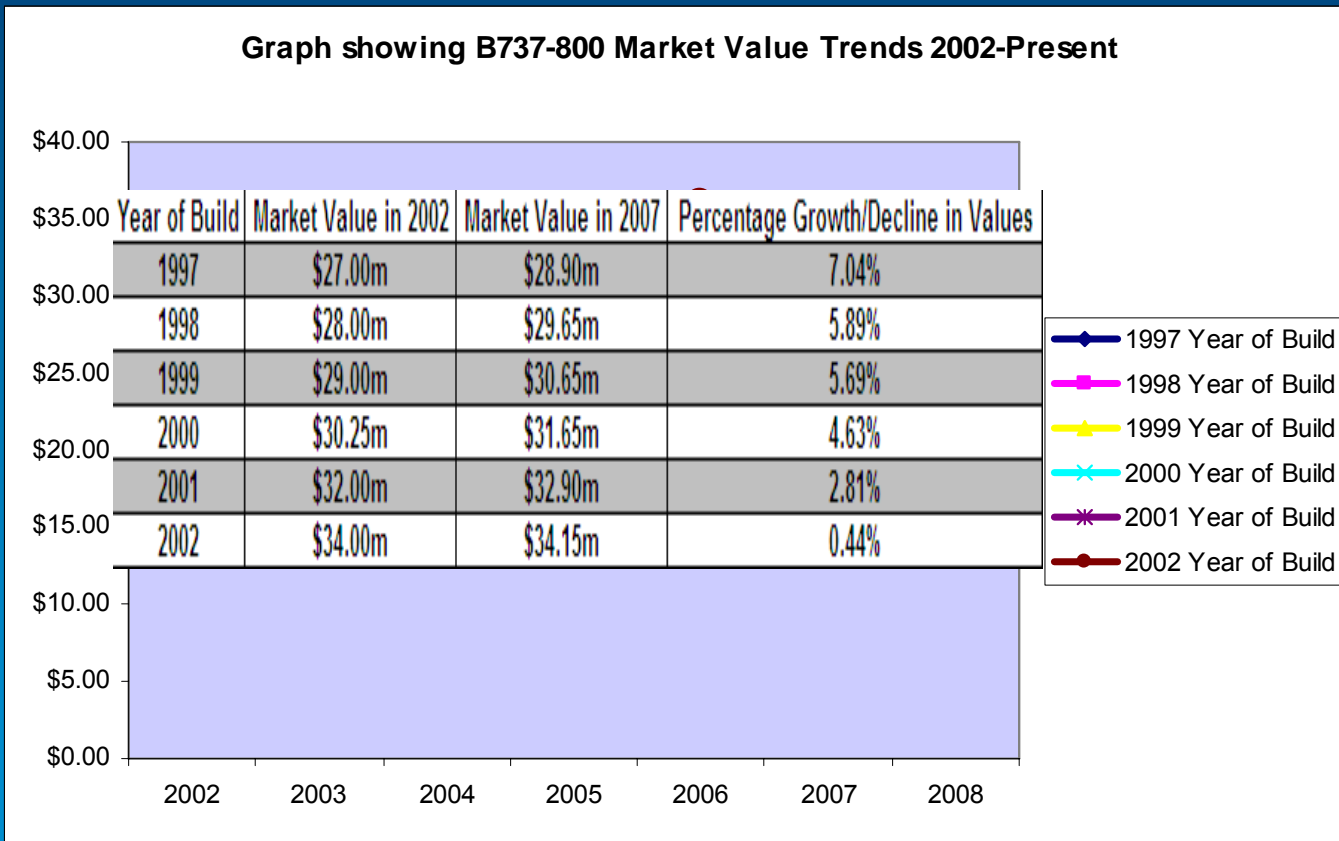
# Probabilities - Continued

Answer:

Parameters	Aircraft Details	Forecast Values	Risk Quantification	Values Distribution	<b>Exposure Level</b>	Value Quantification	Warehouse of Simulations
Parameters	Aircraft Details	Forecast Values	Risk Quantification	Values Distribution	<b>Exposure Level</b>	Value Quantification	Warehouse of Simulations
Parameters	Aircraft Details	Forecast Values	<b>Risk Quantification</b>	Values Distribution	Exposure Level	Value Quantification	Warehouse of Simulations
<b>Risk Quantification Data</b>				Risk Quantification Graph			
All Values in US Million Dollars							
	<b>Year</b>	<b>Base Values</b>	<b>5%VaR</b>	<b>95%VaR</b>			
<b>1</b>	2009	61.39	35.97	67.09			
<b>2</b>	2010	58.08	29.24	62.31			
<b>3</b>	2011	54.94	25.02	58.11			
<b>4</b>	2012	51.97	20.04	54.77			
<b>5</b>	2013	49.17	18.76	51.95			
<b>6</b>	2014	46.51	18.23	48.95			

# Value Trend For the B737-800

Graph showing B737-800 Market Value Trends 2002-Present



# Probability of values occurring

## Case Study 2:

What returns could be expected between 2008 and 2013, and what is the probability associated with those returns?

What does the model forecast as a FV in 2013?

What does Ascend forecast as a FV in 2013?

What is the 5% VaR figure in 2013?

# Probabilities (cont.)

▸ Parameters
▸ Aircraft Details
▸ Forecast Values
▸ Risk Quantification
▸ Values Distribution
▸ **Exposure Level**
▸ Value Quantification
▸ Warehouse of Simulations

**Exposure Level Parameters**
Exposure/Risk Quantification Graph

▸ Parameters
▸ Aircraft Details
▸ Forecast Values
▸ Risk Quantification
▸ Values Distribution
▸ **Exposure Level**
▸ Value Quantification
▸ Warehouse of Simulations

**Exposure Level Parameters**
Exposure/Risk Quantification Graph

▸ Parameters
▸ Aircraft Details
▸ Forecast Values
▸ **Risk Quantification**
▸ Values Distribution
▸ Exposure Level
▸ Value Quantification
▸ Warehouse of Simulations

**Risk Quantification Data**
Risk Quantification Graph

All Values in US Million Dollars

	Year	Base Values	5%VaR	95%VaR
1	2009	22.57	13.45	25.39
2	2010	21.47	11.70	24.35
3	2011	20.41	9.94	23.22
4	2012	19.37	8.32	21.60
5	2013	18.38	7.76	20.73
6	2014	17.41	7.23	19.72

# How much asset risk should be taken?

## Case Study 3:

Consider an 2008 Built A320-200, How much Exposure is too Much Exposure?

Answer: Looking at Different Value at Risks

Parameters		Aircraft Details		Forecast Values		Risk Quantification		Values Distribution		Exposure Level		Value Quantification		Warehouse of Simulations	
Year	VAR Level	Exposure Amount	Explanation												
2013	1%	\$10.18m	The AARQ is 99% confident that the asset value will not be lower than \$10.18m in 2013												
2013	3%	\$12.40m	The AARQ is 97% confidence that the asset value will not be lower than \$12.40m in 2013												
2013	5%	\$13.71m	The AARQ is 95% confident that the asset value will not be lower than 13.71m in 2013												
2013	10%	\$15.81m	The AARQ is 90% confident that the asset value will not be lower than \$15.81m in 2013												

# Comparison of assets

## Case Study 4:

From a choice of three narrow body aircraft

1. A320-200 Vintage 2000
2. B737-800 Vintage 2000
3. A321-200 Vintage 2000

**How do these aircraft compare on the basis of risk reward in 2013?**

## Co-efficient of Variation

**Answer:** The coefficient of variation represents the ratio of the standard deviation to the mean. The coefficient of variation allows you to determine how much volatility (risk) you are assuming in comparison to the amount of return you can expect from your investment.

▶ Parameters	▶ Aircraft Details	▶ Forecast Values	▶ Risk Quantification	▶ Values Distribution	▶ Exposure Level	▶ Value Quantification	▶ Warehouse of Simulations
▶ Parameters	▶ Aircraft Details	▶ Forecast Values	▶ Risk Quantification	▶ Values Distribution	▶ Exposure Level	▶ Value Quantification	▶ Warehouse of Simulations
Forecast Values Data				Forecast Values Graph			
All Values in US Million Dollars							
	Year	Base Values	Mean	Median	Std Dev+	Std Dev-	Std Dev
1	2009	25.82	22.91	23.38	27.09	18.73	4.18
2	2010	24.5	21.05	21.54	25.57	16.53	4.52
3	2011	23.21	19.24	19.59	23.88	14.6	4.64
4	2012	21.97	17.91	18.46	22.67	13.15	4.76
5	2013	20.77	16.75	17.16	21.16	12.34	4.41
6	2014	19.62	16	16.3	20.38	11.62	4.38

## Co-efficient of Variation

The Co-efficient of Variation for:

B737-800 is 0.263

A320-200 is 0.281

A321-200 is 0.277

**The differential is minimal, however the least 'risky' asset based on past experience would be the B737-800**

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## Conclusion

AARQ delivers the ability to:

Assess historical volatility

Determine probability of future values being achieved

Determine a range of risk measures/parameters

These enhancements allow you to:

Quantify volatility in forecast values

Assess which transactions most closely match your strategy or appetite for risk

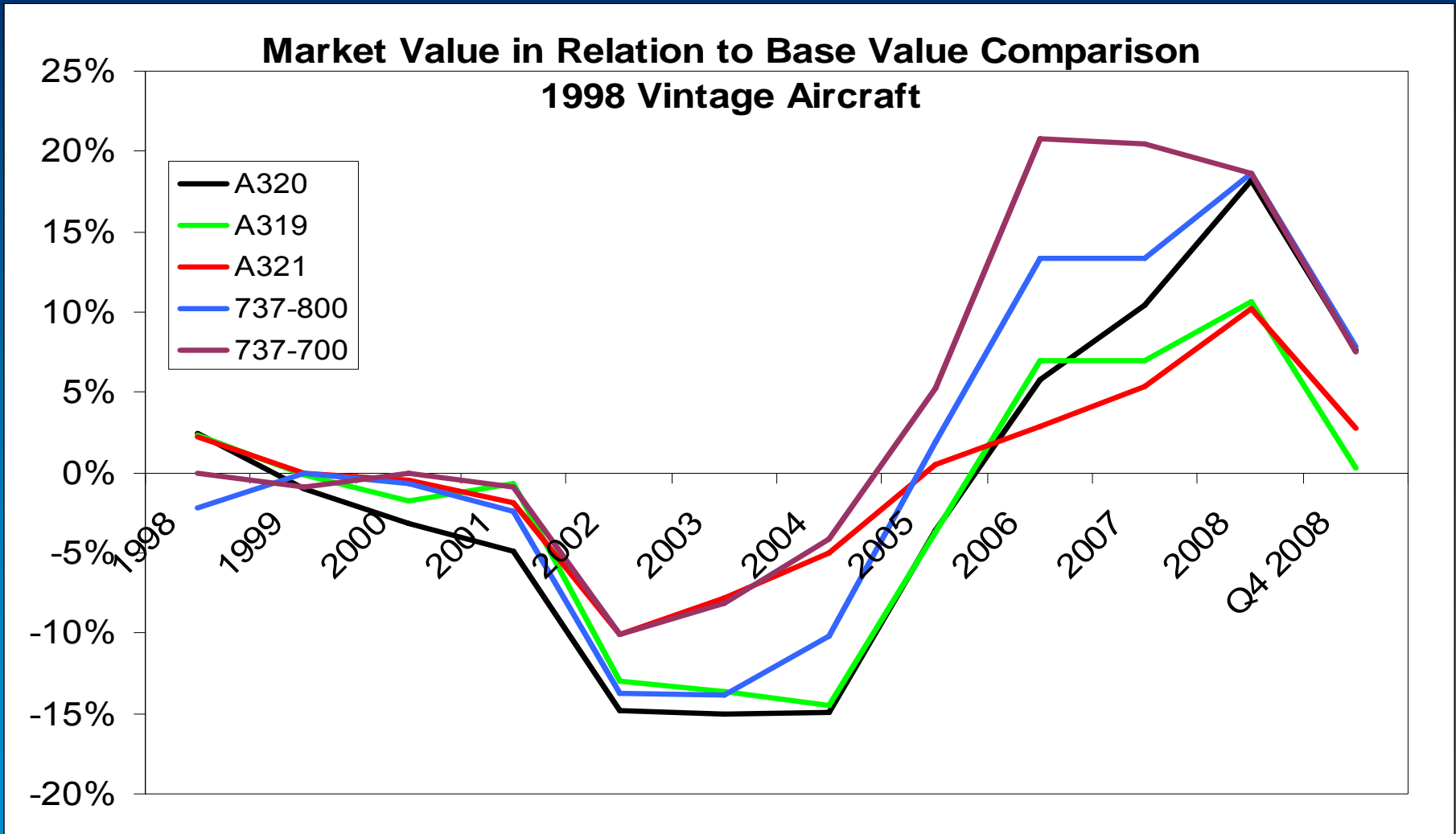
## 5. ASSET VALUES

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You know its changing...

A general overview of aircraft value trends

# The latest market cycle has run its course

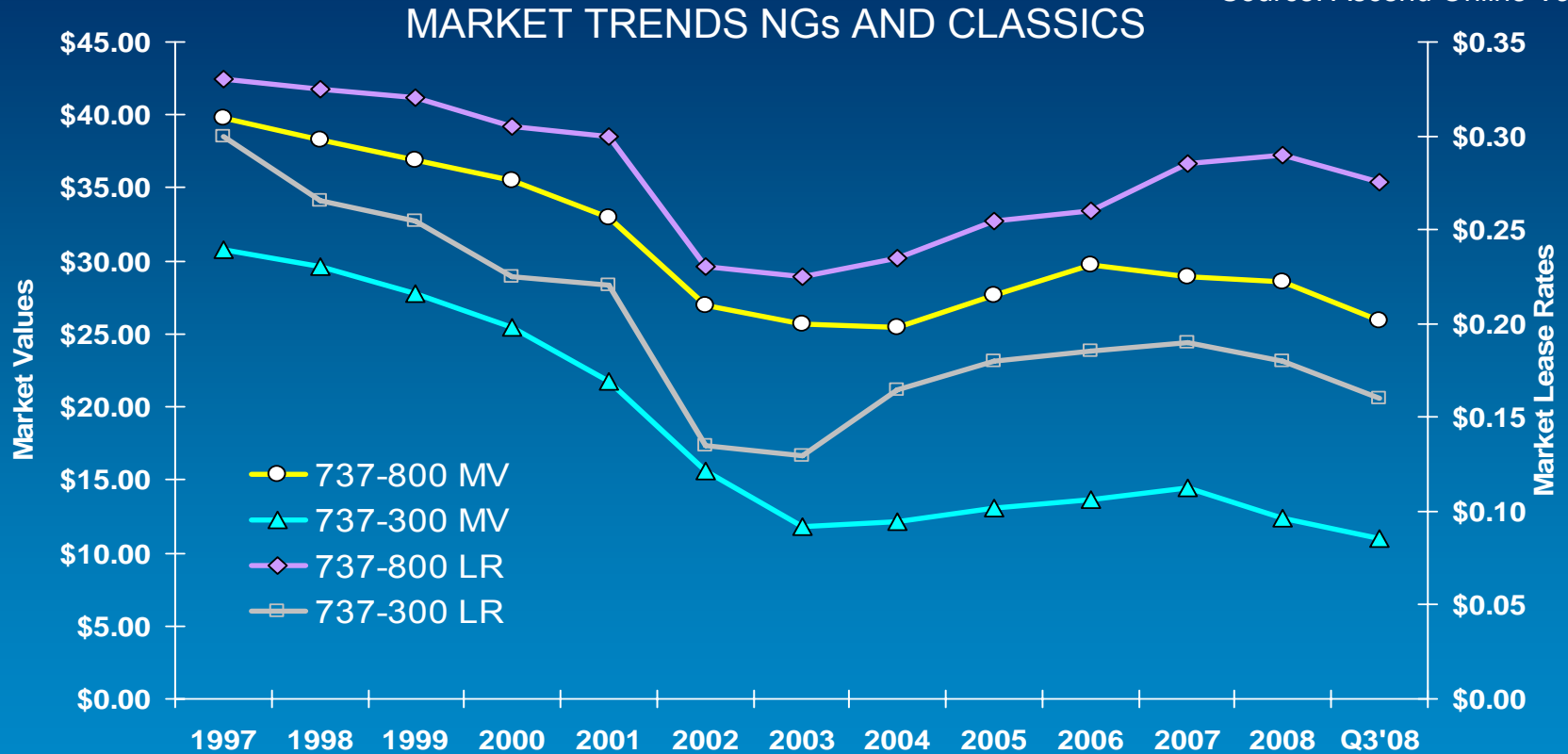


## A time of investment opportunities?

- Distressed sellers – some may have to sell to pay off debt
- Many airlines will want to boost liquidity
- Sale & leaseback opportunities for funded investors
- Good assets at knockdown prices?
- Willing Buyer Willing Seller – now add Willing Lender?

# Narrowbody market values feel the chill wind of change

Source: Ascend Online Values V1



## IN PRODUCTION NBs

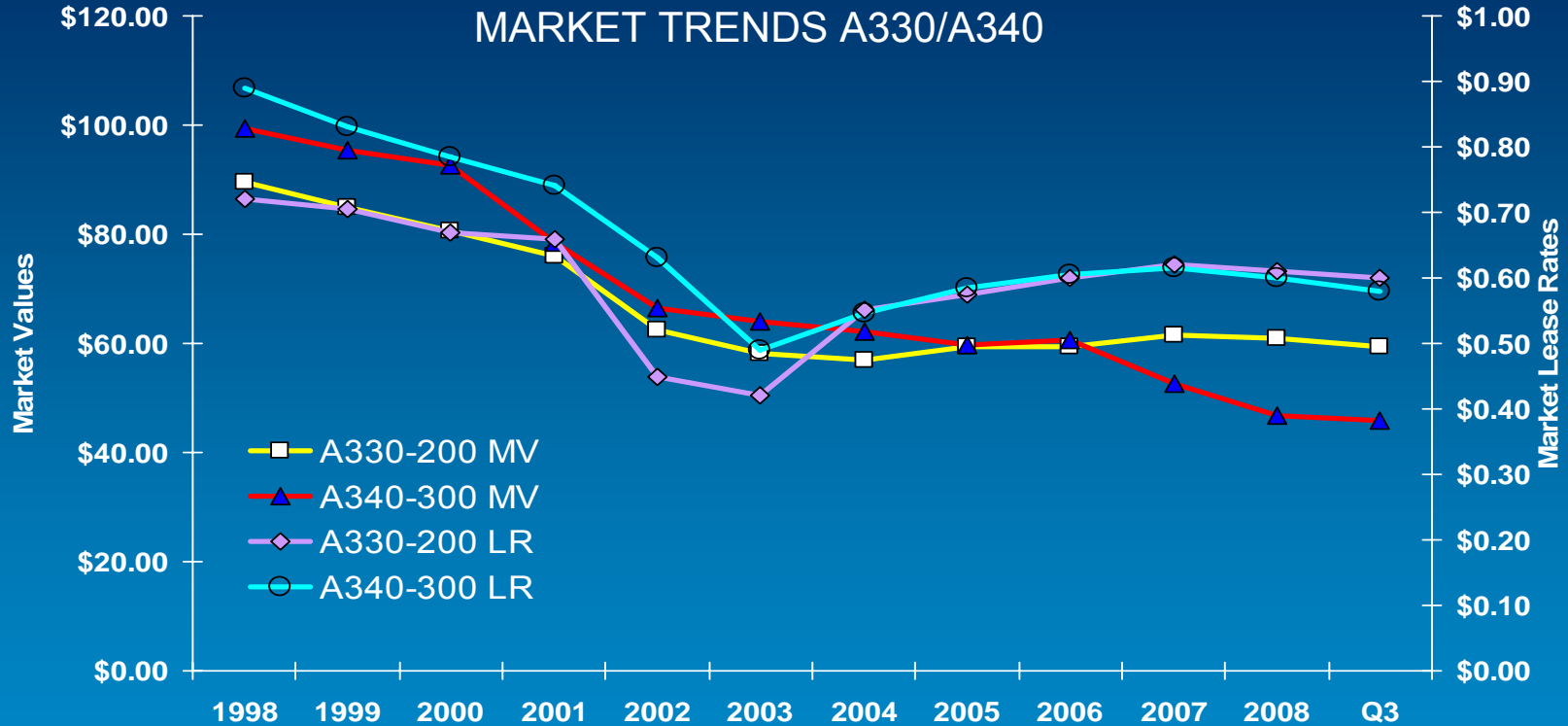
- Lease Rates down 10% since mid year
- Market Values declines 5% to 10%

## OUT PRODUCTION NBs

- Lease Rates down 20% since mid year
- Recent Market Values movement - impact most noted with younger vintages

## Newer widebodies insulated (for now...)

Source: Ascend Online Values V1



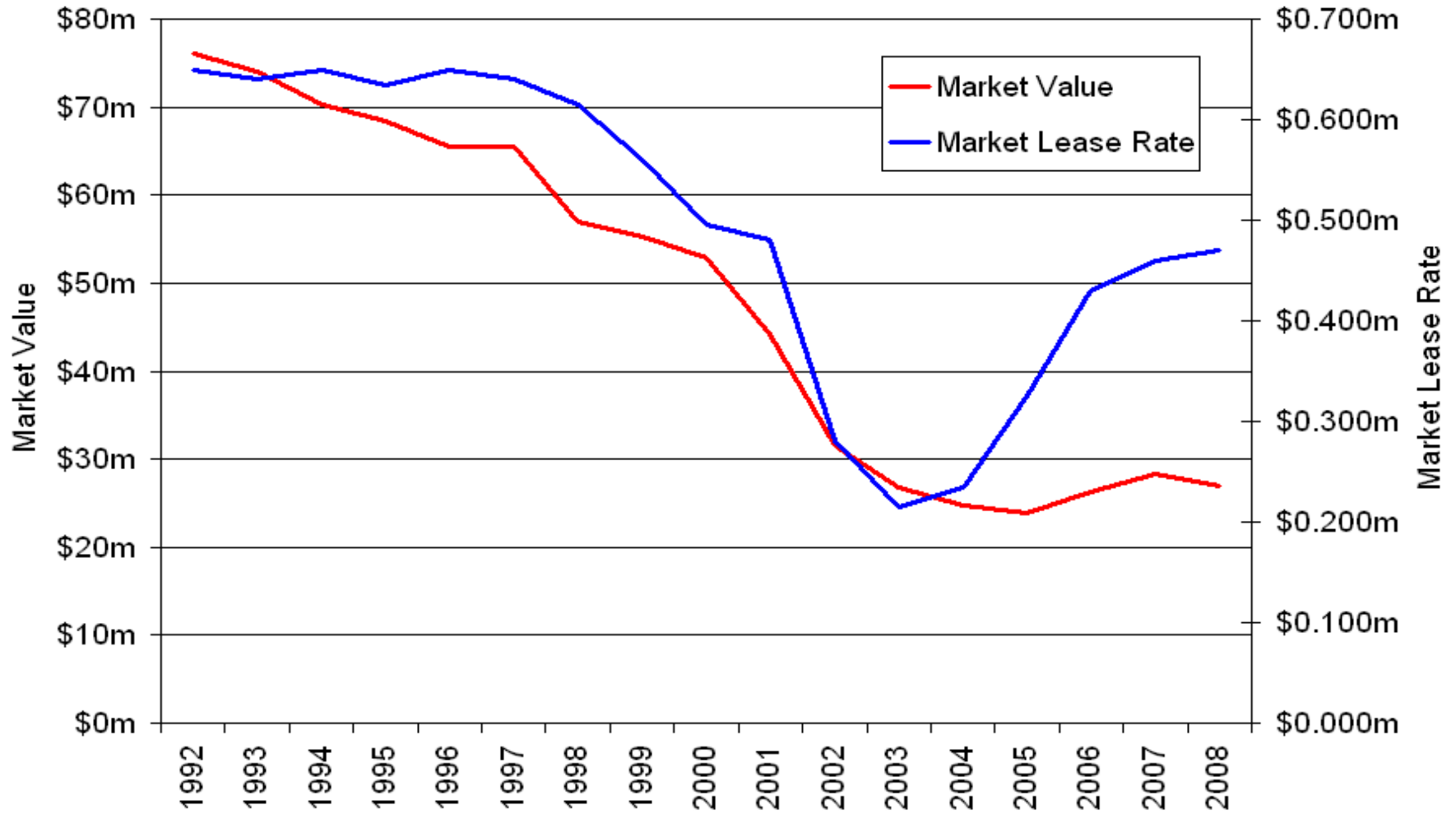
### IN PRODUCTION WBs

- Lease Rates and Market Values display marginal changes..... so far
- The 777-200/300ER and A330s are core types for the airlines.

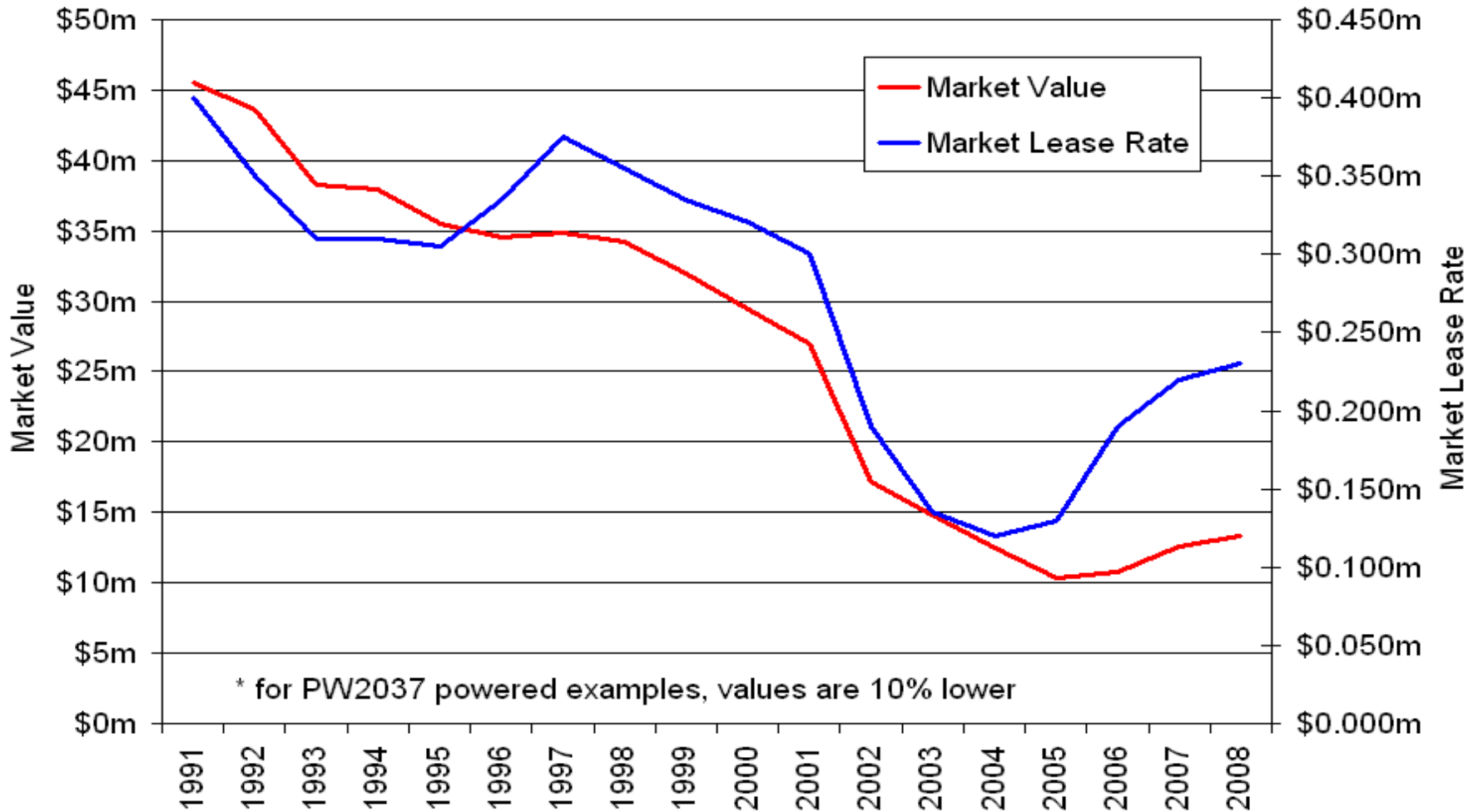
### OLDER TECHNOLOGY WBs

- eg B747-400, Vanilla 777s, A340-300
- Lease Rates holding?
  - Market Values down 5%, very vulnerable to the Slowdown.

### 1992 B767-300ER (CF6-80 / PW4000)



### 1991 B757-200 (RB211-535E4)



## What's happening to values right now?

Already affected: older, inefficient equipment

- 737 Classics (decay started before US cutbacks were announced)
- 747-200 Freighters – off the cliff!
- 50 seat regional jets
- 747-400 passenger version

Potential to see decline in near term

- 757s (especially later vintages)
- 767s and other “marginal lift”
- MD-11 Freighters
- Older A320s (1988-1994) CFM56-5A1 or V2500-A1 powered

# Better prospects for in-production aircraft?

## Narrowbodies

- A320 Family and 737NG - MV premium has evaporated, parity with BV
- Lease Rates have started to decline on A319, A320, 737-700
- 737-800 availability on the up - ATA, Futura, XL, Sterling etc.
- Delivery slots available as early as 2008-2009 due to deferrals and cancellations

## Widebodies

- 767-300ER 'propped up' by 787 delays – but for how long?
- A330s and 777-300ER expected to ride out the storm better
- But some A330 slots already available 2009
- 777-200ER still in demand but MV heading towards BV parity

# Boeing 787 - delays now 20-30 months

Its bad news for some...

- Airlines who need, and can afford new lift are having to cope without
- Delays are expensive
- The world remains a little less efficient

...but good news for others

A shot in the arm for B767-300ER  
/ A330 / B777, especially lease rates

Owners of same are getting  
extended useful economic lives



# Airbus A380 – it could have been different

## It's bad news for some...

Delivery rate adjusted down to 12 deliveries in 2008 not 13, 21 not 25 in 2009, and 30-40 not 45 in 2010.

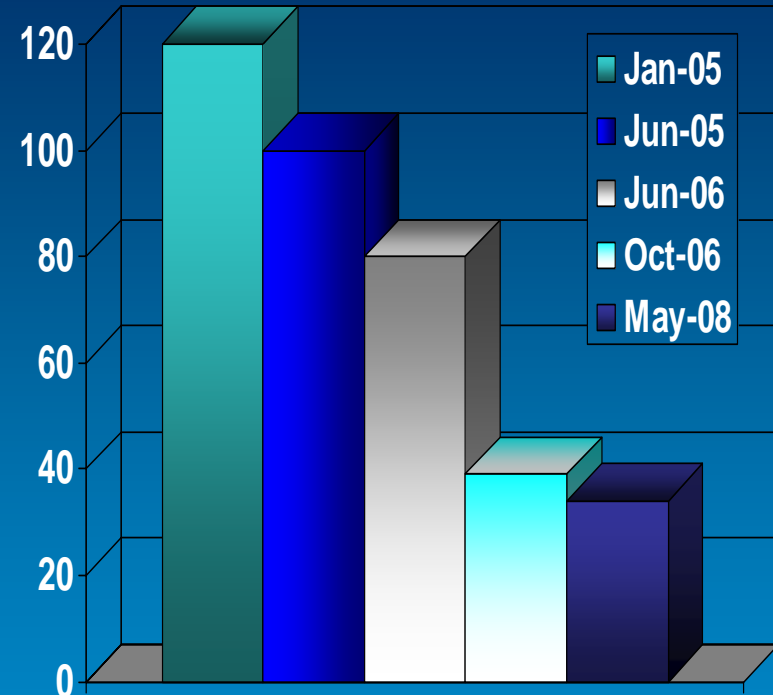
Early 2005 schedule was to have seen 120 deliveries by end of 2009...

The world fleet remains a little less efficient

## ...but good news for others

A shot in the arm for B747-400 / A330 / A340 / B777 values and lease rates etc.

Owners of same are getting extended useful economic lives



Deliveries by end 2009

**TOTAL DELIVERIES = 8**      **TOTAL ORDERS = 192**

Market Values and Lease Rates are in decline

Market Values have been above the long term Base

By the turn of the year we envisage Base Values will be a good proxy for Market Values for in-production types.

Nothing is immune, but some types will be more resilient

**OPPORTUNITY KNOCKS FOR THOSE WITH FUNDING**

# QUESTIONS AND ANSWERS TO THE ASCEND TEAM

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