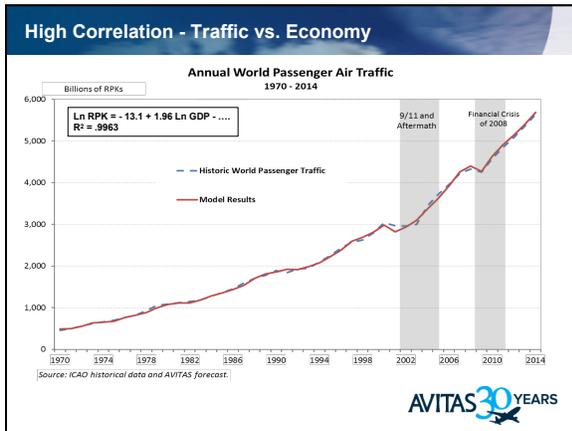
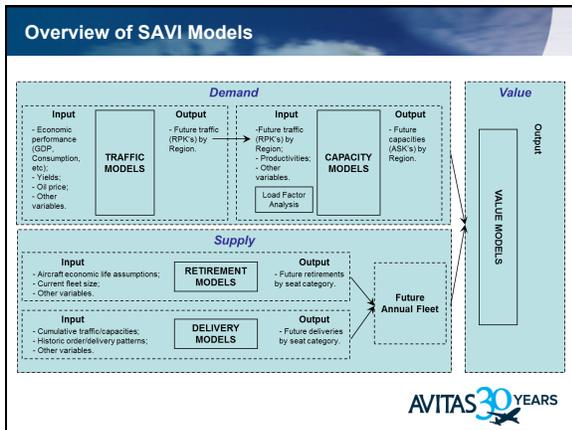




Industry Overview
 Presentation to ASA
 June 8th, 2015
 Phoenix, Arizona

Adam Pilarski
 Senior Vice President, AVITAS, Inc.





Can we predict anything in Aviation?

- Causalities quite stable, predictability still good
- Unpredictable events (by definition!) cannot be predicted
- Their consequences, though, can



Examples Of Predictable Change

- Rise of Chinese Aviation
- Rise of Asian Aviation
- Japan's Role In World Economy
- Terrorism
- Fuel Prices



Rise of Chinese Aviation

- In 1985 7m passengers in China, 51m Japan, 372m US
- Did forecast for 1985-2000
- Official government forecast called for 6.7%
- 1981-1984 growth of 18.3%
- Used standard Western econometric tools
- Results were 14.7% growth, actual 15.1%
- 2013 passengers, China 353m, Japan 106m, US 743m



Rise Of Asian Aviation

- **Predictions in 1980**
 - Reasons
 - GDP growth
 - Geography (Islands, etc.)
 - Size
 - Ethnic ties
 - Migration



Japan's Role In World Economy

From WWII to Invincible

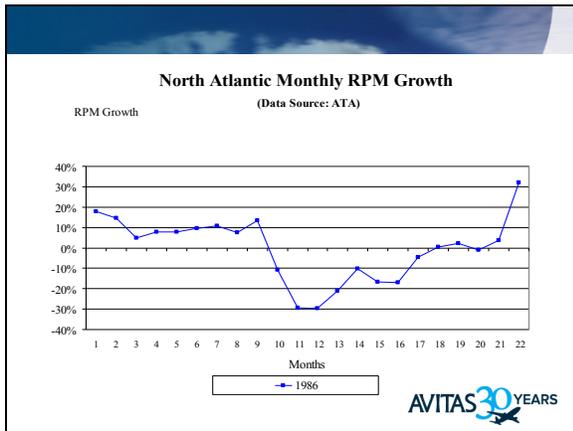
Back to the Future II, Rising Sun

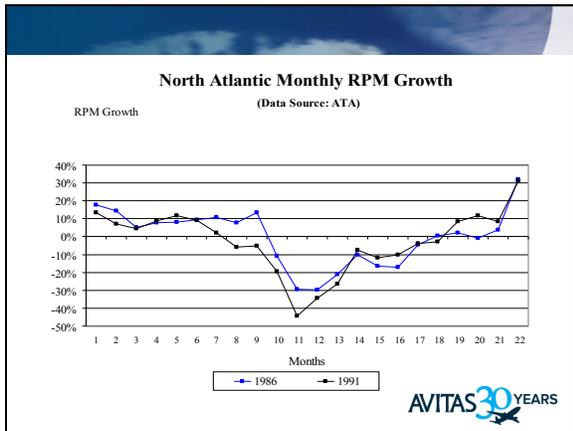
Importance of Demographics

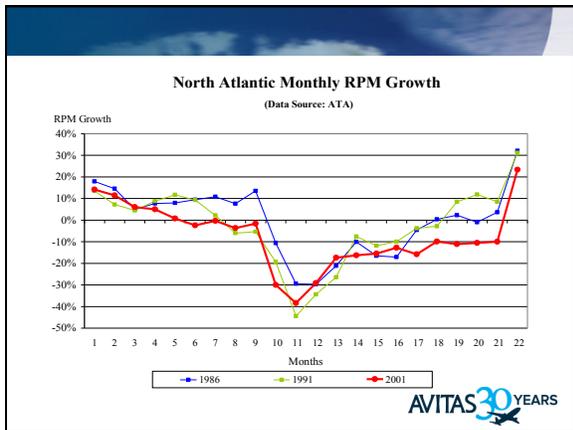


Terrorist Impact









Fuel Prices

- Forecast made in March 2011 calling for \$40/barrel by October 16, 2018
- Fuel prices critical in aviation: design, retirement, use, values



How to do analysis

- 3 basic principles
- Use common sense
 - Use basic economics
- and....





I think I thought myself to death



How to do analysis

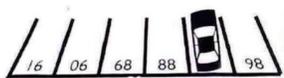
3 basic principles

- Use common sense
- Use basic economics
- Don't think yourself to death

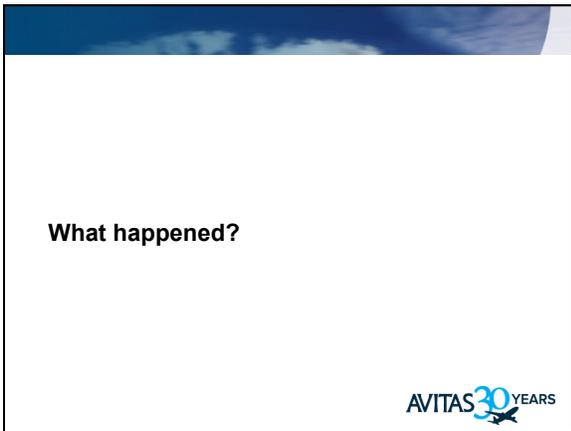


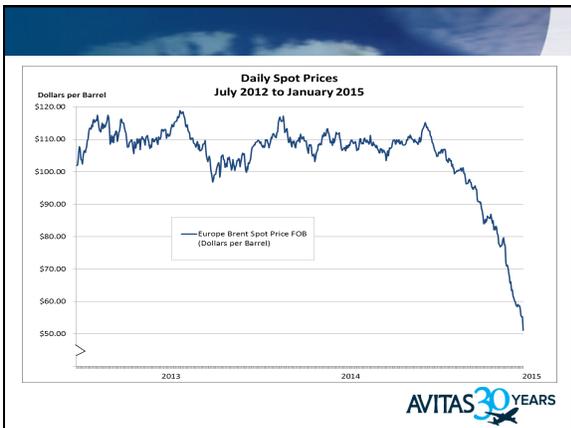
Example









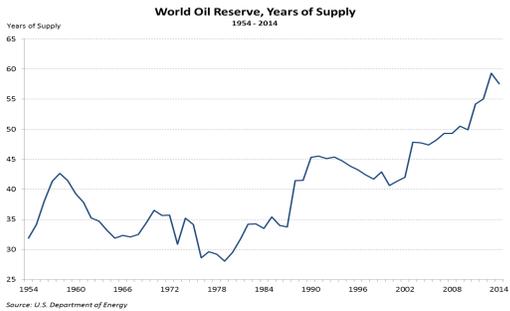


Could it have been predicted?



- Two basic facts of oil industry
 - Industry is not competitive
 - We are not running out of oil





Cartels

- **Inherently unstable**
 - Pretend monopoly with competing interests/How to determine share?
 - Price above equilibrium supported by quantity restrictions
 - Huge incentives to cheat
 - Inability to keep outsiders out



History

- **No stability**
- **Biggest producers tried to increase/keep share**
- **Lenin comment re WW I**



How come OPEC so successful?

- **Role of Saudi Arabia**
- **And UAE, Qatar and Kuwait**



Dilemma of OPEC

Keep prices high

+



-

Outsiders produce more oil
World uses less oil

-

Wean World off of oil / radical new solution



Dilemma of OPEC

Reduce Prices

-



+

Waste more
High cost producers out of the picture
Stop looking for alternatives

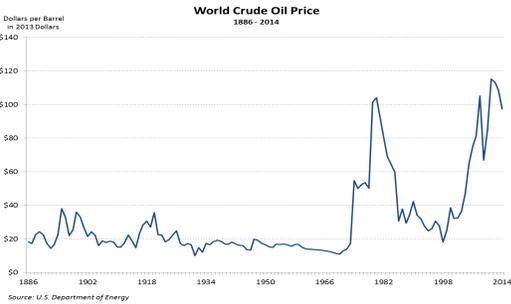


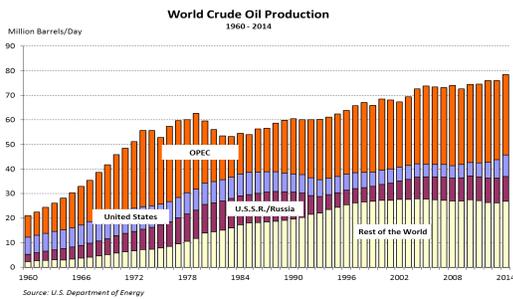
**My forecast assumed longer high prices,
more significant fall**



**Two unnatural prices increases
1979-1985 2007-2014 (notice blip in 2008)**

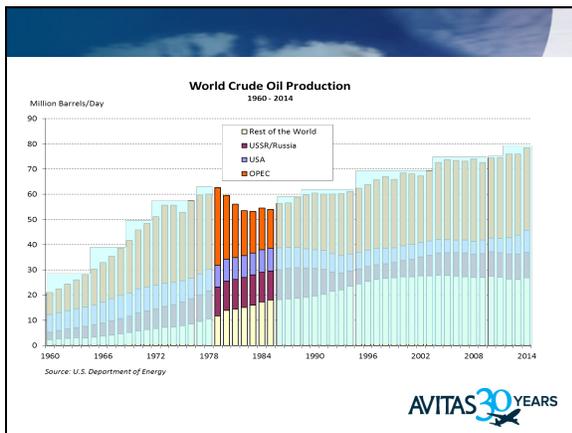






What happened during first unnatural price run-up 1979-1985





Change in Oil Production (1985 vs 1979)

World	-13.0%
OPEC	-47.1%
Non-OPEC	+15.4%
Saudi Arabia	-57.9%
Iran	-58.0%
Iraq	-59.2%



Conclusion:
**Traditional economic theory did
the spike in**



**The Second Price Run-up
2007-2014**



- **Political reasons**
 - Russia, Iran, Venezuela needed high oil prices
 - Saudi Arabia reluctantly tagged along



Change in Oil Production (2014 vs 2007)

World	8.9%
OPEC	6.2%
Non-OPEC	11%
US	73.6%



Forecast made in March 2011 that by October 16, 2018 oil prices will be \$40/barrel



- **Fracking**
 - Flexible, low cost
 - Ceiling price
- **Political Realities**
 - Syria and role of Russia
 - Iraq
 - ISIS
 - US/Iran relationship



"We'll never cut our output"

**Ali al-Maimi
Minister of Oil**

"\$100 a barrel oil 'never' again"

**Prince Alwaleed bin
Talal**

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Saudi Arabia Undisturbed by Falling Oil Prices

**Washington Post
2/9/2015**

"..drop in oil prices could be the jolt that Saudi officials need to focus on diversifying the economy"

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"..oil bust is helping Saudi Arabia achieve another long term goal: undermining global efforts to reduce dependence on fossil fuels. Lower oil prices already have spurred demand for gas guzzling SUVs.."

**Washington Post
1/27/2015**

AVITAS 30 YEARS

Conclusion:
**Saudi action to preserve future
high oil prices did the spike in**



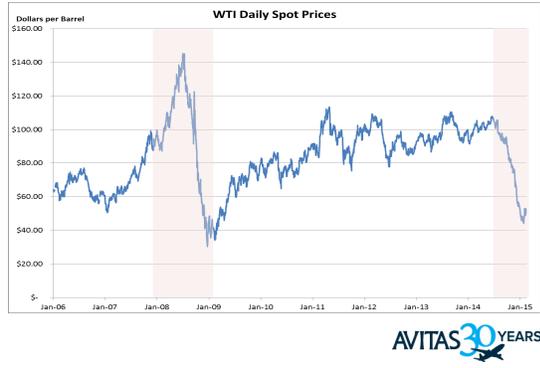
Future of Oil Prices

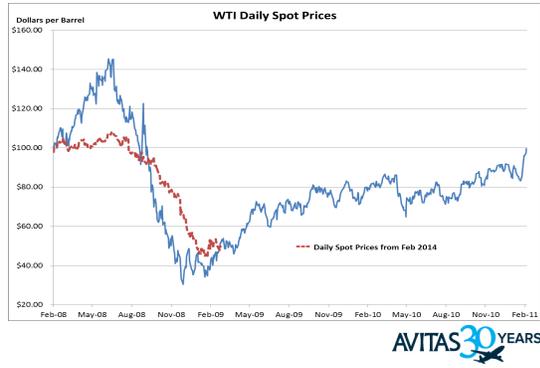


Is it a blip?

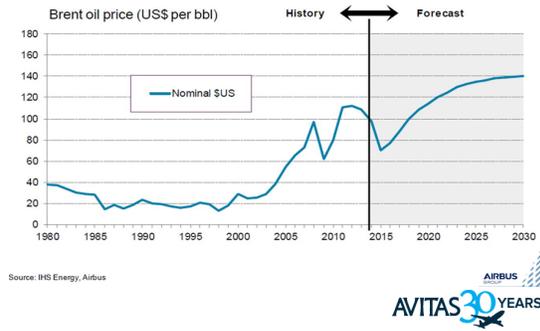


Is it a blip?





High oil prices here for the long-term



Costs of Extraction
but
NOT A COMPETITIVE MARKET



Which oil producers are breaking even?

▪ Iran	\$136
▪ Venezuela, Nigeria	\$120
▪ Russia	\$100
▪ Saudi	\$95
▪ Kuwait, Qatar, UAE	\$70



Reported extraction costs

▪ Saudi	\$5
▪ Fracking	\$70



"Now that prices have reached bottom...real possibility oil prices could explode higher to upwards of \$200"

Abdulla al-Badri
Secretary General of OPEC

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"The end of OPEC might be closer to reality now. Forget \$200, oil can sink to \$20 this year"

Edward Morse
Global Head of Commodities Research
Citigroup

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"You need to allow prices to go as low as possible to see those marginal producers move out of the market. Saudi Arabia can sustain these low oil prices for at least eight years"

Mohammad al-Sabban

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Who Benefits / Who Loses?

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January 5, 2015

Oil prices drop below \$50
At the same time
Dow Jones 331 ↓ points

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- **World Economy** (0.1-0.4 ↑ GDP for every \$10 oil price drop)
- **Beneficiaries**
 - China
 - India
 - Japan
 - Agriculture
 - Western consumers
- **Losers**
 - 40% drop in oil prices = \$1.5 Trillion drop for oil producers
- **Deflation, especially European problem**

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Impact on Aviation

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- **Will not discuss**
 - Retirements
 - Availability of financing
 - Values

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- **Traffic up**
 - World economy up
 - Airline ticket prices down

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- **Traditional thinking static**
 - Lower fuel costs equal higher profits
- **Reality**
 - Fares will drop
 - Other costs will go up

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"We can't count on \$80 crude oil prices going forward"

Gary Kelly
Chairman & CEO, Southwest
Nov 3, 2014

"So we are going to continue to run American as though we are still operating with \$100 per barrel oil"

Doug Parker
CEO, American Airlines
1/28/2015

"...we continue to run the airline as though high oil prices will return"

Derek Kerr
CFO, American Airlines
1/28/2015

"But for right now, we are still assuming the same fuel prices that we've used or that we have seen over the last few years, which is \$120-125"

Jim Compton
Chief Revenue Officer, United
2/15/2015

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Short term vs Long term thinking

- **Short term constrained by hedging**
- **Standard airline economic thinking will prevail**

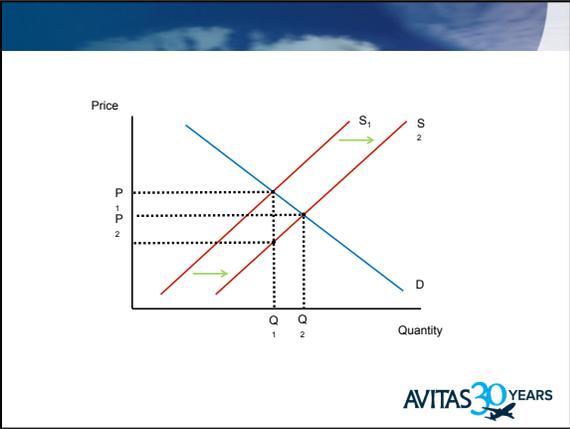
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"Helene Becker, analyst at Cowan Securities, said airlines would use their savings to improve cabins or pay down debt, rather than lower prices"

'why should airlines cut ticket prices if demand is strong?' she said"

**Reuters
2/5/2015**





"Ryanair expects its fares to drop between 10 to 15 percent over the next two years as it passes on the benefits of lower oil prices"

April 27, 2015

"...because of low fuel prices, you have more capacity in the market than you would have if oil was \$110 a barrel.

...industry capacity will probably rise 5% to 6% this year, while international capacity could increase 6% to 10%. Fares will be lower"

Scott Kirby
President, American Airlines
May 12th, 2015



"Delta President Ed Bastian said second-quarter revenue will increase by 2%. 'Our summer revenue performance combined with significantly lower fuel prices and continued strong cost controls should result in another record quarter' he said"

April 16th, 2015

"Anderson is confident that lower oil prices are here to stay. He's basing business decisions on oil costing \$US50 to \$US100 a barrel and a prediction that the US will be able to supply all of its petroleum domestically by 2020 thanks to advances in drilling technology"

May 18th, 2015

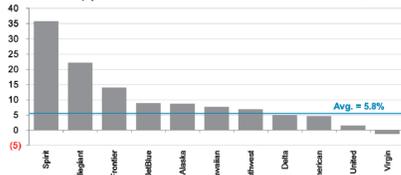
"Delta Air Lines tumbled over 5% yesterday on fears of excess capacity"

May 21st, 2015



Competitive Pressure Is Alive and Well Amid Rising Supply and Improving Finances
On Average, U.S. Airlines Increasing Domestic Capacity by ~6 Percent This Summer

YOY Growth (%) In Domestic Available Seat Miles: Summer 2015 vs. Summer 2014



Source: Inroads and The Motley Fool published schedules as of May 1, 2015; summer = June 1 through August 31; 2014 includes regional affiliates



airlines.org



"Planning with a low fuel price will only disappoint. And planning with a high fuel price, if you end up being wrong and the fuel price is lower, you will be pleased."

"It's really important when you're planning an airline over the long term, or making a 30 year decision on buying an airplane, to use a very high fuel price. Otherwise, you're not going to get [return on invested capital] and a free cash flow number that you are going to like"

Richard Anderson
CEO, Delta
2/18/2015



Summary



Big Question – Is it a blip?

- **My View**
 - No full fledged structural change **BUT**
 - Do not see \$100 oil for a long time



Bubble Environment Still Prevalent

- **High likelihood of catastrophic events to burst bubble**
 - Military tension (Russia et al)
 - Deflation
 - Regional adjustments
- ***“May you live in interesting times” becomes reality***



Cycle

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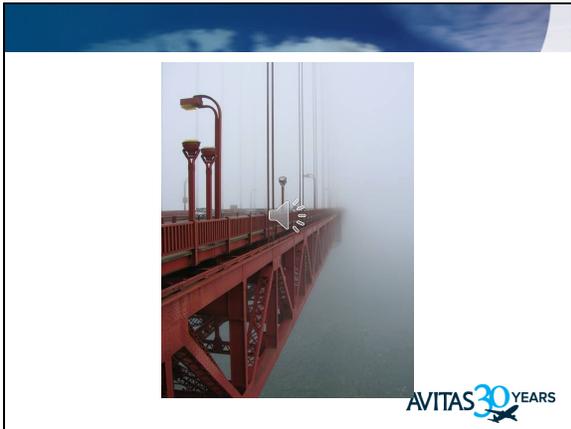
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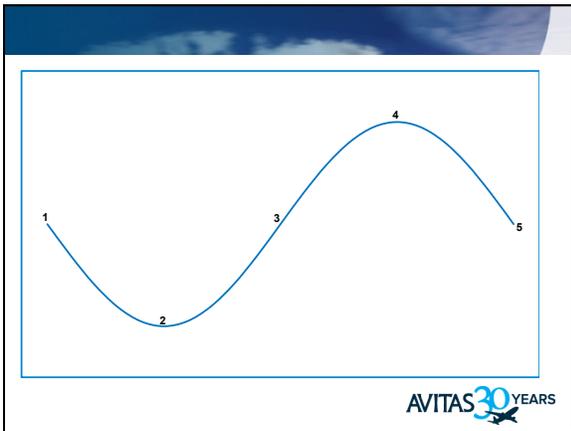


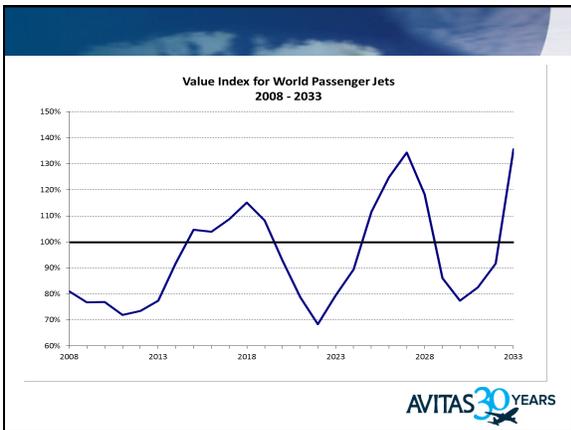
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Thank you for your kind attention





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