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How to forecast in a cyclical industry?

**Presentation to ICAO Air Transport Symposium
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Contents

- **Historic overview**
- **General principals**
- **Ideas for monitoring short-term cycle position**

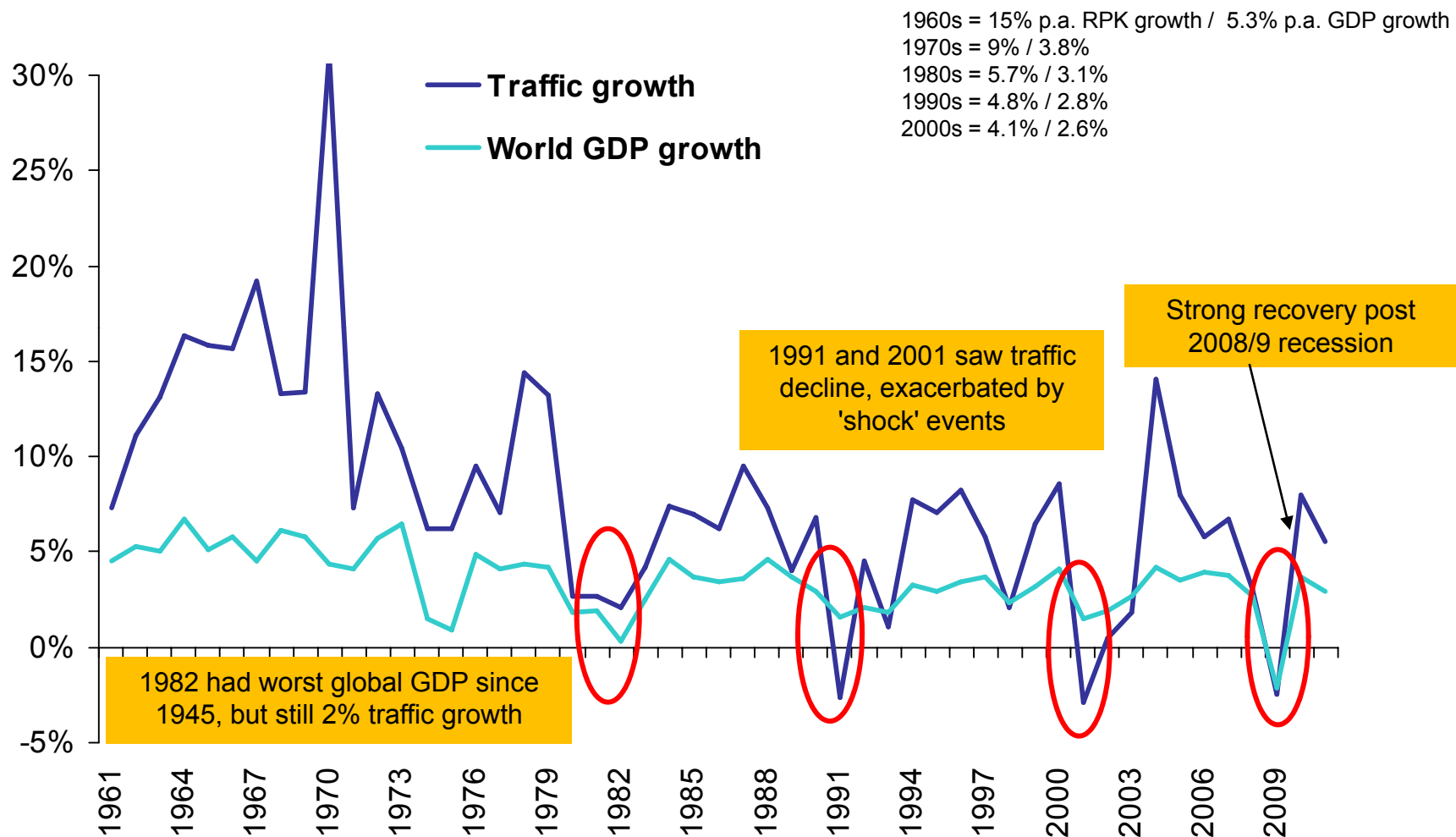
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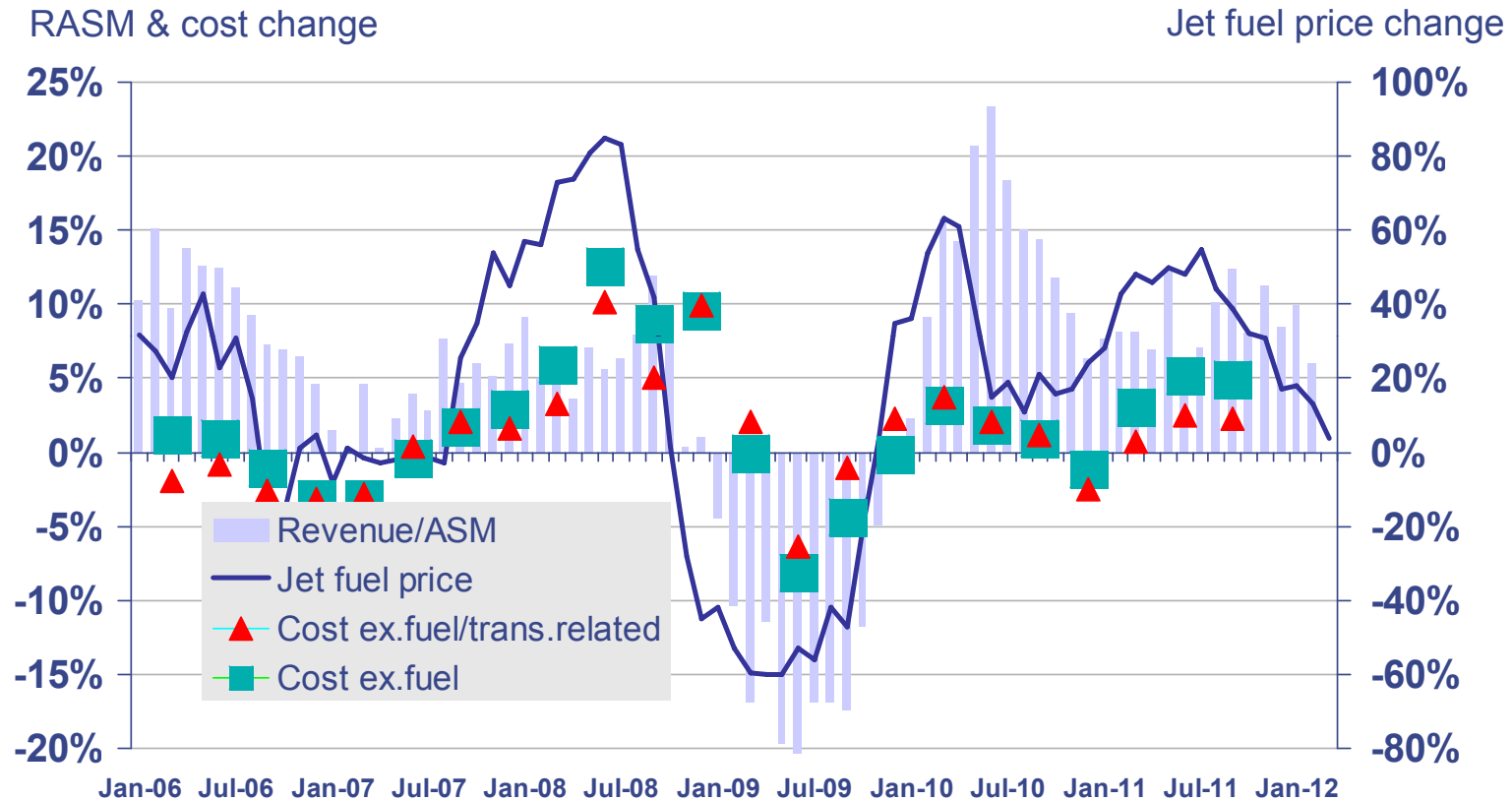
What factors are cyclical?

- **Economic growth?**
- **Demand?**
- **Capacity?**
- **Yields and costs?**
- **Airline results?**
- **Aircraft orders and deliveries?**
- **Retirements?**
- **Airline start-ups and exits?**

2011 is early in the recovery cycle

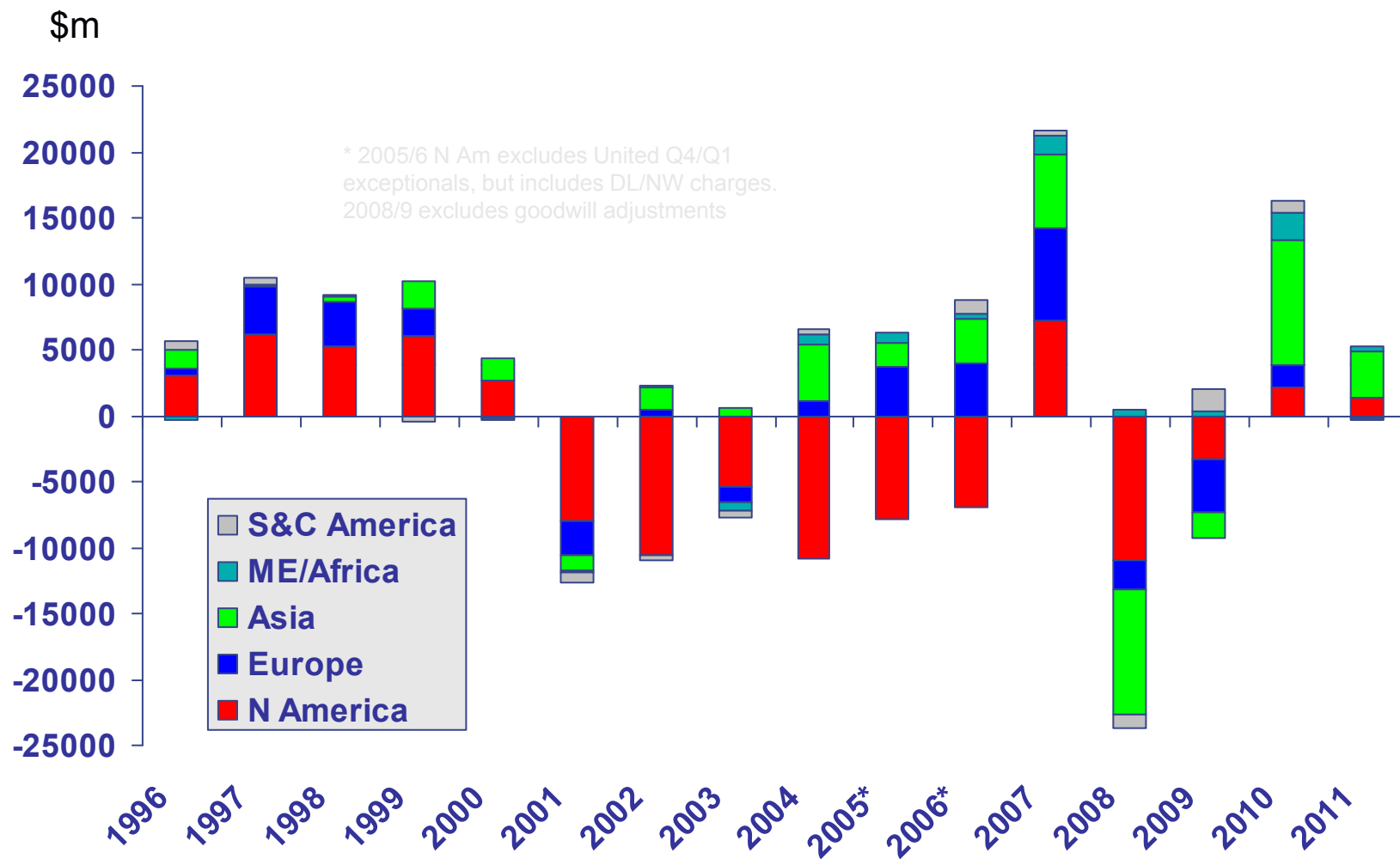


US revenue and cost trends 2006-12



Jet fuel prices flattening vs.2011. RASM holding well indicating strong demand.

Airline net financial results



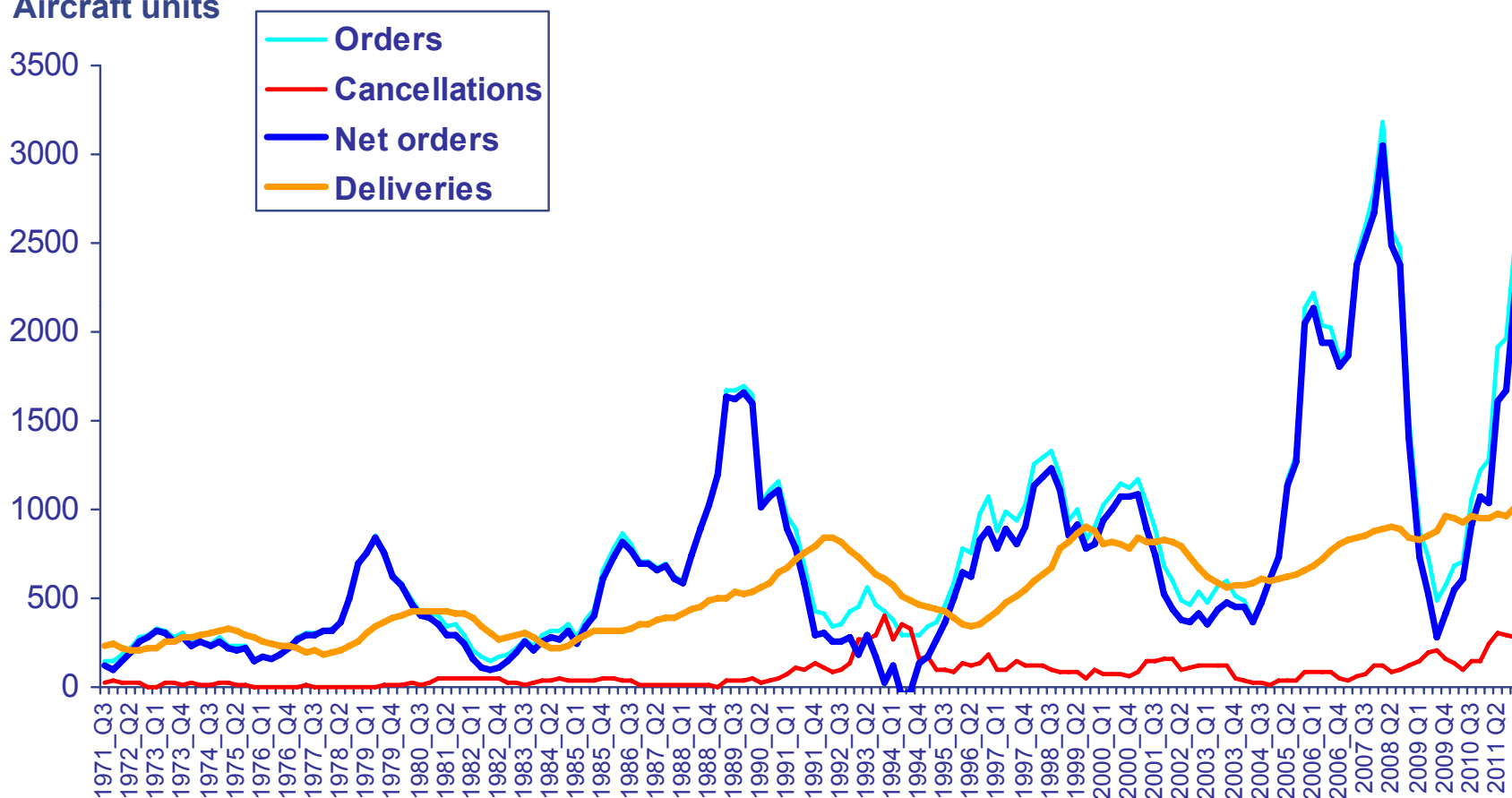
updated 10/4/12

Source: ICAO/Airline Monitor/Airline Business/R-R analysis

Orders & Cancellations

12-month moving average, 100 pax and above

Aircraft units

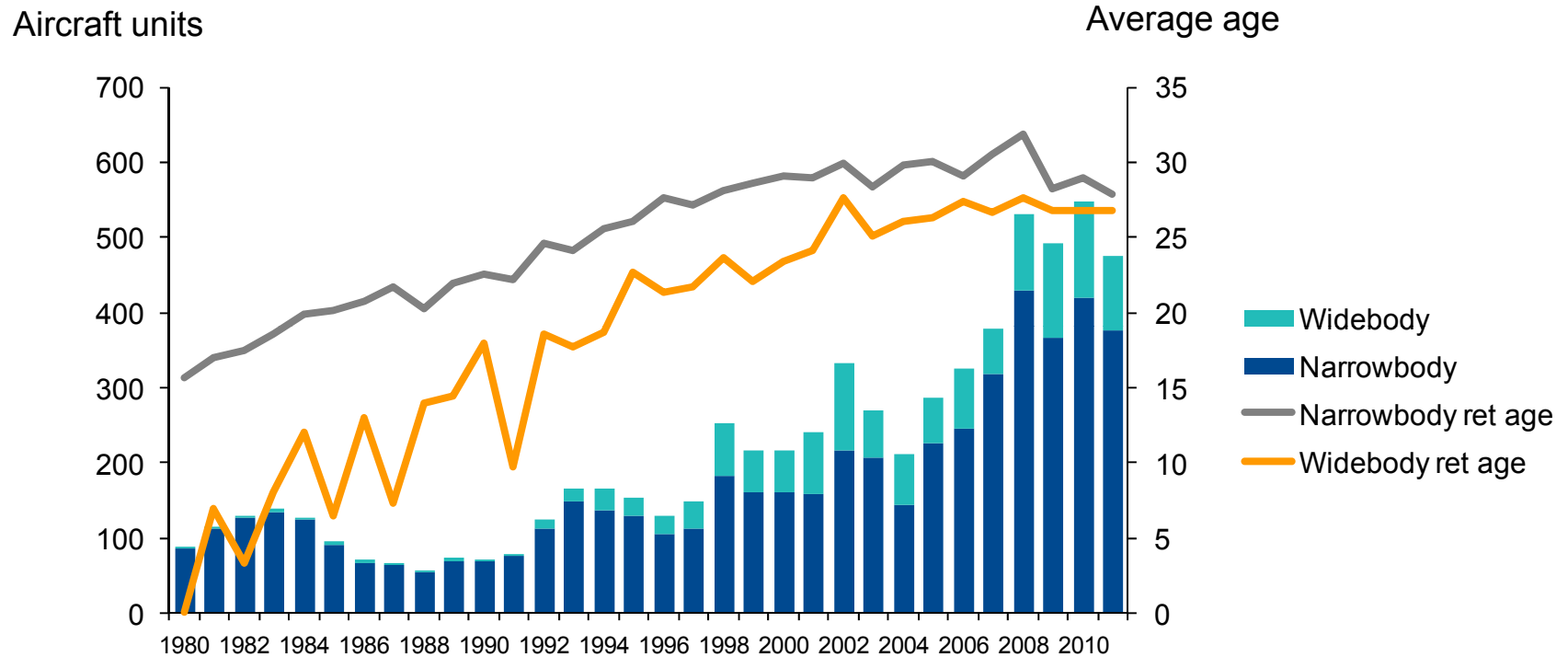


updated 10/4/12

Source: Airclaims
Orders and cancellations exclude type swaps



Record levels of aircraft retireals

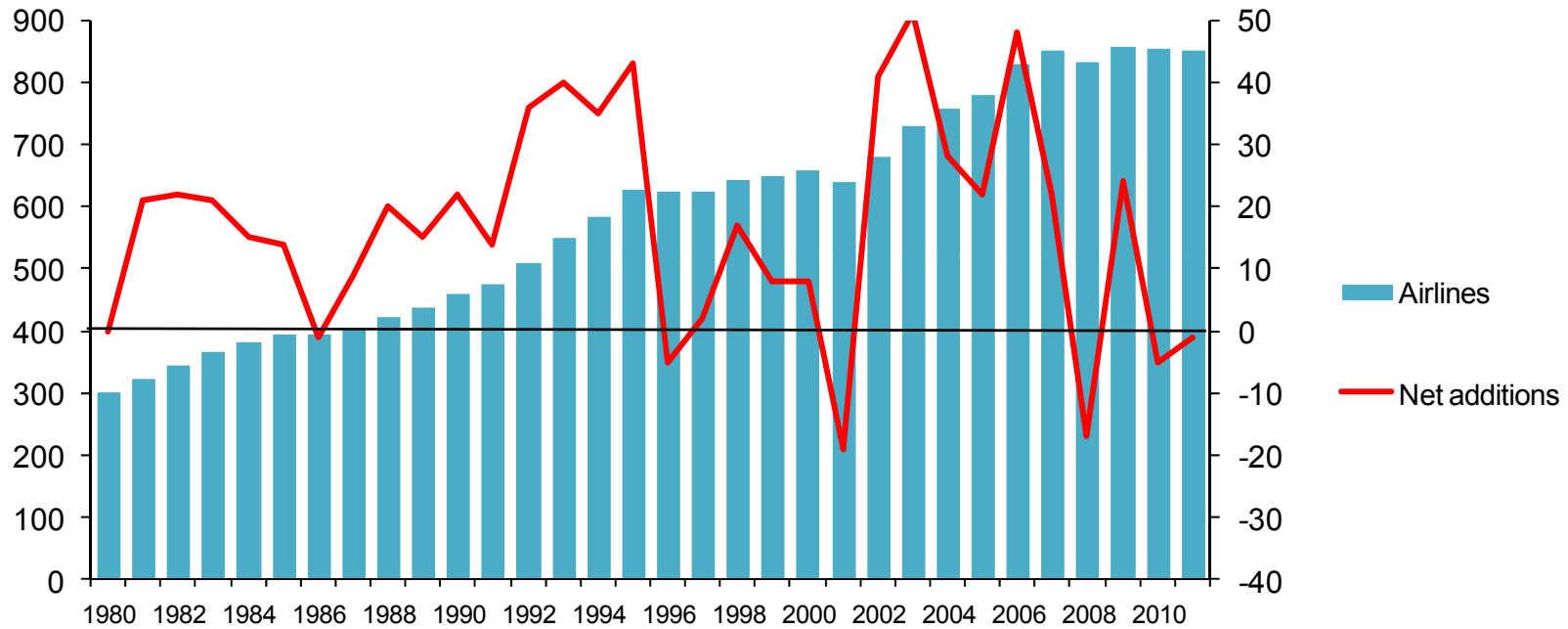


High fuel and commodity prices providing a catalyst for scrapping, as well as overcapacity through the recession

Number of airlines

No. of operators of in-service western-built jets

Net additions



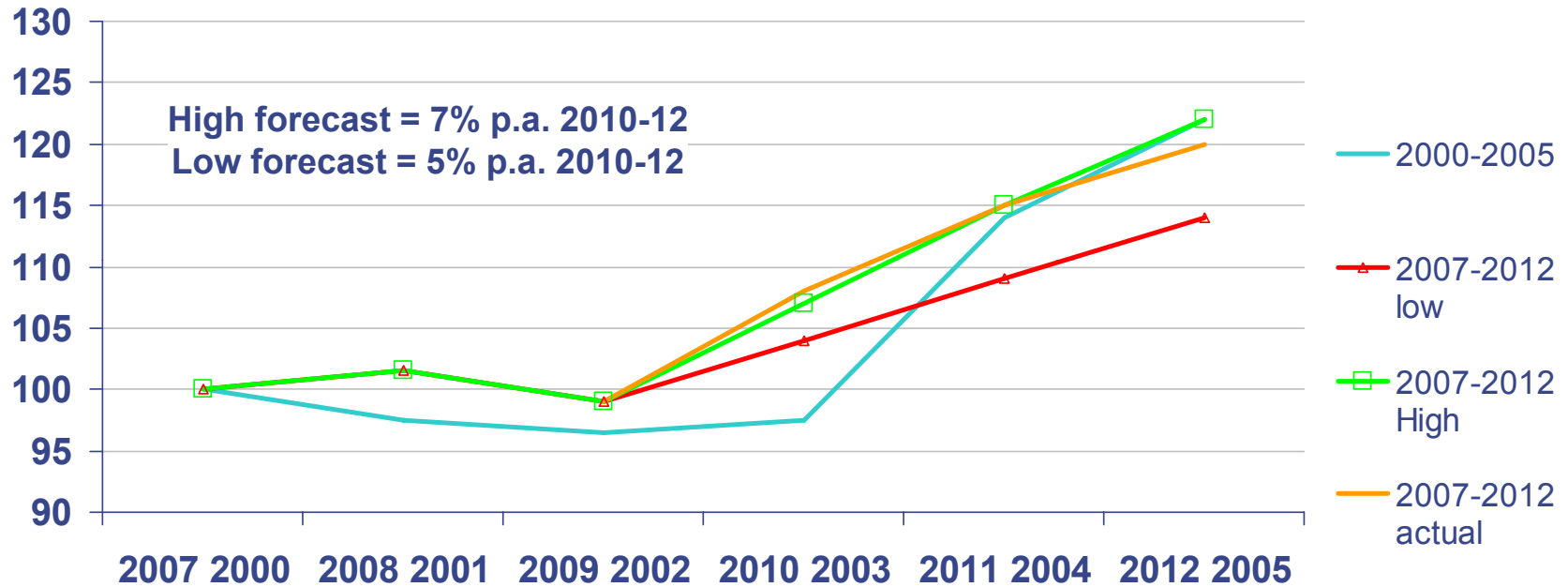
Number of airlines continues to grow, but some evidence of cyclical

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Passenger traffic through the cycle

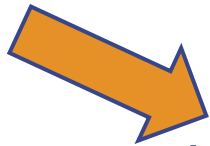
RPK (Index 2007=100)



2010 traffic forecast was forecast to be in range 5-7% growth, but actually came in at 8-9%. 2011, despite many events saw c6.5% RPK growth.

Summary of cycle position

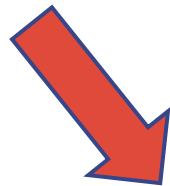
Demand falls, Airlines revenues & yields start to decline



Load factors down



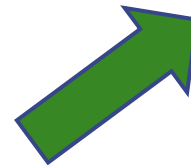
Utilisation cut



Aircraft parked

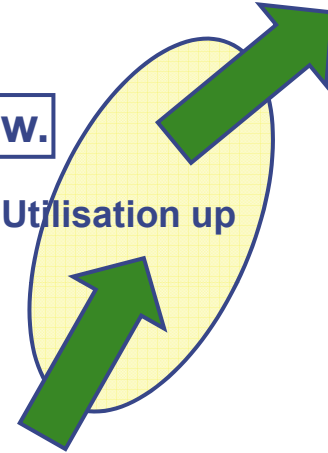


Demand starts to recover



Load factors up

Utilisation up



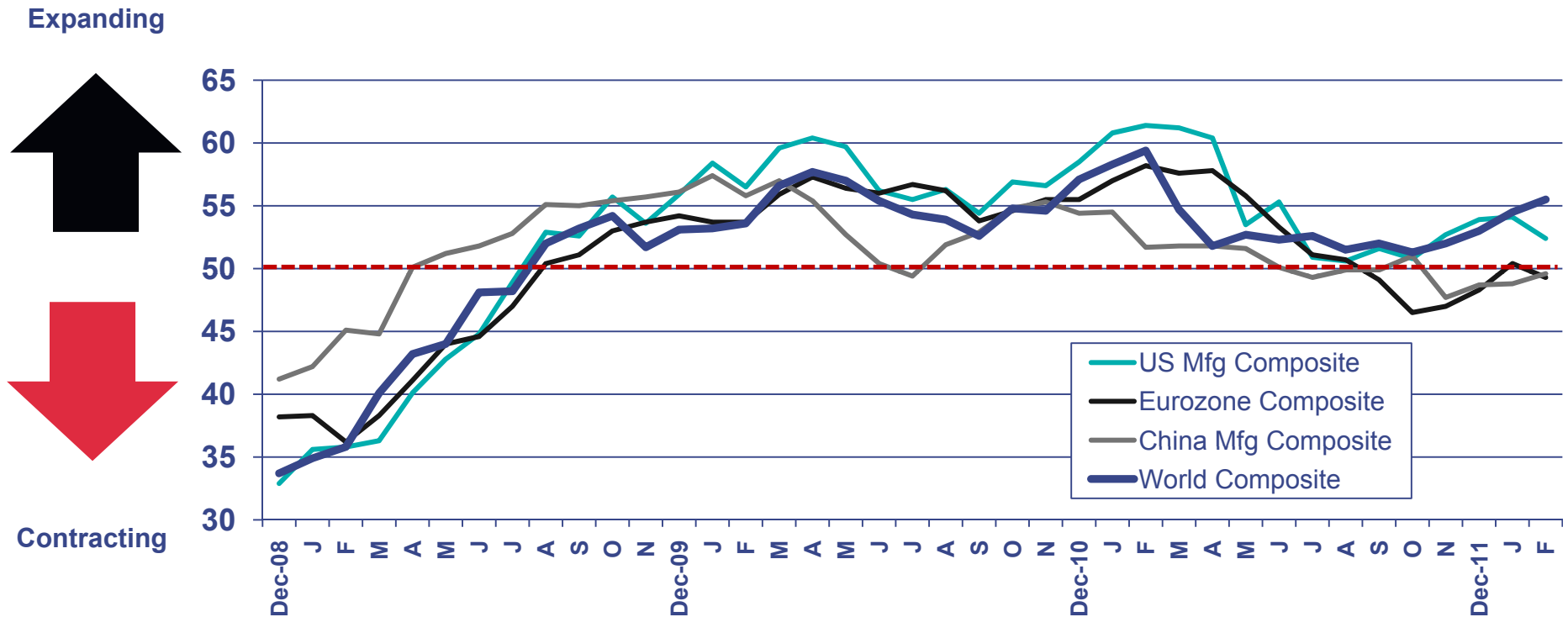
Aircraft return to service

We're around here now.

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Purchasing Managers' Indices (PMIs)



Sources

Eurozone = Markit

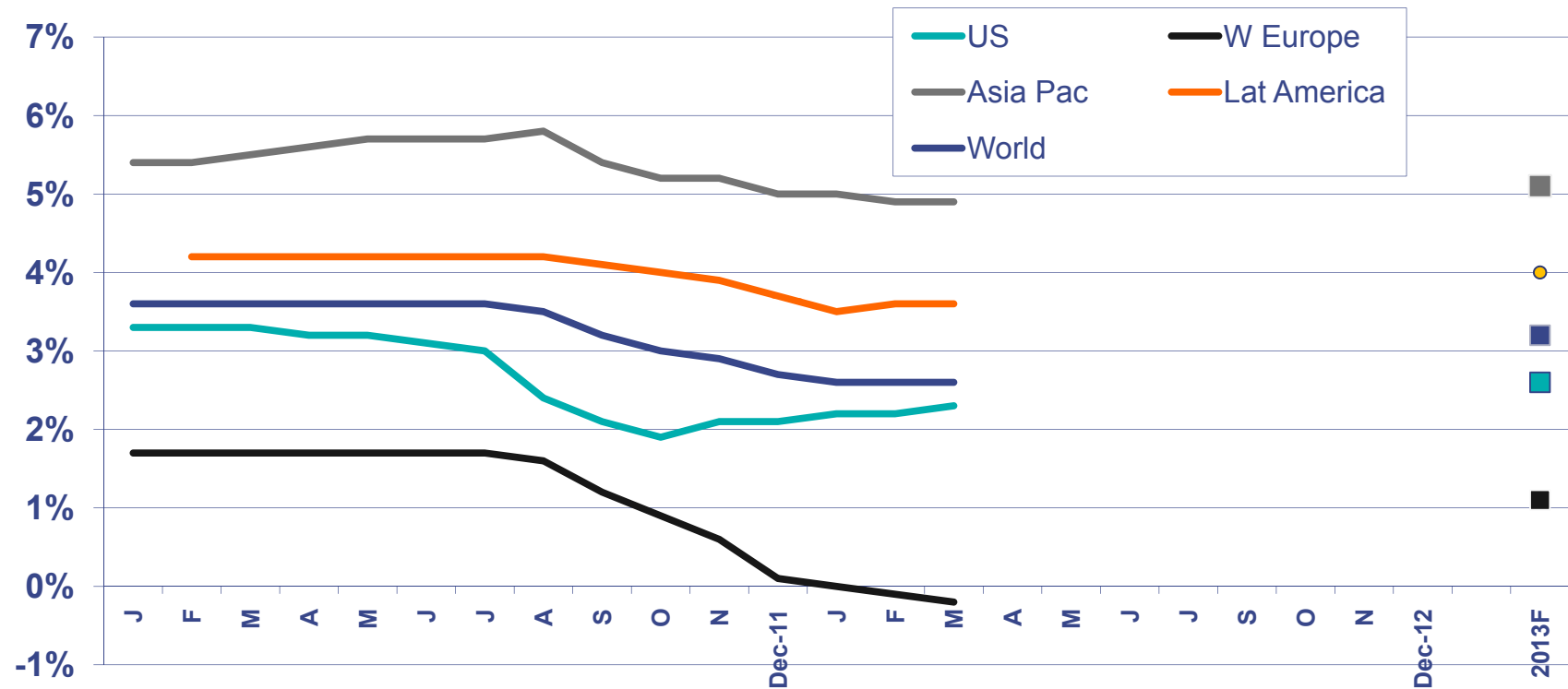
China = Markit/HSBC

US = ISM Manufacturing Report on Business

World = Markit/JPMorgan Global Mfg & Services PMI



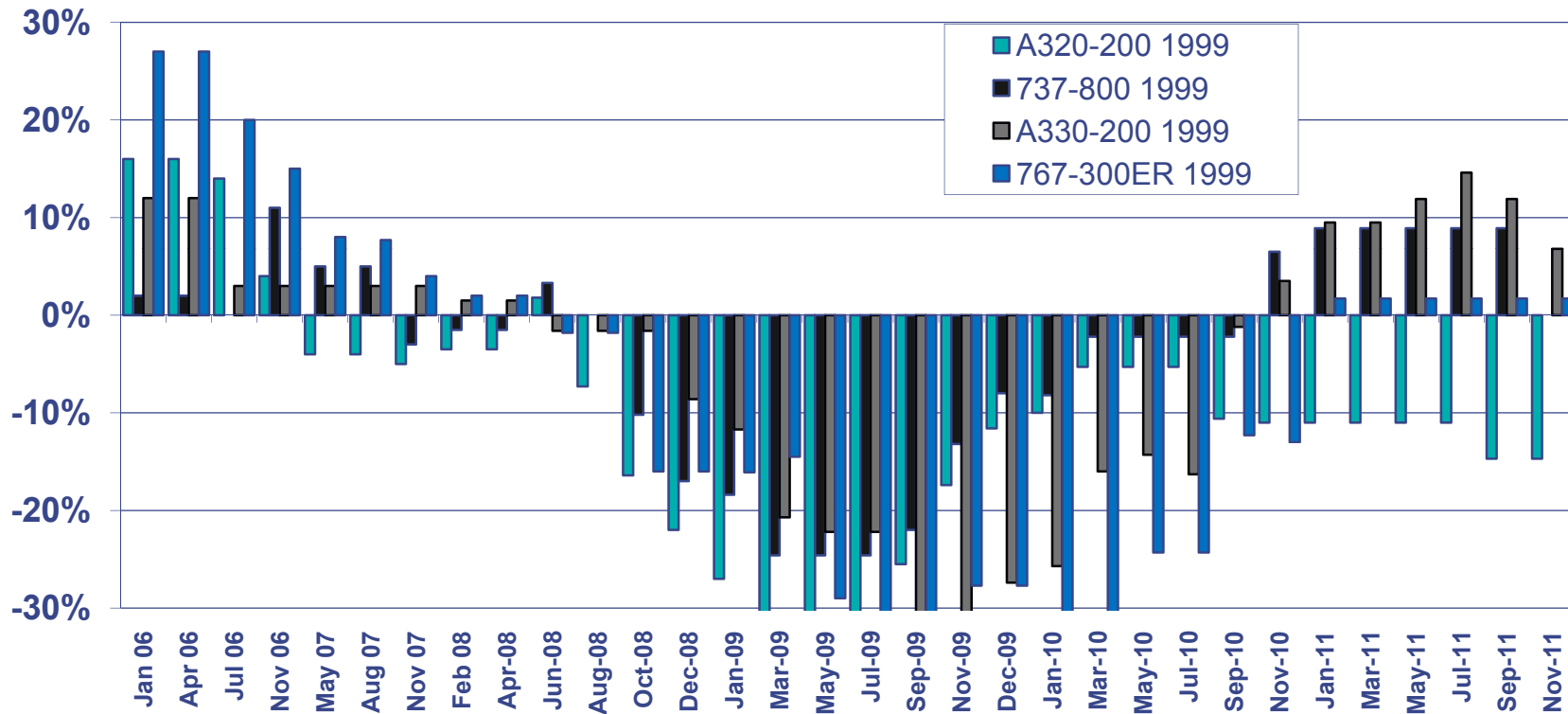
2012 GDP forecasts



Source: Consensus Forecasts

Lease Rates for Popular Types

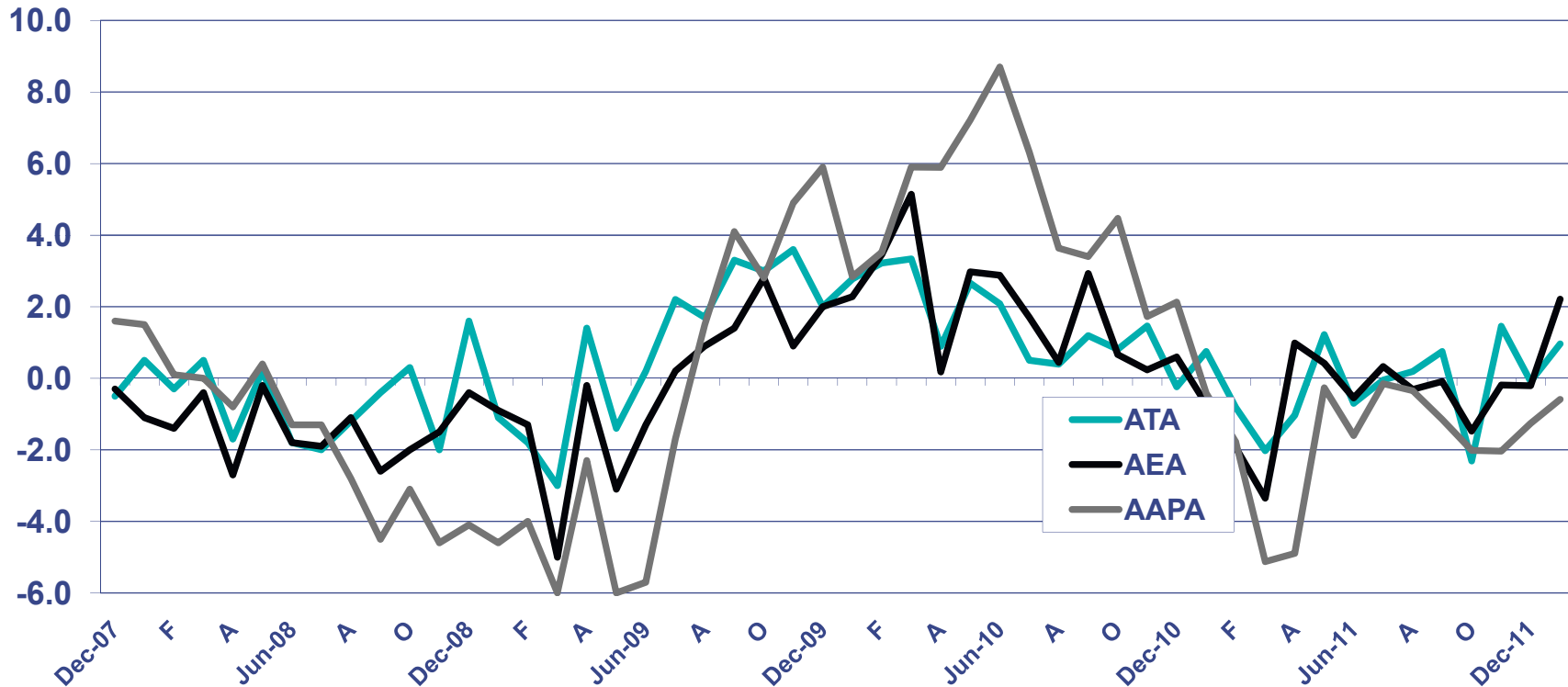
Change in lease rate y-o-y



Source: Ascend: change from 12 months ago

Load Factor Changes

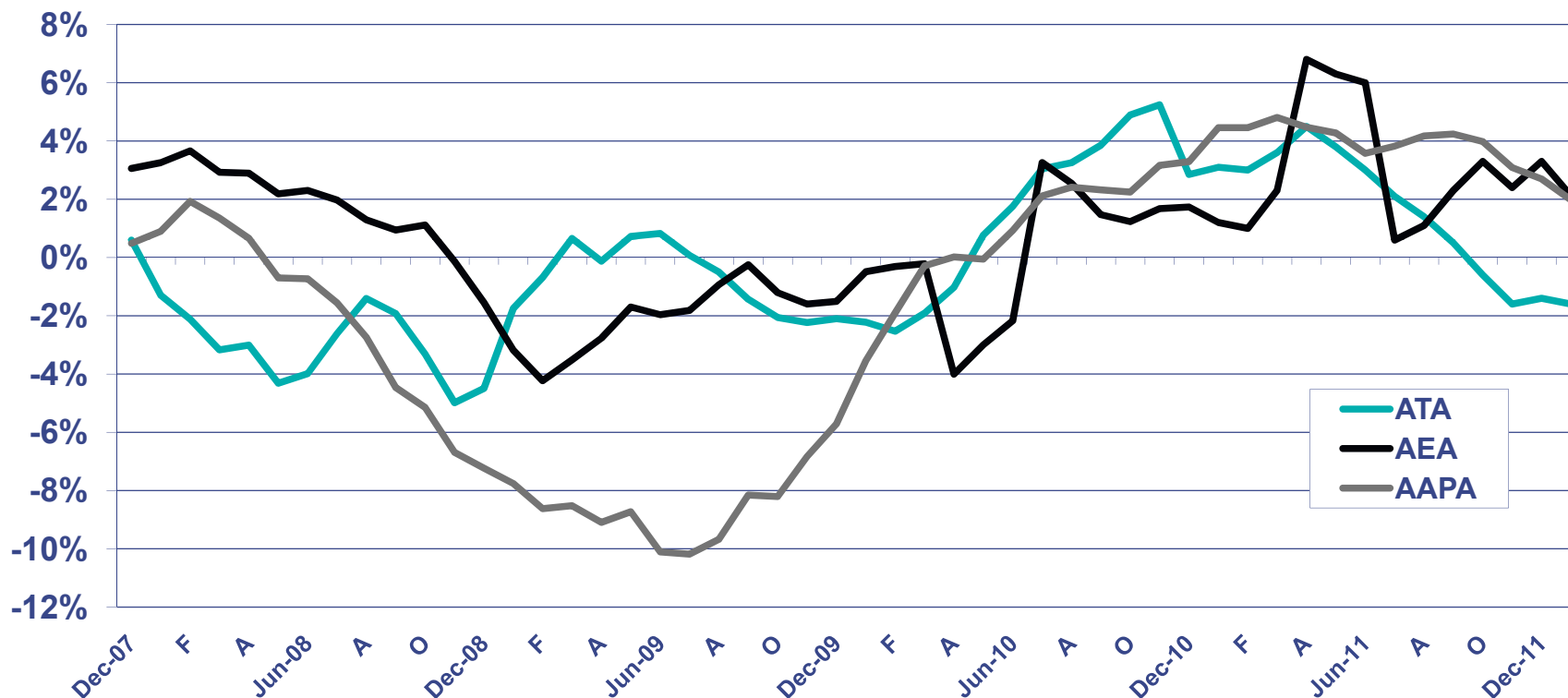
LF change y-o-y (% points)



Source: Association monthly press releases.

Aircraft productivity (ASKs/aircraft)

% Change y-o-y (Smoothed 3MMA)



Source: Ascend & Association monthly press releases. Fleet in service usage pax/combi/QC.

Industry Health – February 2012

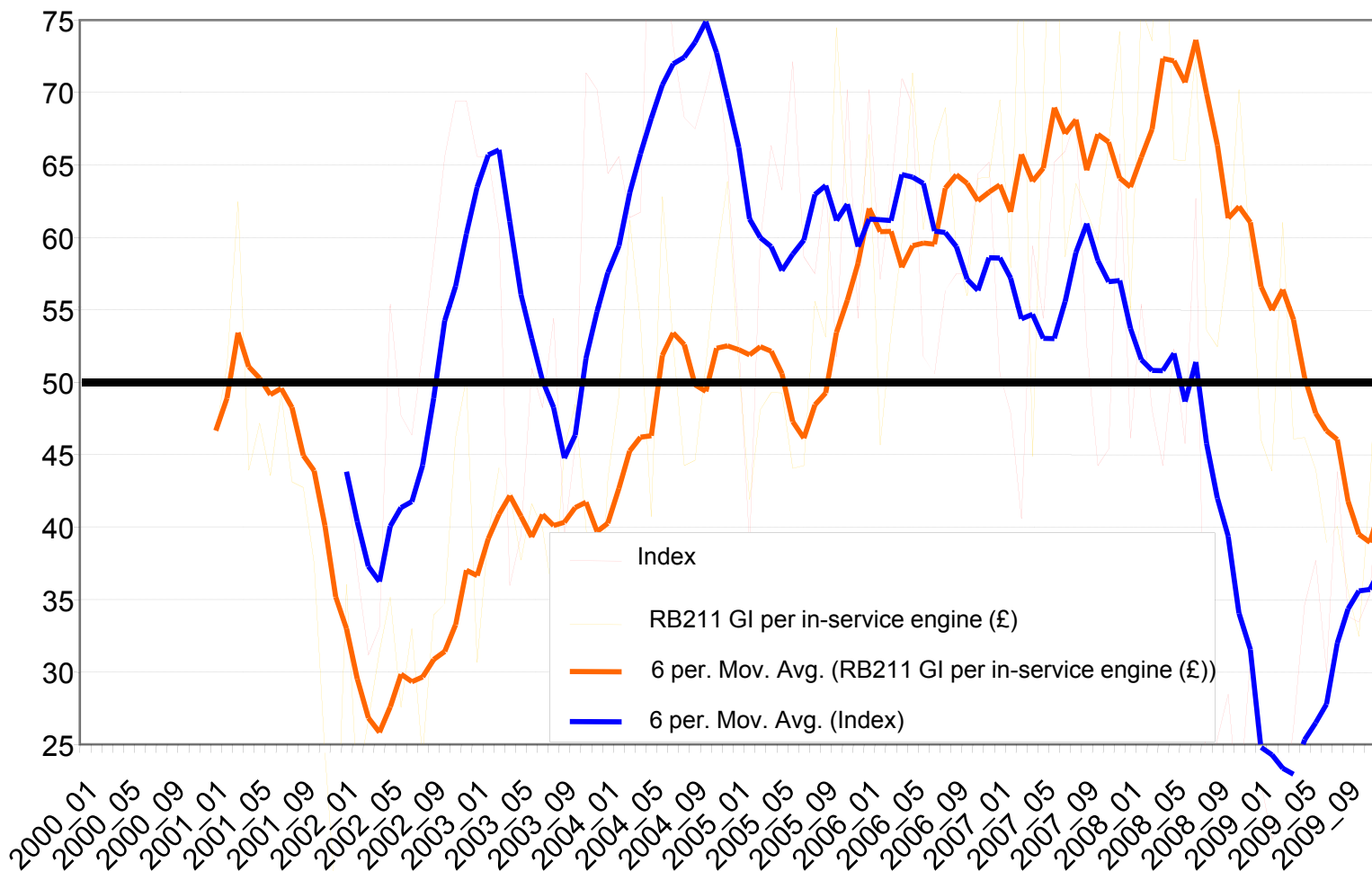
Metric	Current Status	Recent Trend	Commentary
Macro Metrics			
GDP Forecasts	Yellow	Yellow	
PMIs above 50	Green	Yellow	
Oil (Kerosene) Price decreases	Red	Red	
Passenger Load factor (PLF) Increases	Yellow	Green	
Productivity Increases	Yellow	Yellow	
Young PAX stored fleet decreases	Green	Yellow	
Lease Rates increases	Yellow	Yellow	
Net Orders increases	Green	Green	
Deferrals decreases	Green	Yellow	
Backlog-fleet ratio decreases	Red	Yellow	
Unplaced Lease orders decreases	Red	Red	
Cost & Revenue improvements	Yellow	Yellow	

Civil Aviation Outlook	<p>Capacity balance: +1 Macro data marginally positive on balance</p>	<p>Macro prospects diverging between Europe and ROW. US showing positive results</p>	<p>The capacity balance has reduced by 1 point as the productivity (utilisation) metric moves from positive to neutral. On balance the macro data suggests an upturn later in the year. We expect RPKs for 2012 to grow between 3.5%-4.5% but economic uncertainty means there is a high probability it could be outside this range.</p>
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PMI-type example for aftermarket

Index (>50 = growth)

Gross issues per engine



Summary

- **Most aspects of the air transport industry are cyclical – from economic demand drivers through to supply issues and costs. However, the cycle for OEMs plays out over the long term.**
- **Long-term forecasts should aim to avoid building in overly optimistic or pessimistic start points**
 - **If this can be consciously taken into account, then external shocks or recessions should not alter the long-term view**
- **Short term monitors to aid understanding of the current business cycle are needed**
 - **both to help with the long-term starting point, but also for management information and business health tracking**