



# Trends in Aviation Finance

Society of Actuaries Presentation

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Ireland as a location for aircraft leasing

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# Tax factors



12.5% rate of **corporation tax** on trading profits – one of lowest in Europe



12.5% p.a. tax **depreciation rate** (irrespective of the economic life of the asset) or accounting depreciation (on election)



An extensive **tax treaty network** (74 signed with 73 in effect, beneficial provisions for aircraft leasing)



**Stamp duty** exemption for aircraft.



**Unused losses** can be carried forward indefinitely



Enhanced tax incentives for **foreign employees/directors**



**Income tax relief** for time spent working in BRICS, Middle East and certain African countries



**Withholding tax exemptions** for interest and dividends



An attractive **securitisation regime** for leasing



**No outbound withholding** taxes on lease rentals



**No thin capitalisation rules** currently



0% tax in **regulated investment vehicles**

# Non-tax factors



**Global Centre** for Aviation  
Finance & Leasing since  
mid-1970's



All **major lessors** have  
operations in Ireland.



Almost all **ABS** are centred  
in Ireland.



Deep pool of local  
**expertise** –  
3,000+ employees



Young, well educated  
**work force**



**Politically stable**



Member of **Cape Town  
convention**  
Maintain Cape Town  
register



Over **4,000 of the world's  
leased aircraft/ engines**  
in Ireland. This accounts  
for over half of all aircraft  
leased globally.



Over **\$140bn of assets**  
under management.  
Over \$65bn on order



Dedicated **specialist  
aviation debt platform** on  
Irish Stock Exchange -  
\$12.7bn of debt listings



**English language**



Favourable **time zone** for  
dealing with East & West



**Chapter 11-10 type  
protection** for creditors  
lending against aviation  
assets



Highly developed  
**professional services**  
infrastructure



Cluster of **support  
businesses** – MRO's,  
Transitioning, CSP's



Facilitates **ECA backed &  
other orphan financings**








**Aircraft registrations** –  
highly regarded Irish  
Aviation Authority



Common **law system**


## Lessor jurisdiction comparison

	<b>Ireland</b> 	<b>Hong Kong</b> 	<b>Singapore</b> 	<b>US</b> 	<b>China FTZ</b> 
Corporate tax rate	12.5%	1.65% of net rental income ( <u>before</u> depreciation) Cash tax likely 4 – 6% Certain substance requirements	5-10% under Aircraft Leasing Scheme (“ALS”)/17% ALS rate applies for 5-10 years	21% + State Taxes ~ 25%	25% unless tax incentive provided.
Tax depreciation	8 years	None <sup>1</sup>	3 - 20 years	7 & 12 years	10 years
No. of tax treaties	74 (very good quality)	40 (mixed quality, best for Japan and China) <sup>2</sup>	82 (mixed quality) <sup>2</sup>	68 (good)	102 (poor)
WHT on rents	None	0%	2%	30%	10%
WHT on interest	0% in most cases	0%	0% in many cases	0%/30%	0%/10%
WHT on dividends	0% in most cases	0%	0%	30%	10%
Interest deductibility	No thin capitalisation rules currently	Certain limitations	No thin capitalisation rules	Thin capitalisation rules	Thin-capitalisation rules
Cape Town Convention	Yes	No	Yes	Yes	Yes
Local leasing expertise	Extensive	Limited	Limited	Extensive	Limited

1. Tax depreciation where aircraft on lease to Hong Kong lessee and no election made to enter into the new Hong Kong aircraft leasing regime


2. No US treaty which is a problem not just for leases to US airlines but also to any airline flying the aircraft into US

# Aviation Market




230%

The commercial aviation Industry has been resilient to external shocks, with traffic growing by 230% since 2000.




2x

Revenue passenger kilometres double every 15 years.




4.1Bn

Revenue Passengers Kilometres grew at 7.5% in 2018. This represents an impressive 4.1 billion passengers carried by air in 2018.




4.4%

It is projected that global annual air traffic will increase by an average of 4.4% for the next 20 years.



48,000

The commercial passenger aircraft fleet is forecast to more than double in the next 20 years, when it is forecast to reach approximately 48,000 aircraft.

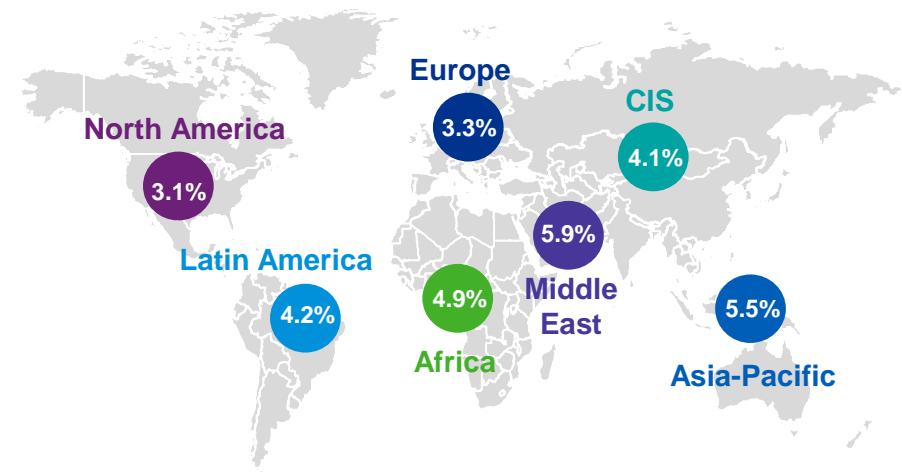


120Bn

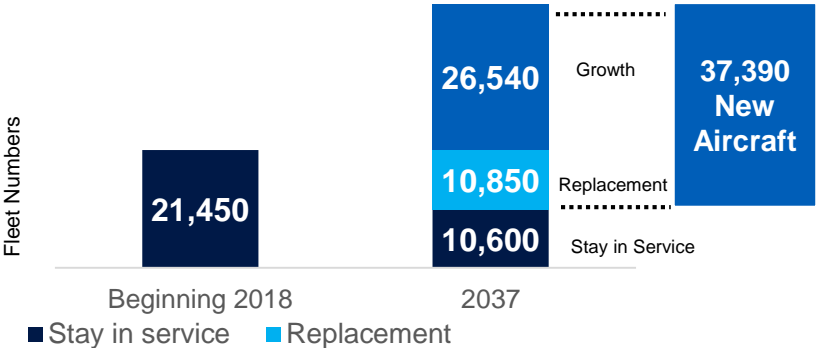
The growing aviation market will grow the aircraft maintenance, repair and overhaul market, expecting to double in size to more than \$120bn by 2036.

Source:  
Airbus Global Market Forecast 2018 - 2037  
International Air Transport Association

Forecast Air Traffic Growth 2018 – 2037



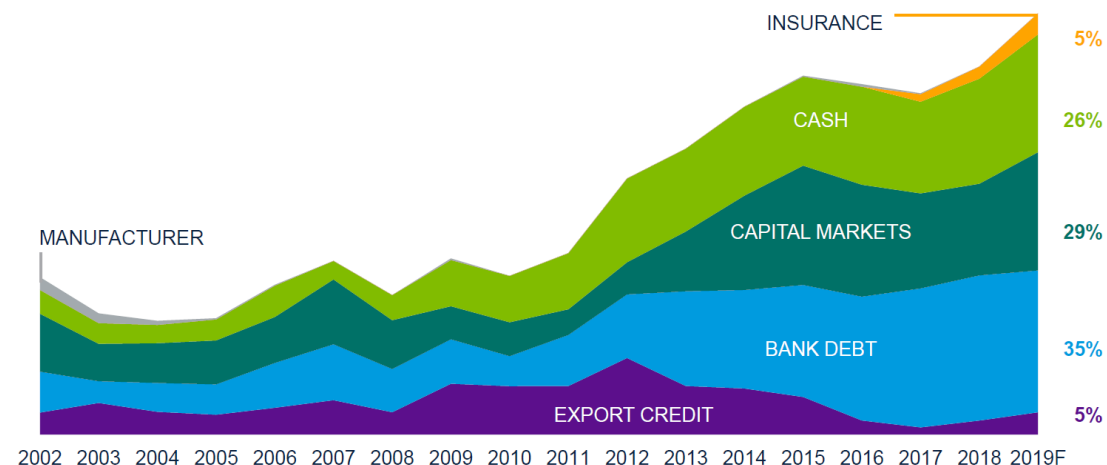
Fleet in Service Evolution 2018 - 2037



# Aviation Finance Overview

- The aircraft finance industry remains in a healthy state, with a diverse range of funding options available in a highly liquid sector.
- One of the defining characteristics of the aviation financing market is the ability to continually innovate and create efficient and suitable funding to meet the markets needs.
- Intensified competition, increased M&A activity, an abundance of liquidity pushing down margins and regulatory changes threaten to change the face of the aviation finance industry.
- Commercial bank debt and capital markets will continue to finance the largest share of aircraft deliveries. This trend is expected to continue as airlines and lessors strengthen their credit rating and can tap into the unsecured debt market at competitive rates.
- With markets remaining healthy and numerous financing options available, export credit volumes saw another year of decreased use. The shut down of EXIM, to new deals also contributed to this.
- Aircraft leasing continues to grow in relative size and importance. Expect to see further lessor consolidation, rapid portfolio turnover and the use of varied financing structures to enable capital market funds to be deployed as a source of equity.

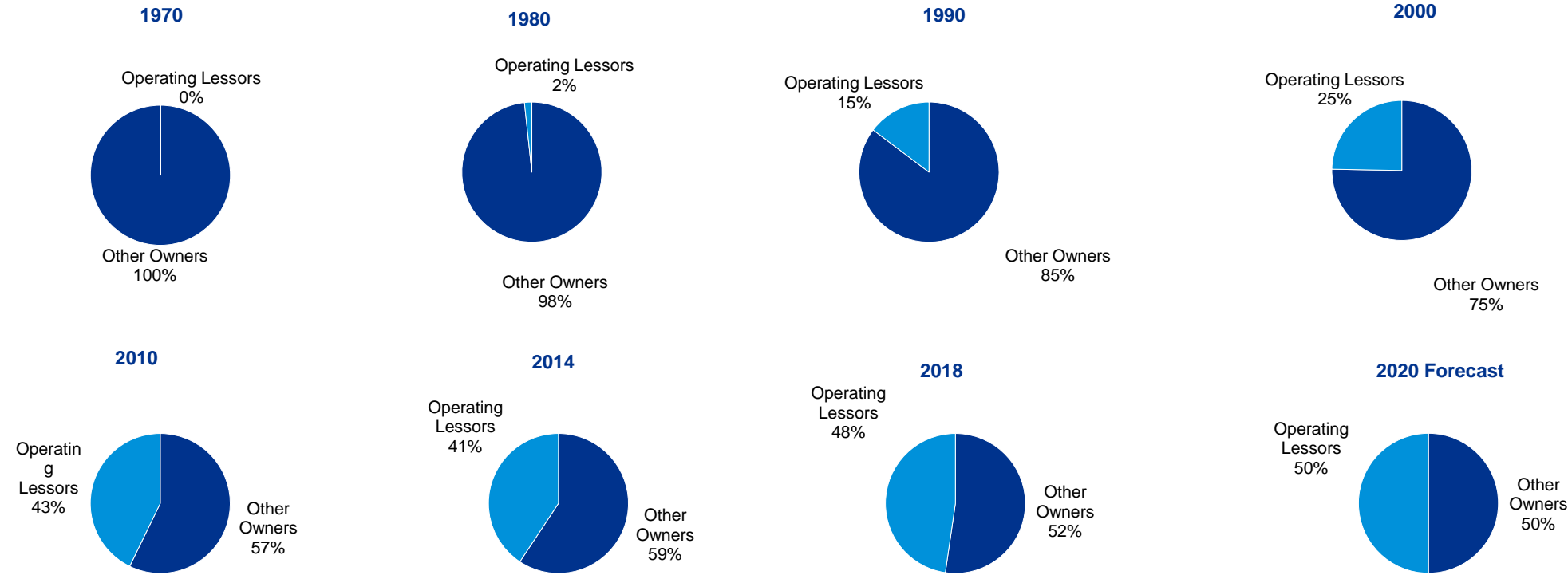
## Aircraft delivery financing breakdown



Source:  
Current Aircraft Finance Market Outlook  
Boeing Capital Corporation, 2019.

# Lessor Landscape Evolution

Evolution of Operating Lease Penetration between 1970 and Forecast by 2020

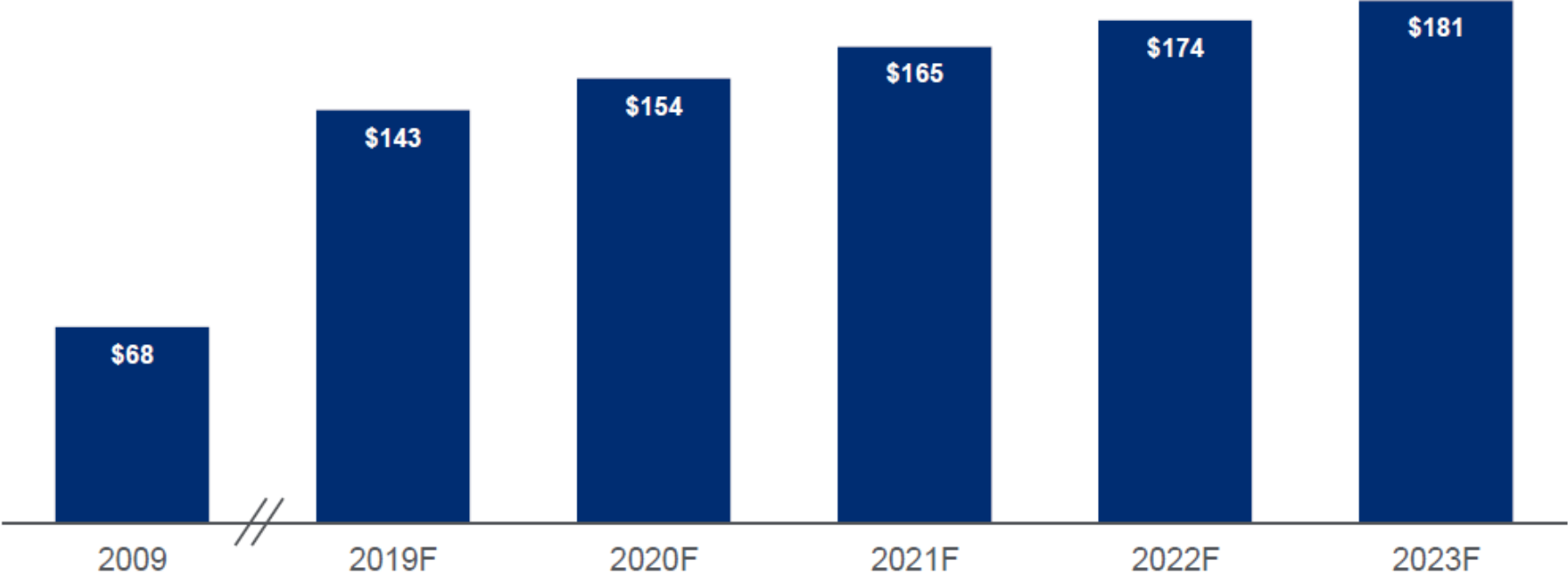


Sources:  
ALTA Quarterly Aviation Briefing, Oliver Wyman, 2017 and Ascend; Oliver Wyman Global Fleet & MRO Market Forecast Commentary 2018 - 2028.  
Note: Includes Boeing and Airbus only



# Growing Delivery Finance Requirements

Financing Forecast for Global Commercial Airplane Deliveries (US\$ in Billions)



Source:  
Current Aircraft Finance Market Outlook  
Boeing Capital Corporation, 2019.

# Headwinds in the aviation industry

1

**Macro Economy – slowdown  
in growth**

5

**Concerns over oil prices**

2

**Geopolitical threats – Brexit /  
Trade Disputes**

6

**Rising labour & maintenance  
costs**

3

**Rising global interest rates**

7

**Cool down in passenger  
growth**

4

**Reduction in quantitative  
easing**

8

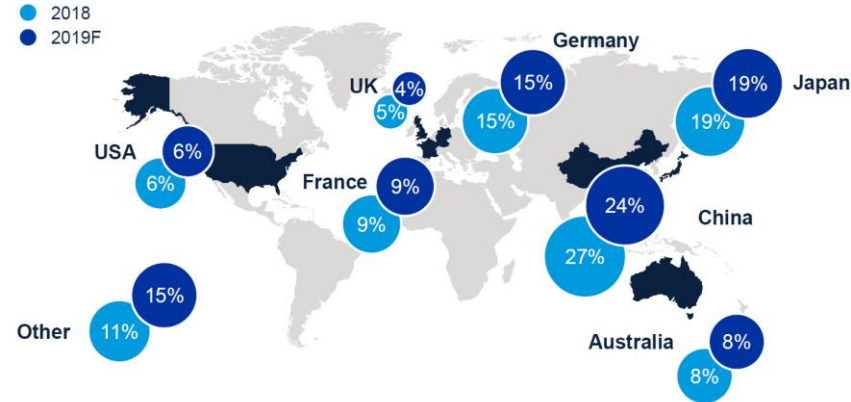
**Ultracompetitive leasing  
market**

# Trends in aviation finance

- 1 Increased competition in bank debt market globally
- 2 Lessor domination of capital markets to continue
- 3 Resurgence of JOLCOs
- 4 Emphasis on credit ratings and unsecured funding
- 5 US airlines continue to exploit EETC market
- 6 Resilience of ABS for lessors
- 7 Trends with other sources of finance

# 1. Increased competition in bank debt market globally

Spread of aviation bank debt per country in 2018 and 2019F



Source:  
Current Aircraft Finance Market Outlook  
Boeing Capital Corporation, 2019

- However Basel III/IV may impact institutions' ability to lend from 2022.

## Potential Basel III/IV impacts

- Additional \$17bn - \$34bn in Tier 1 capital requirement being raised
- Decreased capital availability for secured aircraft lending
- Reduction in low-risk aircraft loan portfolios on banking books
- Possible shift towards unsecured aircraft lending and riskier types of collateral
- Increased emphasis on public credit ratings

- Aviation financing has become much more mainstream and attractive
- New and old banks returned to the aviation banking sector tempted by margin and fee income from bank debt and capital market products.
- The return of the bank market, particularly over the past two to three years, has been impressive.
- Increase in liquidity and competition.
- Unsecured debt is increasing, notably for lessors which are already or aiming at being investment grade within the coming year.
- However, it should be noted that average levels of leverage within lessors has reduced significantly over the past 10 years (average of 5.9x Debt / Equity in 2009 versus 2.6x in 2019).

## Next Generation of Aviation Lending Banks

New and Returning International Lenders  
Aircraft Banking Becoming Truly Global Industry

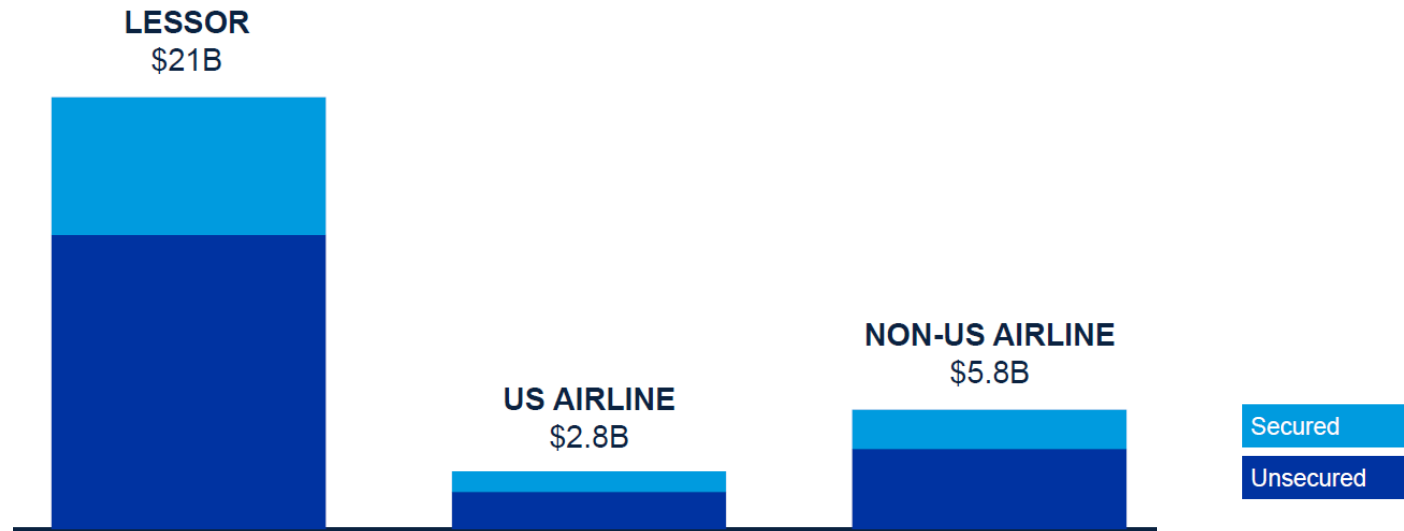


Source:  
Current Aircraft Finance Market Outlook  
Boeing Capital Corporation, 2019.



## 2. Lessor domination of capital markets to continue

- In 2018 lessors accounted for close to 71% of funding in capital markets as they accessed unsecured debt and ABS issuances to finance their portfolios.
- Continued reduction in both US airline (\$12.7bn in 2016, \$8.2bn in 2017, and \$2.8bn in 2018) and non-US airline (\$27.3bn in 2016, \$14.9bn in 2017 and \$5.8bn in 2018) sectors.
- Falloff in overall Lessor numbers (from \$42.3bn in 2017) but continued growth in percentage share of market (37% in 2016 and 65% in 2017).



Source:  
Current Aircraft Finance Market Outlook  
Boeing Capital Corporation, 2019.

### 3. Resurgence of JOLCOs



#### What is a JOLCO?

- Japanese operating lease with call option
- Call option which has a minimum lease term of typically 10 years
- Tax deferral benefit for investors
- SPV established with 100% ownership by equity arranger
- Typically 20-30% of SPV's equity provided by Japanese equity investors. Remainder comes from banks.



#### Benefits of JOLCOs?

- Provides Japanese investors with depreciation allowances that can be written off against taxable income.
- Provides airlines with 100% financing with an attractive equity IRR, since equity investors are focused on tax benefits more so than yield.
- The call option (approx. 10 years) permits at lease expiry:
  - Airline has ability to reacquire the aircraft, and
  - Investor can exit without remarketing event.

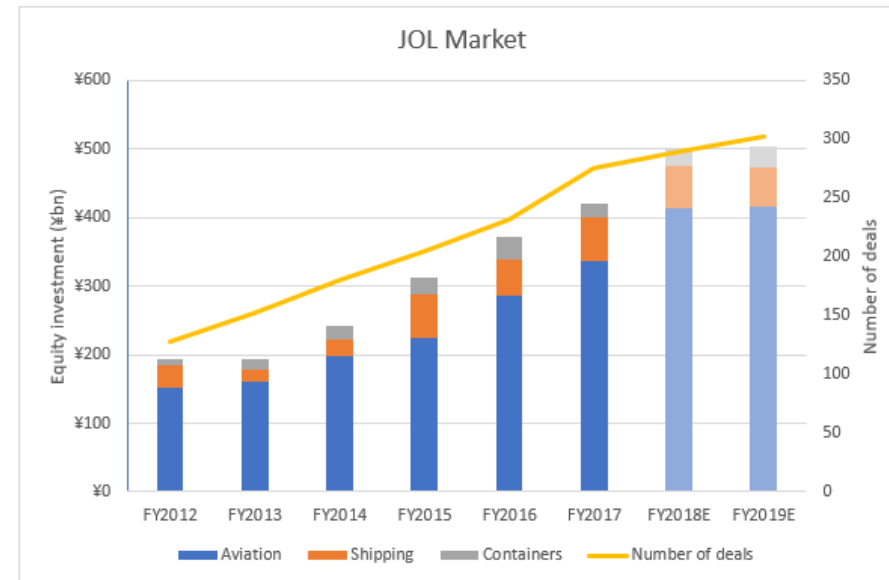


After tremendous growth between 2013 and 2017, the Yano Research Institute ("YRI") predicts an upcoming plateau in the number of JOL deals.



YRI predicts that in 2019, JOL sourced funding within aviation will total ¥415 billion (\$3.80 billion) – essentially static from the ¥414.6 of 2018.

Transition of Market Size by JOL Product Category



Source:  
Ishka - Aircraft Finance Market  
Tuesday 15 January 2019

# 4. Emphasis on credit ratings and unsecured funding

We have recently seen a significant increase in the levels of unsecured funding available to airlines and lessors which is underpinned by:

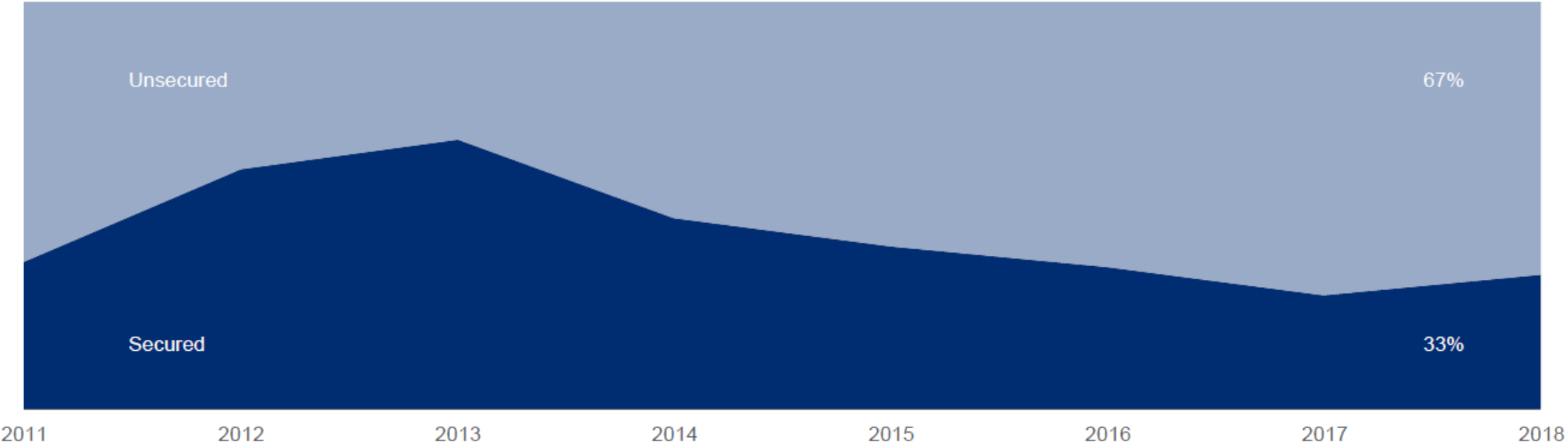
- Time-tested stable returns over a prolonged period
  - High historical recoveries
  - Increased regulatory protection e.g. Cape Town Convention
  - Potential impacts of Basel III/IV capital requirement calculation
  - In the past 10 years, unsecured debt trading levels have improved dramatically
  - This has resulted in a number of airlines and lessors seeking public credit ratings to avail of this unsecured debt in both the banking and capital markets.
- Examples below:

Median YTM	Lessors	Airlines
2009	14.90%	9.80%
2019	3.55%	5.81%



# 4. Emphasis on credit ratings and unsecured funding

## Growth in Unsecured Funding Reflects Market Confidence in Aircraft Lessors



Source:  
Current Aircraft Finance Market Outlook  
Boeing Capital Corporation, 2019.



## 5. US airlines continue to avail of EETC market

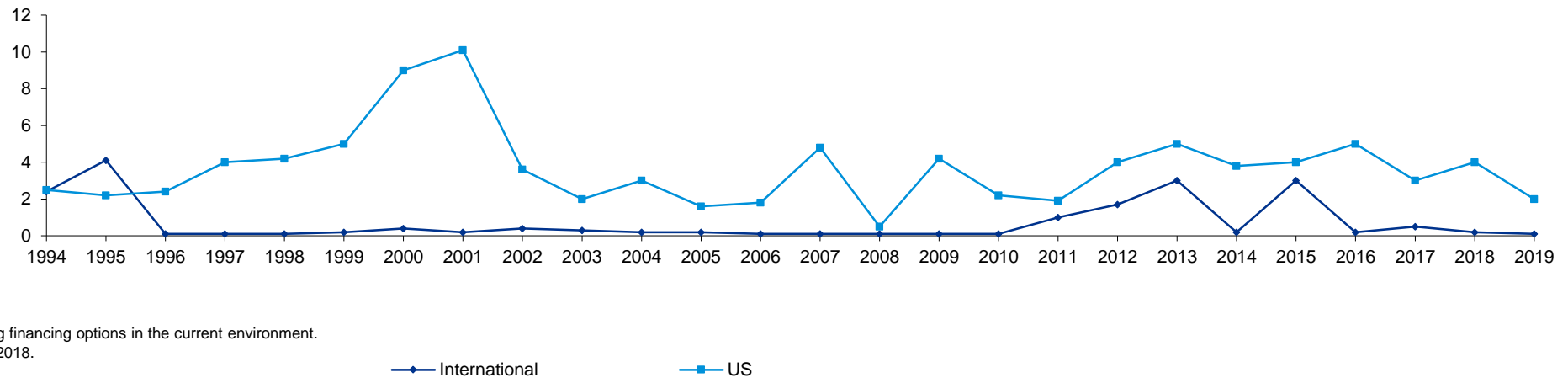


### What is an Enhanced equipment trust certificate (EETC)?

- Structured debt instrument issued by a single airline. Introduced in 1994. Secured on aircraft.
- Notes tranching to achieve higher ratings and lower cost on the senior debt.
- Credit enhancement, liquidity facility and cross-default provisions across underlying collateral.
- US airline issuance continues to dominate this market.
- Several international airlines have been able to issue EETCs with the progression of the Cape Town Convention.



### EETC / Aircraft – Secured Issuance by Year (\$bn)



Source:  
Reviewing financing options in the current environment.  
Citi April 2018.

## 6. Resilience of ABS for lessors

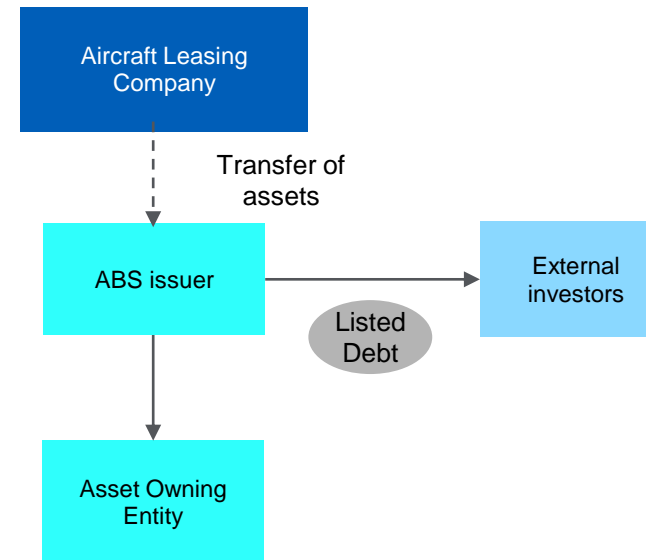


### What are Asset Backed Securities?

- Standard securitization structure where:
  - Lessor transfers aircraft and lease contracts into a SPV. Secured on aircraft.
  - SPV will issue portfolio financed notes.
  - Lessor stays on as servicer and retains residual interest of aircraft.
- ABS market remains an important alternative for lessors to sell and/or finance their portfolios of aircrafts.
- Has fostered innovative structures that help differentiate and manage risk profiles of all ages of aircraft.
- Allows lessors broader access to both secured and unsecured funding.



### Structure of Asset Backed Securities



## 7. Trends with other sources of finance

### Aircraft Finance Insurance Consortium (AFIC)

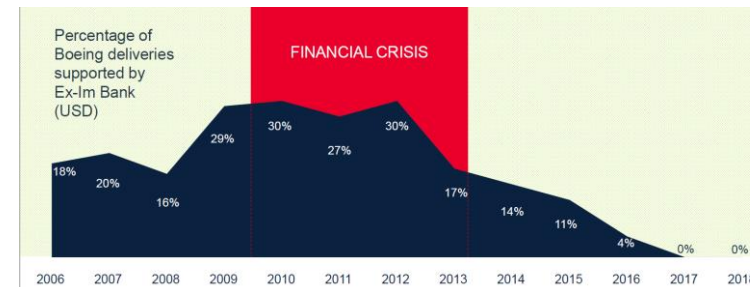
- Involves issuance of an AFIC non-payment insurance policy (ANPI).
- Insurers do not provide funding, but assume risk of default by providing coverage to lenders.
- BCC collaboration with Marsh in 2017 in the creation of the aircraft finance insurance consortium (AFIC).
- To date, AFIC has supported:
  - 50 aircraft
  - Approximately USD3.5 billion in funding;
  - 11 airlines and leasing companies;
  - Commercial lenders and institutional investors (over 20 financial institutions have participated);
  - USD and EURO loans.



Source:  
ISHKA – Investing in Aviation Finance Europe  
2019

### Export Credit Agencies (ECA)

- Institution that acts as an intermediary between national governments and exporters and issues export financing.
- Finance can take form of credits or credit insurance and guarantees.
- Inefficient in comparison to capital markets.
- ECA-supported transactions continue to be well below historical levels.
- ASU 2011 – increase in fees and tightening of terms have rendered this product less attractive. ECAs have fallen sharply since 2012.



Source:  
Current Aircraft Finance Market Outlook  
Boeing Capital Corporation, 2019.

# Capital Structure Comparison

Extremely diverse financing environment with a few standardised structures, including loans, airline bonds (Enhanced Equipment Trust Certificates or EETCs) and securitisation. Lessors increasingly issuing in public corporate debt markets.

1 Typical Financing	2 Airline EETC	3 Lessor Securitization	4 Other
<ul style="list-style-type: none"> <li>Loans and private notes</li> </ul> <div> <div> <div>~75% LTV</div> <div> <div>Senior</div> <ul style="list-style-type: none"> <li>Unrated or "A"</li> <li>12yr / 6.5yr WAL</li> <li>L+100-250bps</li> </ul> </div> </div> <div> <div>~85%</div> <div> <div>Junior</div> <ul style="list-style-type: none"> <li>Unrated or "BB"</li> <li>3-12yr WAL</li> <li>L+350-700bps+</li> </ul> </div> </div> <div> <div>Implied Equity</div> </div> </div> <p>~50+ Global Class Airlines ~30+ Global Scaled Lessors</p>	<ul style="list-style-type: none"> <li>Long-term, <u>recourse</u> financing with ring-fenced collateral of <u>single airline</u> issuer</li> </ul> <div> <div> <div>~45% LTV</div> <div> <div>Class AA (Optional)</div> <ul style="list-style-type: none"> <li>"Aa3 / AA"</li> <li>12yr / 9yr WAL</li> <li>L+125-200bps</li> </ul> </div> </div> <div> <div>~55%</div> <div> <div>Class A</div> <ul style="list-style-type: none"> <li>"A3 / A / A"</li> <li>12yr / 7-9yr WAL</li> <li>L+175-500bps</li> </ul> </div> </div> <div> <div>~70%</div> <div> <div>Class B</div> <ul style="list-style-type: none"> <li>"BBB"</li> <li>7yr / 5.5yr WAL</li> <li>L+250-650bps</li> </ul> </div> </div> <div> <div>~85%</div> <div> <div>Class C</div> <ul style="list-style-type: none"> <li>"BB"</li> <li>5yr bullet</li> <li>L+ 350-800bps</li> </ul> </div> </div> <div> <div>Implied Equity</div> </div> </div> <p>9-11% IRR (third party)</p>	<ul style="list-style-type: none"> <li><u>Cash</u> flow-based, long-term, <u>non-recourse</u> financing with ring-fenced <u>portfolio</u> of assets</li> </ul> <div> <div> <div>~68% LTV</div> <div> <div>Series A</div> <ul style="list-style-type: none"> <li>"A"</li> <li>7yr (ARD) / 4.5~5.0yr WAL</li> <li>L+250-400bps</li> </ul> </div> </div> <div> <div>~77%</div> <div> <div>Series B</div> <ul style="list-style-type: none"> <li>"BBB"</li> <li>7yr (ARD) / 4.5~5.0yr WAL</li> <li>L+400-600bps</li> </ul> </div> </div> <div> <div>~82%</div> <div> <div>Series C</div> <ul style="list-style-type: none"> <li>"B"</li> <li>7yr (ARD) / 2.5~3.0yr WAL full payout</li> <li>7-10% yield</li> </ul> </div> </div> <div> <div>E-Note</div> <ul style="list-style-type: none"> <li>Equity (or other subordinate interests)</li> </ul> </div> </div>	<ul style="list-style-type: none"> <li>ECA-Guaranteed</li> <li>Pre-Delivery Payment (PDP)</li> <li>Acquisition Warehouses</li> <li>Non-US Dollar</li> <li>Term Loan B (Corporate)</li> <li>Secured Bond (Corporate)</li> <li>Unsecured (Corporate)</li> <li>Helicopter Financing</li> <li>Turboprop Financing</li> <li>Slots/Gates/Routes</li> </ul>

Source:  
Citi – Airfinance Journal  
North America School 2019

# Conclusions

- By 2023, the financing needed to support aircraft deliveries will be 3x the amount of financing needed a decade ago
- For airlines, banks and ECAs are financing smaller portions of aircraft deliveries, while capital markets financing continues to grow
- While the effects of Basel III/IV are yet to be known, more airlines and lessors are seeking public credit ratings to gain access to unsecured funds. Due to the perceived robustness of the aviation finance industry, we have seen a significant increase in the volumes of unsecured funding accessed.
- The face of the aviation finance industry is constantly evolving with new products such as AFICs supported financing emerging as viable sources of funding.
- Increased credibility and global presence of airlines and lessors have contributed to a resurgence in the JOLCO as Japanese investors look to avail of tax deferral investments.





# Q&A

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