



# BOC AVIATION ABS SEMINAR 2019

24 OCTOBER 2019

HONG KONG

25 YEARS  
OF EXCELLENCE

 **BOC AVIATION**

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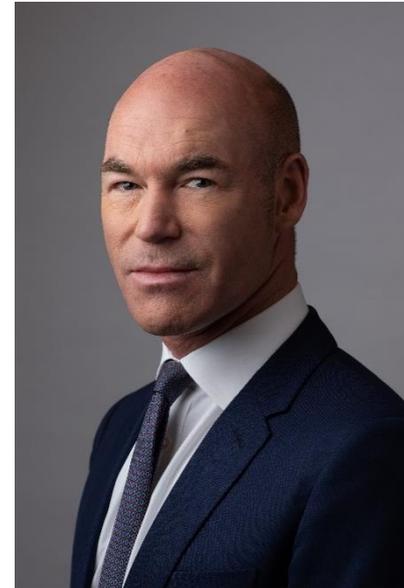
# 1. Welcome and Introduction

Timothy Ross  
Head of Investor Relations & Corporate  
Communications



Timothy Ross

Head of Investor Relations &  
Corporate Communications



- More than 25 years of investment banking and aviation-related experience
- In charge of Investor Relations and Corporate Communications
- In depth knowledge of capital markets and industry investment community



# Agenda

No.	Topic	Duration (minutes)	Presenter
1	Welcome and introduction	5	Timothy Ross
2	Aircraft ABS overview	45	David Walton
3	How an aircraft ABS works and how it fits into our sales plan	40	Andrew Taylor
Coffee		30	
4	Appraiser's perspective (Morten, Beyer & Agnew)	30	David Tokoph
5	Role and responsibilities of the Servicer	30	Guy Brooker
6	Investor engagement and final remarks	15	Timothy Ross



## 2. Aircraft ABS Overview

David Walton  
Chief Operating Officer



David Walton

Chief Operating Officer



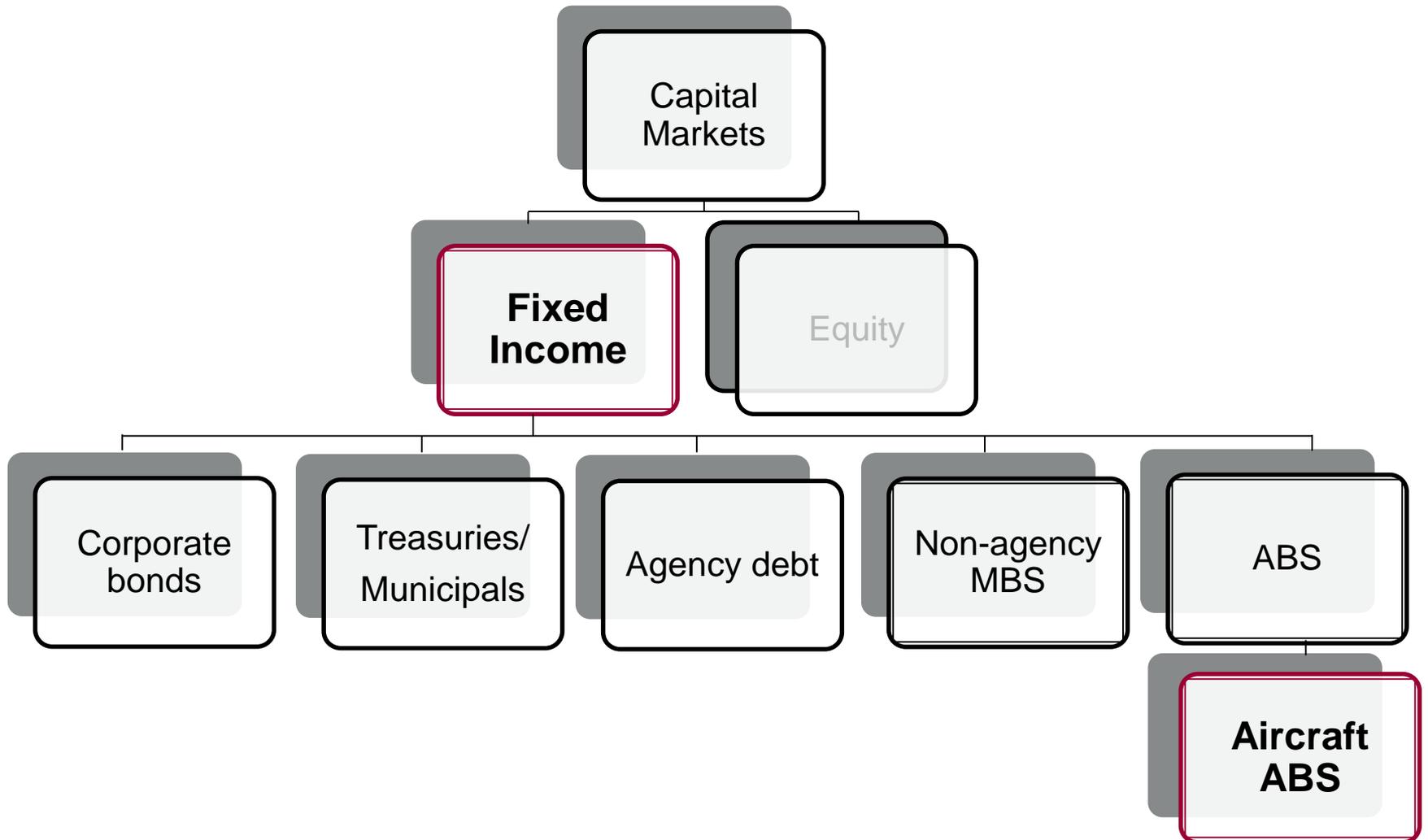
- In charge of operations, including legal, technical, portfolio management departments and information technology, investor relations, strategy and compliance departments
- Joined BOC Aviation in 2014
- 33 years of legal, aviation finance and leasing experience



# Aircraft ABS Background

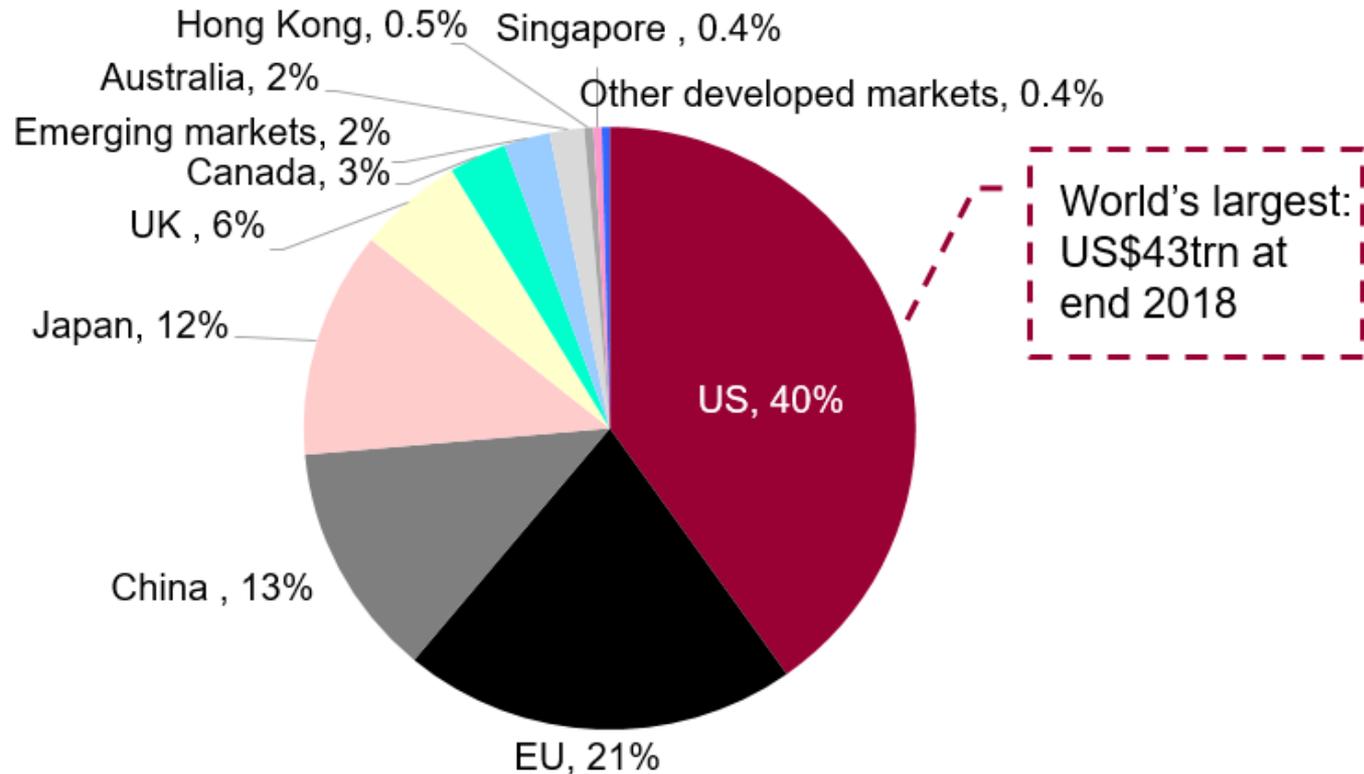


# Global Capital Markets



# The Fixed Income Space: In Excess of US\$100 trillion

- The U.S. fixed income markets are the largest in the world<sup>1,2</sup>
  - Around 40% of global fixed income markets
  - The deepest and most liquid



**More than US\$100 trillion of outstanding fixed income securities globally**

All data as at end-2018

Notes:

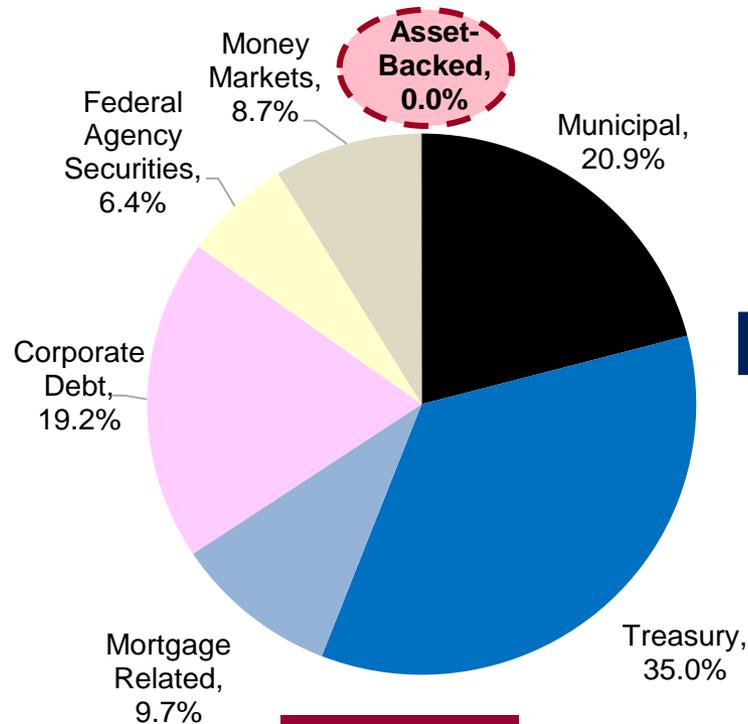
1. Represents outstanding value of fixed income securities issued by corporate and governments in the identified country/region
2. Sources: Bank of International Settlements, SIFMA Capital Markets Fact Book 2019



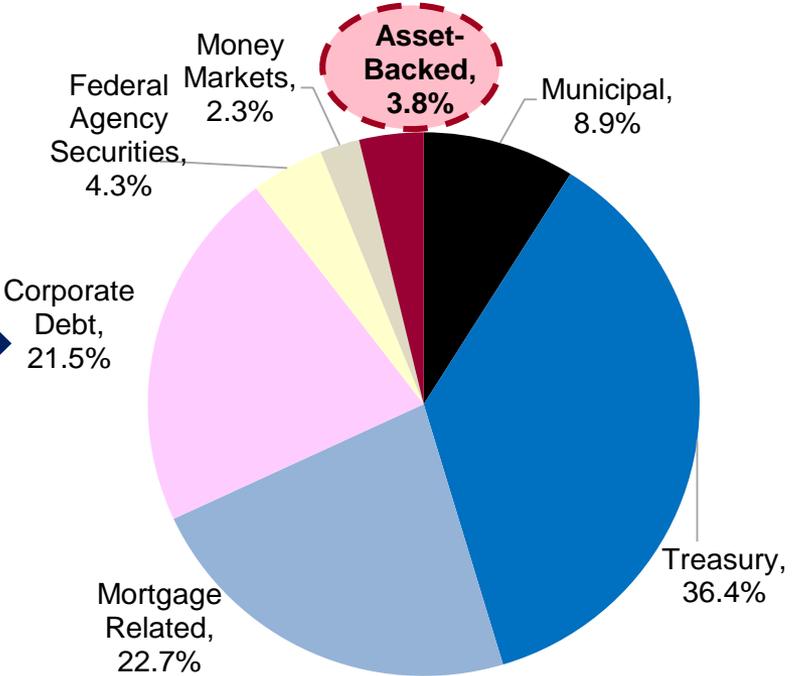
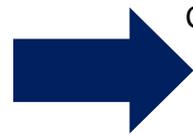
# ABS<sup>1,2</sup> – a Growing Part of a Rapidly Growing Market

1985

2018



US\$4trn



US\$43trn

## Breakdown and evolution of US debt market

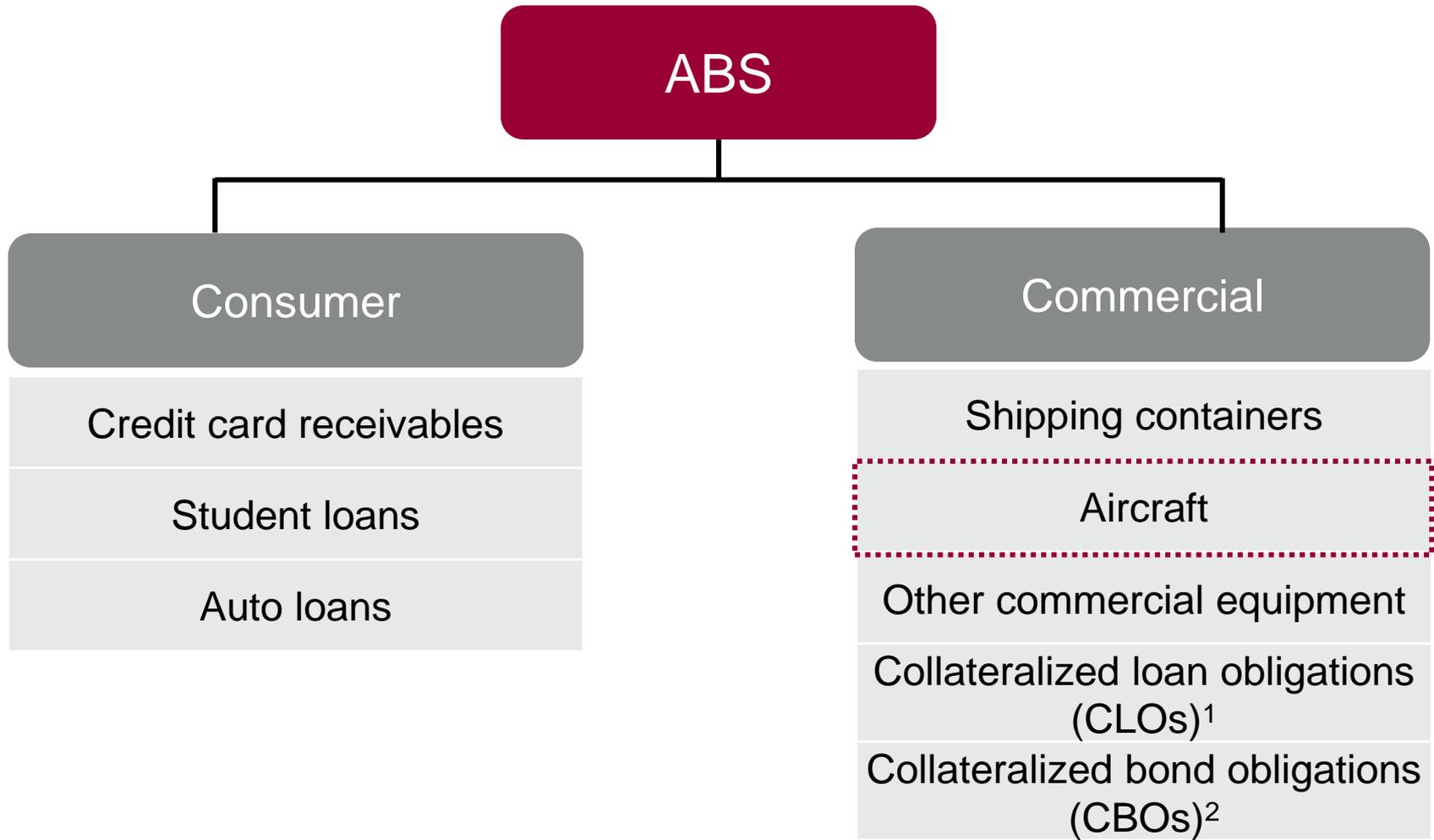
All data as at end of the relevant period

Notes:

1. Represents outstanding value of fixed income securities issued by corporate and government in the US
2. Source: SIFMA, outstanding US bond market debt



# Selected ABS Sectors



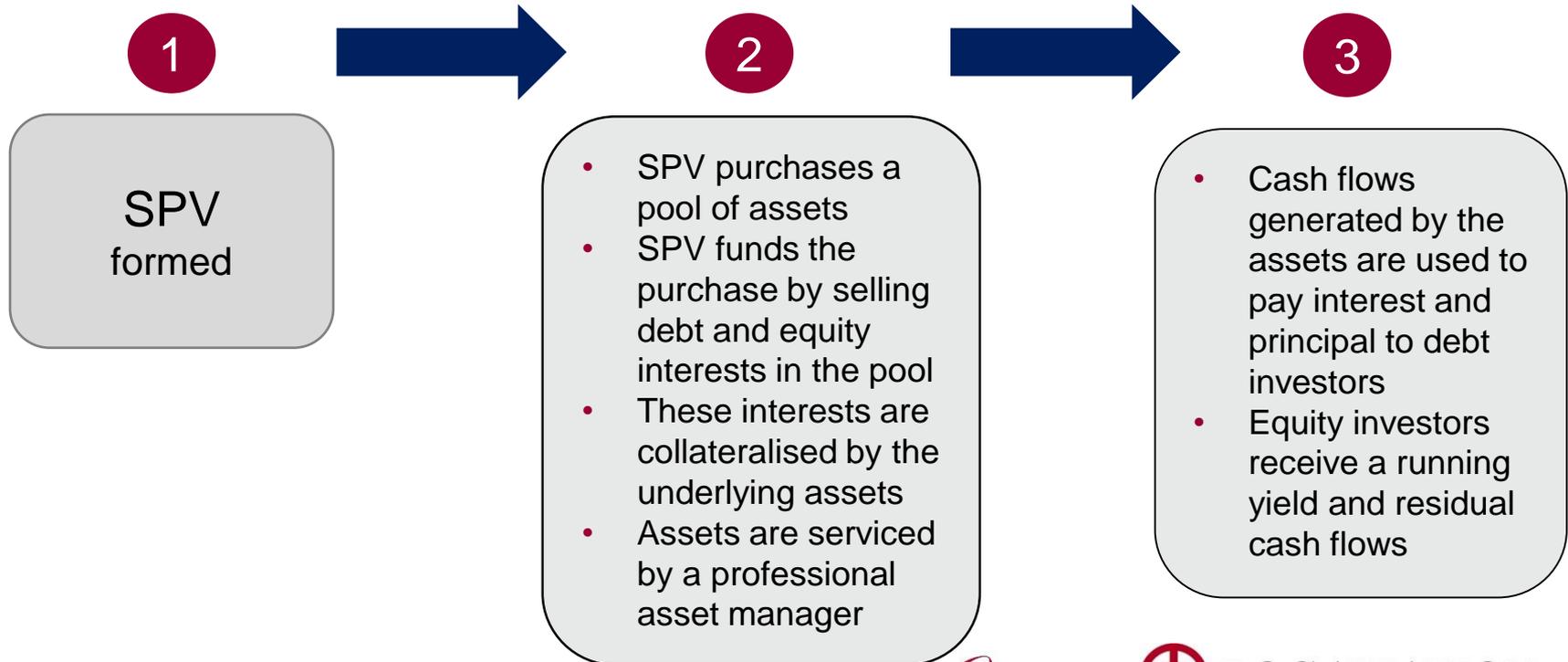
Notes:

1. Backed by corporate bank debt
2. Backed by high-yield bonds

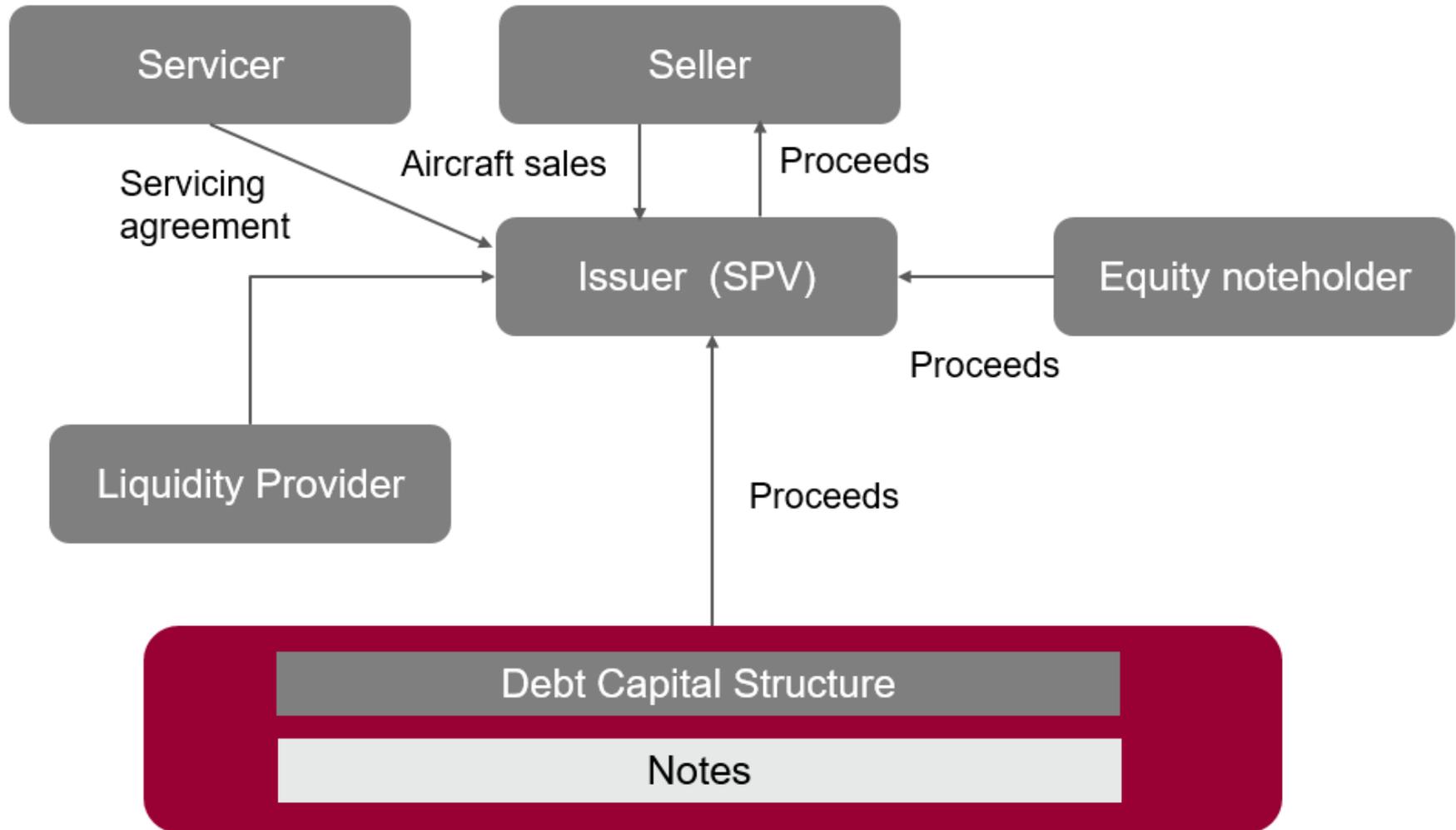


# ABS 101

- An asset-backed securitisation is a pooling of revenue-generating assets for the benefit of investors
  - Investors can purchase debt and/or equity interest
  - The issuer is a bankruptcy remote special purpose vehicle (“SPV”)
  - The assets are serviced by a professional asset manager
- Transaction structuring caters for ratings/return/risk appetite of investors
- Sponsor may access ABS market as part of a sales programme or to finance via debt capital markets
- How does it work?



# Typical ABS Transaction Structure



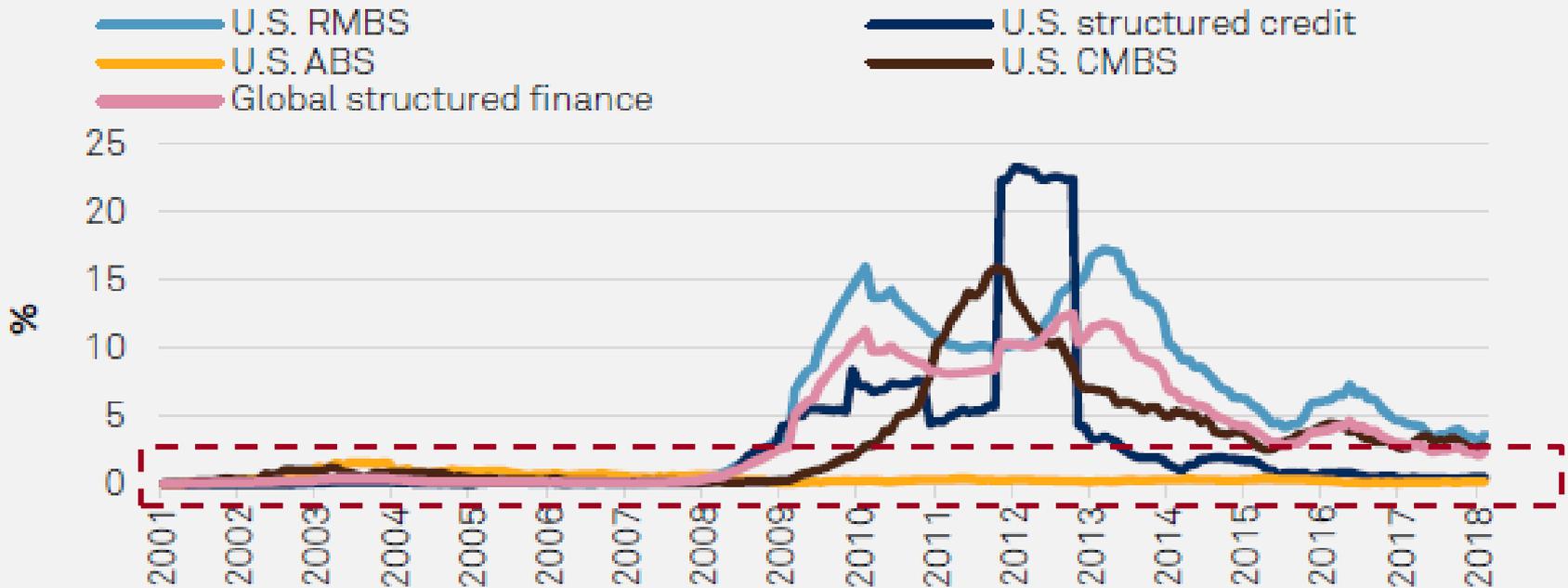
# Why ABS

Investor	Sponsor
<ul style="list-style-type: none"> <li>• Access to a diversified pool of assets within a specific asset class</li> </ul>	<ul style="list-style-type: none"> <li>• Diversifying funding sources and investor base</li> </ul>
<ul style="list-style-type: none"> <li>• Diversification can be achieved on multiple levels: underlying obligors, asset types, lease term, jurisdictions reduces risk</li> </ul>	<ul style="list-style-type: none"> <li>• Alternative sales channel for asset dispositions</li> </ul>
<ul style="list-style-type: none"> <li>• Tranching of ratings, risk and amortization allows investors to find the risk/reward in the capital stack which is right for them</li> </ul>	<ul style="list-style-type: none"> <li>• Potential for programmatic issuance with standardized structures and documents</li> </ul>
<ul style="list-style-type: none"> <li>• Triggers – like debt service coverage ratio (“DSCR”) and anticipated repayment date (“ARD”) provide support for investment case for the debt investor</li> </ul>	<ul style="list-style-type: none"> <li>• Servicing arrangements enable sponsor to retain customer relationships and enhance relevance to obligors</li> </ul>
<ul style="list-style-type: none"> <li>• Bankruptcy remote structure</li> </ul>	
<ul style="list-style-type: none"> <li>• Professional servicing, asset management and reporting, with SPV Board providing oversight</li> </ul>	



# ABS Historical Performance is Strong

## 12-Month Trailing Default Rates



**ABS default rates are the lowest in the structured finance space even during the GFC**

Source: S&P Global Ratings: When The Cycle Turns: How Would Global Structured Finance Fare In A Downturn? (4 Sep 2019)



# Aircraft ABS Evolution – Tradeable Equity

## THEN: M&A style portfolio sale

### Timeline/ Process for Initial Structuring and Closing

- Six to twelve month process
- Large ticket sizes limit investor participation
- Detailed due diligence from all bidders required
- Illiquid investment

### Secondary sales of equity investments

- Secondary sales of equity require another M&A style processes
- Transaction costs are relatively high
- Again, ticket size limits market

## TODAY: 144A tradeable equity product

- Structured as a syndicated equity product
- Anchor investor identified prior to launch – with the anchor investor performing deeper due diligence and agreeing to a lock up period
- Anchor investor has an active role
- Timeline shortened to 10-14 weeks

- Syndicated equity trades like a bond
- Increased liquidity appeals to a broader investor base
- Smaller passive investors
- Enhanced transparency and reporting



Greater liquidity and disclosure, and expanding market for investors



# Tradeable E-Note Structure Expands the Investor Base

## Growing market acceptance for 144A tradeable equity

- Ten tradable e-note transactions since 2018
- Total equity investment of more than \$1bn to date

## Market continues to evolve and improve

- Standardized set of assumptions
- Reporting and transparency improving

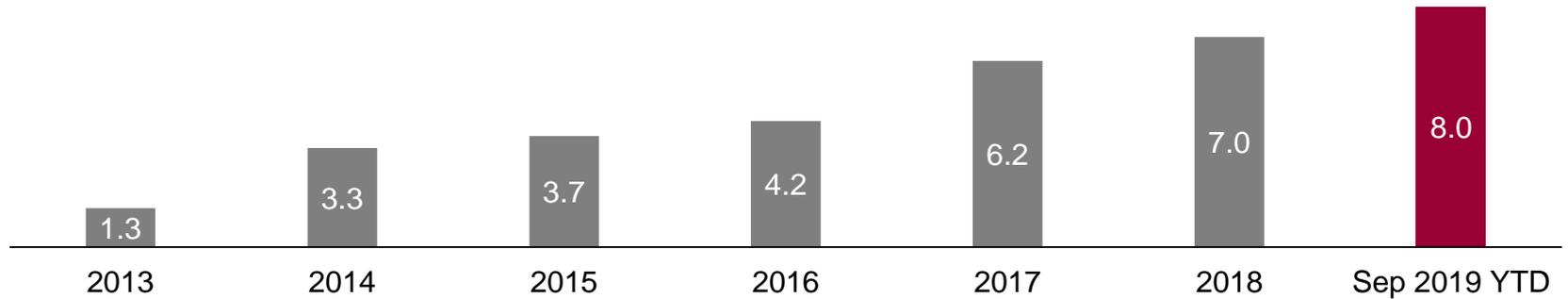
## Growing equity investor base

- Investor base now more than 35 distinct accounts
- Significant improvement in aviation ABS market liquidity over the last 12 months
- Trading volume in equity notes rose 250% year on year to US\$1.5bn in 2018

# Aircraft ABS Market Volumes Build

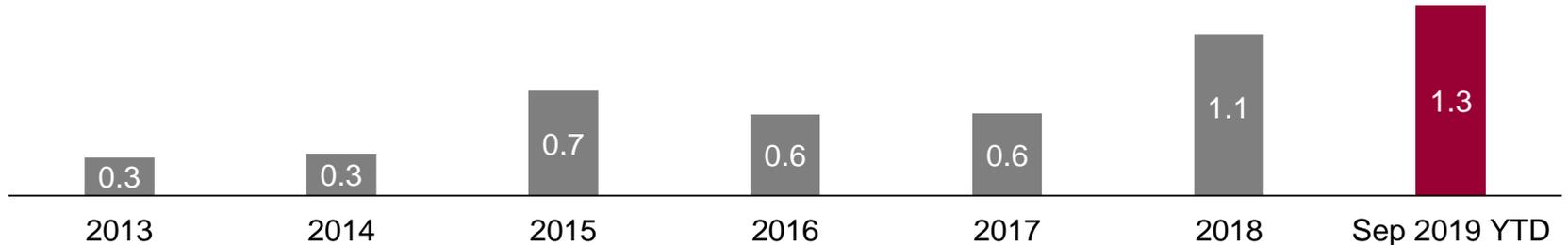
## Post-crisis Aircraft ABS debt issuance volume

US\$ billion



## Post-crisis Aircraft ABS equity issuance volume

US\$ billion

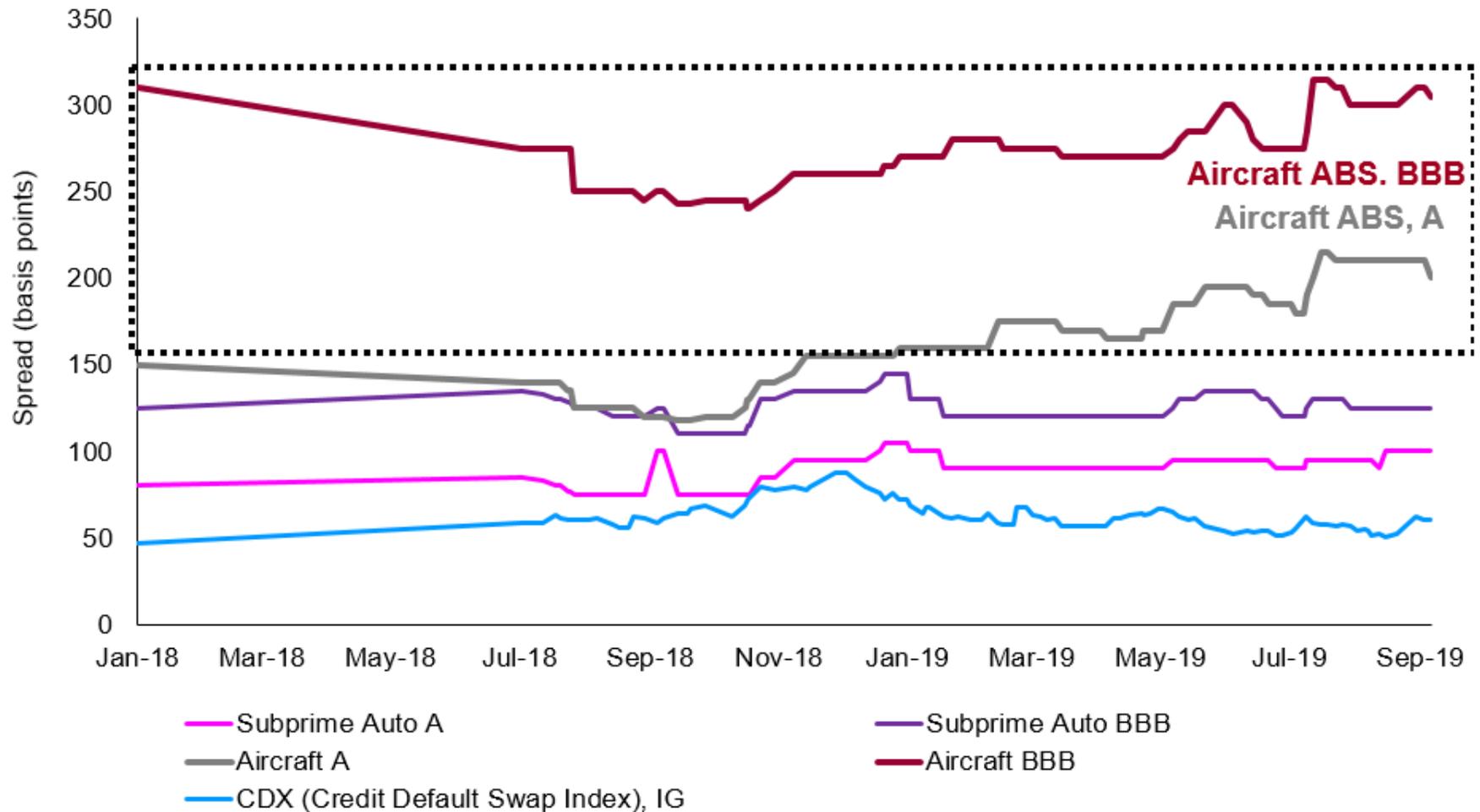


**2019 on track to be another record year for the Aircraft ABS market**

Source: Deutsche Bank, Aircraft ABS Market Considerations (18 September 2019); MBS and Securitized Products (26 June 2019)



# Aircraft ABS is Attractive to Debt Investors



**The aircraft ABS sector offers higher spreads to debt investors**

Source: Morgan Stanley (ABS Month End Commentary, September 2019)



# Why Aircraft ABS Collateral is so Attractive

- Mobile equipment
- Global market for leased aircraft
- Generally stable residual values, active secondary market
- Operating lessor is like a senior, unsecured creditor
- Security deposit, rent paid in advance
- Airline due diligence
- Jurisdictional due diligence / Cape Town Convention

**Collateral is attractive, and the skill and experience of the servicer is a key differentiating factor**



# Partnering with BOC Aviation



# BOC Aviation – Who Are We?

- One of the world's top five aircraft lessors
  - The largest in Asia
  - Bank of China owns 70%
- Listed on the HKEX
  - Four Independent Non-Executive Directors
- Total assets of US\$19.2 billion as at end-June 2019
  - 509 aircraft<sup>1</sup>
- Consistent profitable performance over more than 25 years
  - US\$4 billion in cumulative NPAT generated since 1993
- Leading industry metrics
  - Young fleet age of 3.1 years<sup>2</sup>
  - Long average lease term of 8.3 years<sup>2</sup>
  - Low cost of funds
  - Average ROE of 15% over the last 12 years
  - Investment grade credit ratings of A- from S&P Global Ratings and Fitch Ratings
- Strong aircraft lease servicing track record
  - Serviced more than 100 leases of managed aircraft in the last 25 years

**An established lessor with deep management experience**

All data as at 30 September 2019 unless otherwise indicated

Notes:

1. Includes owned, managed and aircraft on order
2. Weighted by net book value of owned fleet as at 30 September 2019



# Experienced Global Management Team



	<b>Robert Martin</b>	<b>Wang Jian</b>	<b>Phang Thim Fatt</b>	<b>Steven Townend</b>	<b>Gao Jinyue</b>	<b>David Walton</b>
	<b>Managing Director &amp; Chief Executive Officer</b>	<b>Vice-Chairman &amp; Deputy Managing Director</b>	<b>Deputy Managing Director &amp; Chief Financial Officer</b>	<b>Chief Commercial Officer (Europe, Americas, Africa)</b>	<b>Chief Commercial Officer (Asia Pacific &amp; the Middle East)</b>	<b>Chief Operating Officer</b>
	<ul style="list-style-type: none"> <li>32 years of banking and leasing experience</li> <li>Managing Director since July 1998</li> </ul>	<ul style="list-style-type: none"> <li>37 years experience at BOC</li> <li>Formerly a Non-executive Director of the Company from December 2006 to June 2012</li> <li>Re-appointed on 1 June 2017 as Executive Director</li> </ul>	<ul style="list-style-type: none"> <li>40 years of airline and leasing experience</li> <li>Involved in establishment of the Company</li> <li>Previously held treasury and finance roles at Singapore Airlines</li> </ul>	<ul style="list-style-type: none"> <li>More than 28 years of banking and leasing experience</li> <li>In charge of revenue activities for Europe, Americas and Africa</li> </ul>	<ul style="list-style-type: none"> <li>33 years of treasury, corporate finance and leasing experience</li> <li>In charge of revenue activities for Asia Pacific and Middle East</li> </ul>	<ul style="list-style-type: none"> <li>33 years of legal, aviation finance and leasing experience</li> <li>In charge of all operations and related departments</li> <li>Joined BOC Aviation in 2014</li> </ul>
<b>Nationality</b>						
<b>Years with BOC Aviation</b>	<b>21</b>	<b>8</b>	<b>23</b>	<b>18</b>	<b>12</b>	<b>4</b>

**Stable and highly experienced senior management team that has successfully led the Company through multiple cycles**

All data as at September 2019



# Core Competencies - BOC Aviation Track Record

## Since inception in 1993:

• Purchasing	More than 820 aircraft purchased totalling more than US\$45 billion
• Leasing	More than 910 leases executed with > 160 airlines in 57 countries and regions
• Financing <sup>1</sup>	More than US\$26 billion in debt raised since 1 January 2007
• Sales	More than 350 aircraft sold
• Transitions	More than 90 transitions
• Repossessions <sup>2</sup>	46 aircraft in 14 jurisdictions
• Fleet utilization <sup>3,4</sup>	Average 99.8%
• Cashflow collection <sup>5</sup>	Average 99.5%

**US\$4 billion<sup>1</sup> in cumulative net profit after tax generated since inception**

All data as at 30 September 2019, since inception unless otherwise indicated

Notes:

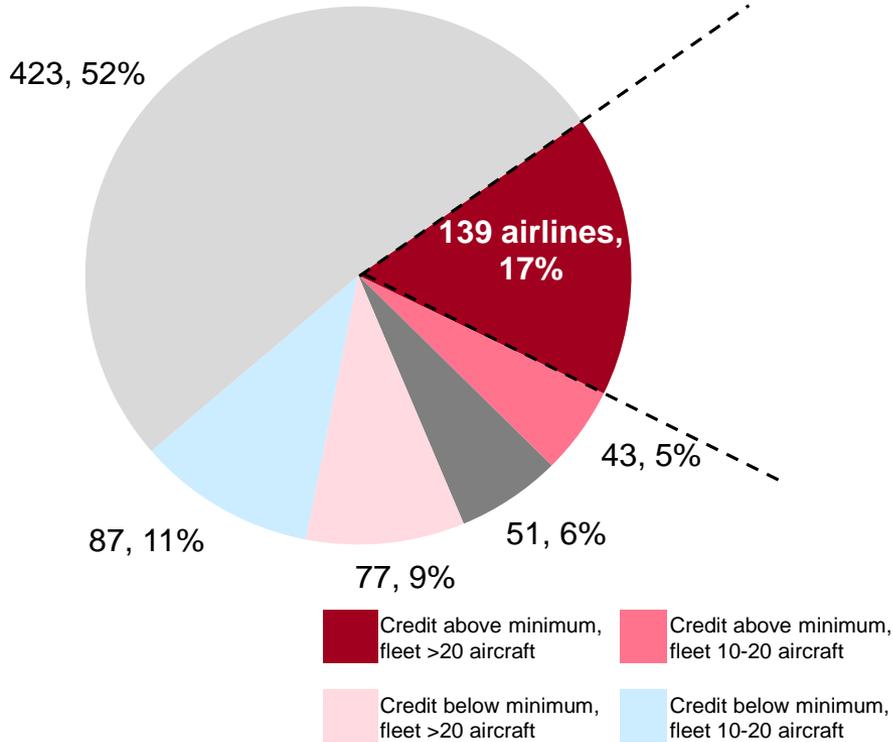
1. As at 30 June 2019
2. Includes repossessions and consensual early returns
3. Fleet utilization is the total days on-lease in the period as a percentage of total available lease days in the period
4. Average value from 1 January 2008 to 30 September 2019
5. Average value from 1 January 2008 to 30 June 2019



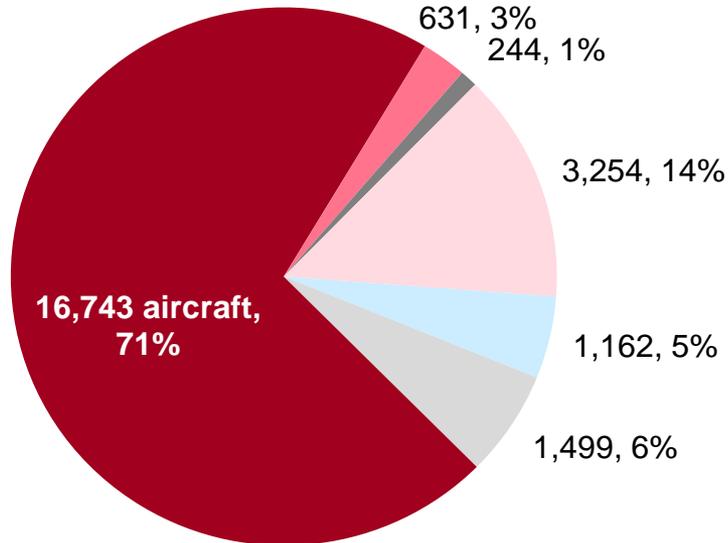
# Customer Quality Focus

- 820 airlines in service today
- Focus on 139 airlines or only 17% of the airlines in the market – minimum credit score, above 20 aircraft

**Airline segmentation by credit score and fleet size**



**Our target 139 airlines operate 71% of the current in-service aircraft**

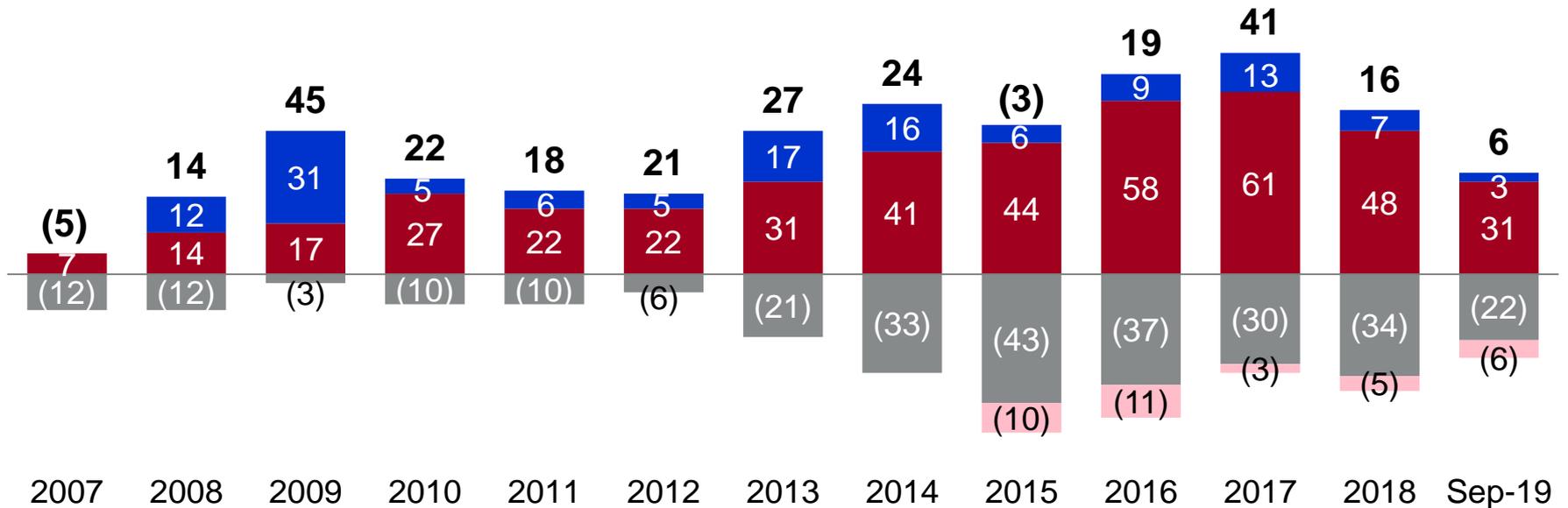


Source: Ascend, as at 30 September 2019  
Only commercial aircraft with 100 seats and above



# How Our Owned Fleet Evolves

## Number of aircraft delivered, purchased and sold



■ From orderbook ■ From PLB ■ Owned aircraft sold ■ Acquired by airline lessee at delivery

**We are a regular seller of Aircraft, making the ABS market an attractive alternative**

All data as the end of the relevant period



# 3. How An Aircraft ABS Works And How It Fits Into Our Sales Plan

Andrew Taylor  
Head of Aircraft Sales



# Andrew Taylor

## Head of Aircraft Sales



- Heads the Aircraft Sales team globally and is responsible for aircraft trading and maintaining relationship with aircraft investors
- Eight years with BOC Aviation and 12 years with Boullioun Aviation, one of BOC Aviation's founding shareholders
- 30 years of aviation experience including with an OEM and commercial banks

# Digging into the Aircraft ABS Structure

- The pool of cash flows securitised are the payments due under aircraft operating leases, i.e.
  - Rentals payable
  - Maintenance cash flows (monthly maintenance reserves or end-of-life (EOL) payments paid at the end of the lease (a.k.a. return compensation))
- It also includes:
  - Disposition proceeds through the sale of the aircraft
- Cash flows are allocated every month through the priority of payment, a.k.a. the “waterfall”

# Review of SLVRR 2019-1

- The portfolio sale by BOC Aviation to SLVRR priced in June 2019
- The pool of assets comprised 17 young to mid-life aircraft with leases attached
- Diverse range of lessees, aircraft and geographic location
- Issuing vehicle is an Irish tax resident Cayman Island trust
- The SPV and its subsidiaries bore the “Silver” name to recognize the company’s 25th anniversary
- SLVRR issued three classes of debt notes and one class of Equity notes
- The note issuances are collectively SLVRR 2019-1



# SLVRR 2019-1: Collateral Portfolio Overview

## Key portfolio statistics

Maintenance Adjusted Base Value<sup>1</sup> US\$653.8m

Number of Assets 17

Asset Mix 68% NB, 32% WB

Weighted Average Age<sup>2</sup> 6.0 Years

Weighted Average Remaining Lease Term<sup>2</sup> 5.4 years

Unique Lessees 14

Top 3 Lessees 43.4%

Flag Carriers 47.7%

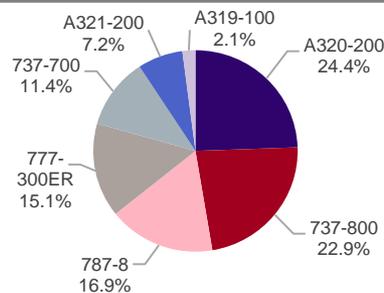
Maintenance Reserve Payers 47.3%

Top 3 Countries / Regions 52.7%

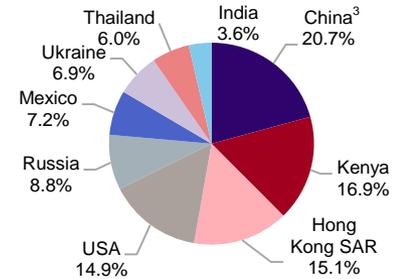
Weighted Average Lease Rate Factor<sup>4</sup> 1.0%

Developed Markets Exposure 30.0%

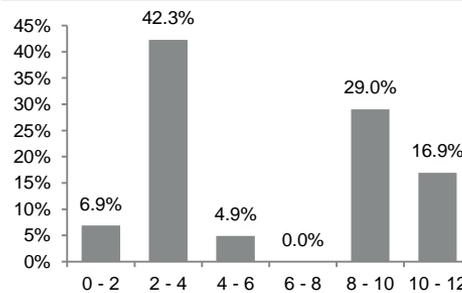
## Portfolio by aircraft type<sup>1</sup>



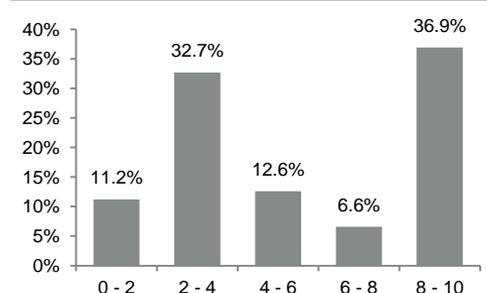
## Portfolio by Country / Region<sup>1</sup>



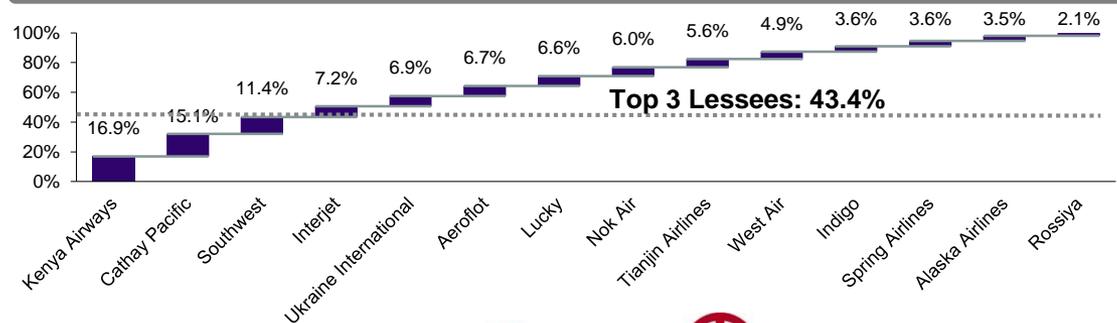
## Portfolio by age<sup>1,2</sup>



## Portfolio by RLT<sup>1,2</sup>



## Portfolio by Lessee<sup>1</sup>

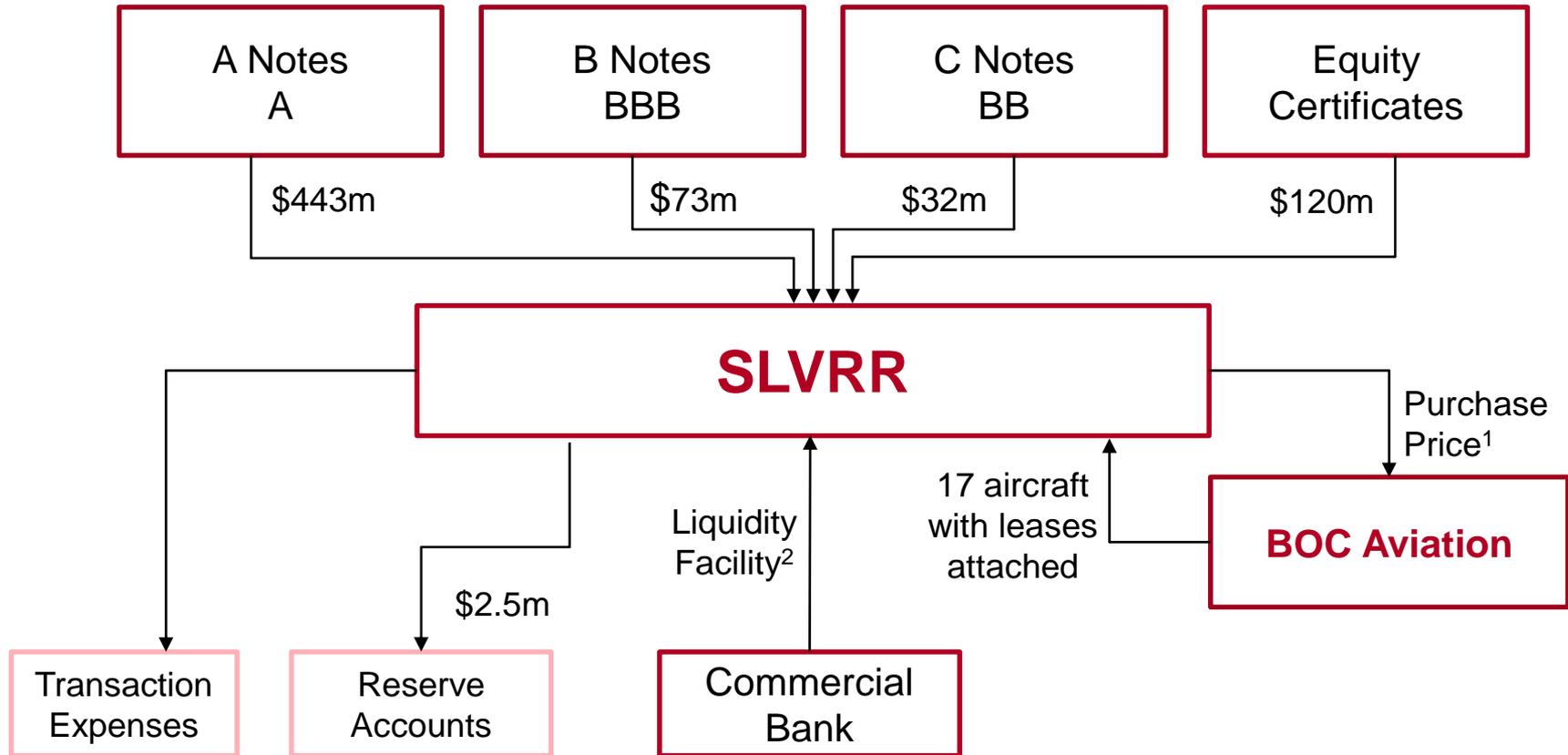


### Notes:

- Based on the average HLBV as provided by CV, mba and IBA (as of 31 March 2019), including a maintenance adjustment as provided by Alton (as of June 2019, except for MSN 36639 for which the maintenance adjustment is as of August 2019 to account for an engine shop visit in June)
- Reference date of 30 April 2019
- Excludes Hong Kong SAR; includes China Mainland, Macau SAR and Taiwan
- WA Lease Rate Factor calculated as the weighted average of each asset's current lease rate, divided by their individual mt. adjusted base value



# SLVRR 2019-1 Structure Diagram

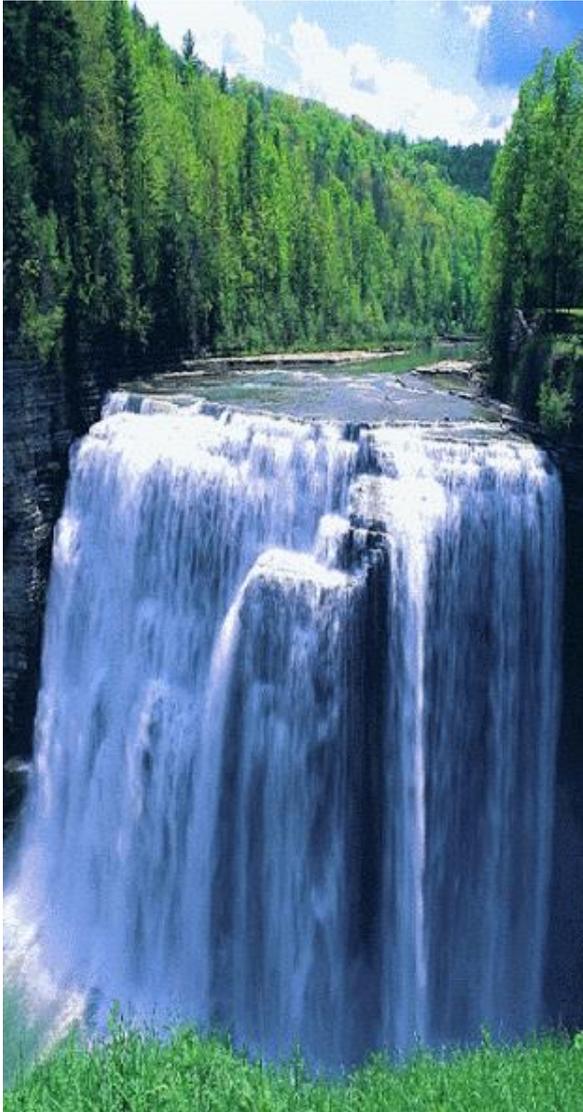


Notes:

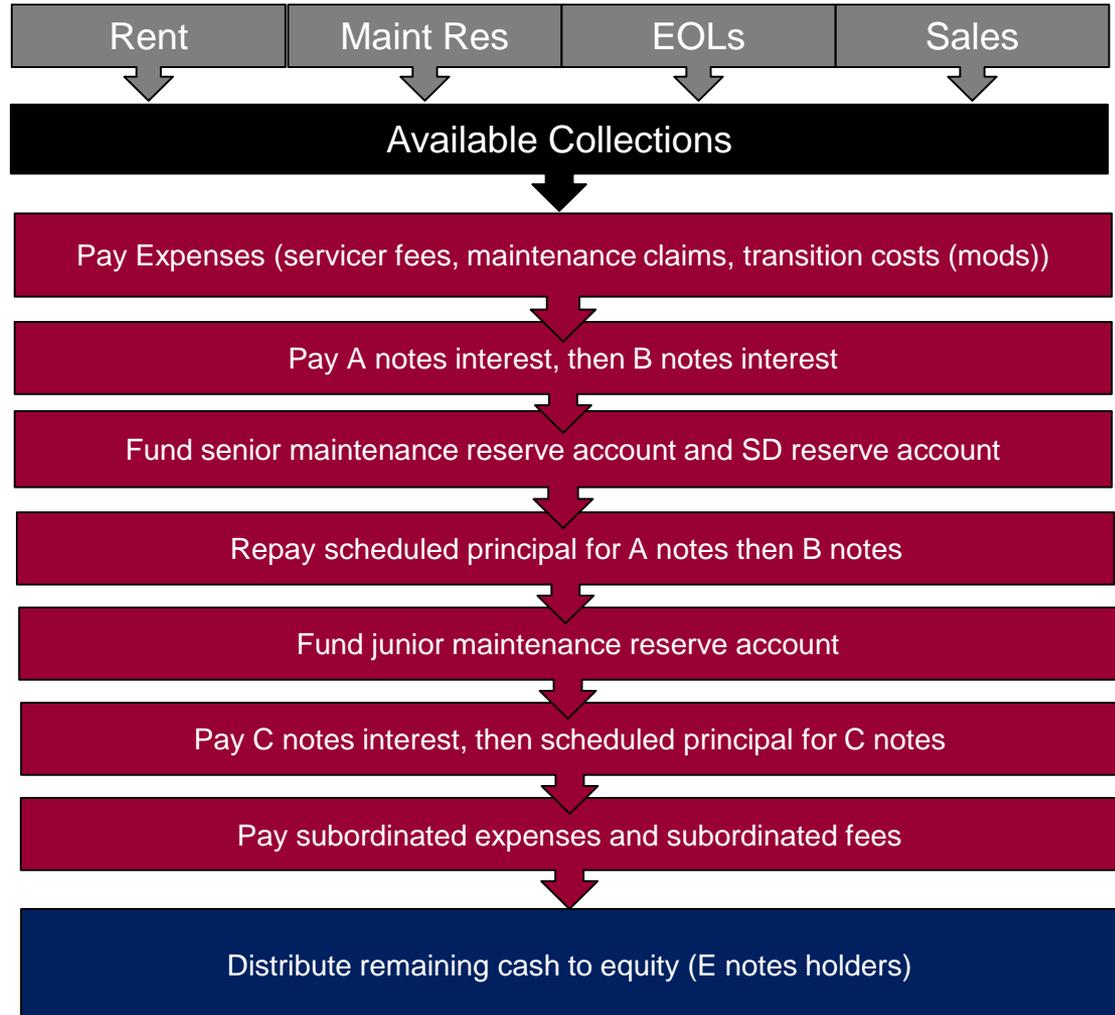
1. Disbursed proportionally upon novation of each aircraft
2. Provides credit enhancement for A and B notes



# The Waterfall<sup>1</sup>



Every month, the ABS issuer receives cash generated by the underlying aircraft and distributes it through the waterfall



Note:

1. Includes only the major steps from the waterfall. For exact details on priority of payments, please refer to the offering circular

# SLVRR 2019-1 Debt Capital Structure

SLVRR 2019-1 Debt Profile			
	<u>Series A</u>	<u>Series B</u>	<u>Series C</u>
<b>LTV<sup>1</sup></b>	67.8%	78.9%	83.8%
<b>Size (US\$'m)</b>	443.0	\$73.0	\$32.0
<b>Ratings (Fitch / Kroll)</b>	'A / A'	'BBB / BBB'	'BB / BB'
<b>Yield</b>	4.000%	5.000%	7.000%
<b>Weighted average life</b>	4.9 years	4.9 years	3.4 years
<b>Amortization Format</b>	13-year straight line	13-year straight line	7-year straight line
<b>Expected Final Maturity ("ARD")</b>	7.0 years	7.0 years	7.0 years
<b>Legal Final Maturity</b>	2044	2044	2044

- US\$548m total debt proceeds
- Around 25 unique debt orders received including seven from Asia

Note:

1. Based on the average HLBV as provided by CV, mba and IBA (as of March 31, 2019), including a maintenance adjustment as provided by Alton (as of June 2019, except for MSN 36639 for which the maintenance adjustment is as of August 2019 to account for an engine shop visit in June)



# SLVRR 2019-1 E-Notes

- The ABS product was initially developed as a debt instrument
- New structures now allow for the issuance of equity notes
- SLVRR 2019-1: “tradeable” E-Note structure with an anchor investor

SLVRR 2019-1 144A E-Notes	
<b>Total Equity Raised</b>	\$120.0m
<b>Passive E-Certificate IRR</b>	19.25%
<b>Anchor Investor Acquisition %</b>	35% of the Equity Certificates
<b>Anchor Investor IRR</b>	21.25%
<b>Anchor Investor Discount</b>	2.0% IRR discount
<b>Anchor Investor</b>	Oak Hill Advisors
<b>Seller / Servicer Equity Retention</b>	No Equity Retention; used Promote Structure (20% of cash flows exceeding 12% return)
<b>No. of Passive E-Notes Holders</b>	8, of which 3 from Asia



# SLVRR 2019-1 Investment Highlights<sup>1</sup>

20

**% cash-on-cash  
yield on passive E-  
Notes<sup>2</sup>**

49

**% Loan to value (LTV)  
at assumed  
redemption date (ARD)**

Rapid deleveraging (13-  
year straight line for As  
and Bs, 7-year for Cs)

71

**% of contracted  
cash flows (vs.  
offering size)**

37% of leases expire  
post ARD

Notes:

1. FOR INFORMATION ONLY AND NOT PROVIDED AS A SOLICITATION TO PURCHASE ANY OUTSTANDING SECURITIES IN SLVRR 2019-1
2. Based on the assumptions utilized to prepare the base case in the Debt and Equity Offering Memorandums. See "Note Payment Assumptions" in the Debt Offering Memorandum and "Payment Assumptions" in the Equity Offering Memorandum

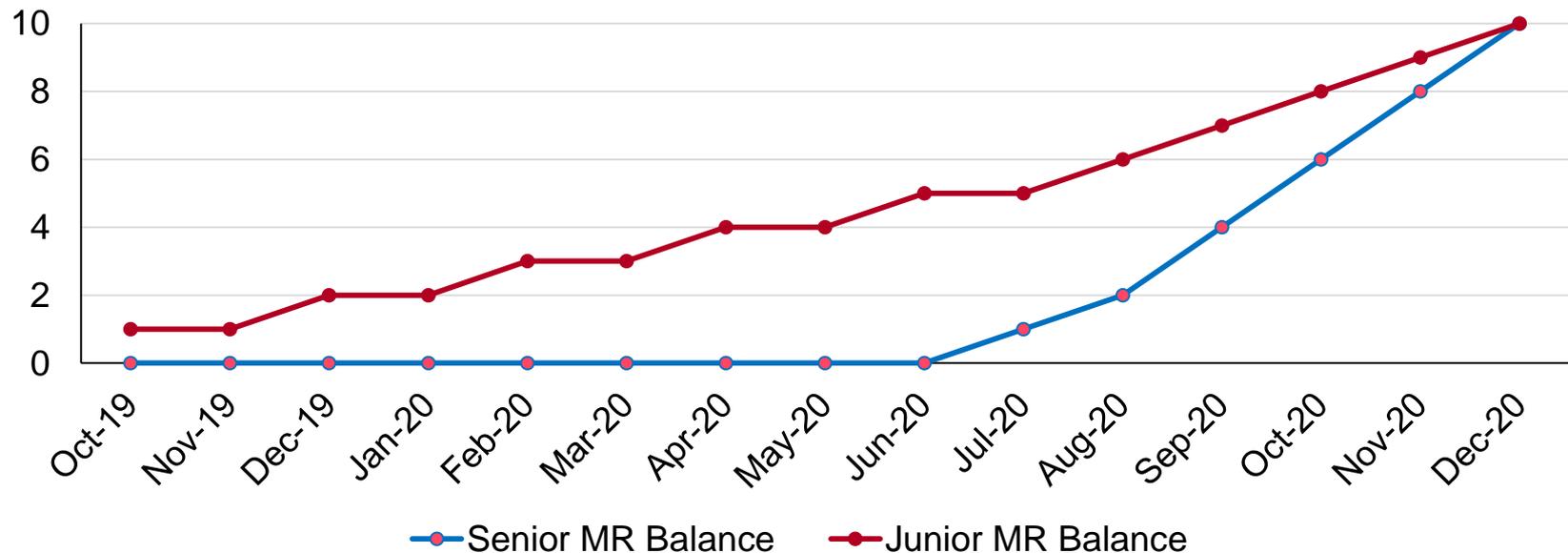


# Maintenance Cash Flows - What Are They?

- Lessees either pay monthly maintenance reserves or return compensation at end of lease (“EOL”) to compensate for their utilization of the aircraft
- Lessor has to fund drawings of maintenance reserves to reimburse cost of performing major maintenance
- Two-way adjustments: The lessor could also have to make EOL payments to lessee if the aircraft is returned in better maintenance condition than originally delivered (or than originally expected at delivery)
- Maintenance cash flows prepared by third party specialist
- ABS vehicle has to ensure it has sufficient cash to meet these obligations

# How Does SLVRR Fund Maintenance Obligations?

- Maintenance expenses are funded by building up reserves through a up to 15-month look-forward<sup>1</sup>
- For example, if there is a \$10m MR drawdown expected on 1 January 2021, the chart below illustrates the amount of junior and/or senior maintenance reserves that would be required to be funded from 1 October 2019



Note:

1. 15-month look-forward for the first 24 months of the ABS, 12-month look-forward thereafter



# How ABS Fit Into Our Aircraft Sales Plan?

- BOC Aviation typically sells around 30 aircraft each year to:
  - Manage fleet age
  - Balance portfolio
- Broad strategic plan:
  - Sell roughly half of these aircraft into the traditional trade market (largely composed of smaller leasing companies/ mid-life leasing specialists)
  - Sell the other half in to the ABS market, on the SLVRR platform
- Planning to return to the ABS market in 2020



# Conclusion: Why BOC Aviation is Back to the ABS Market?

- The SLVRR platform allows us to:
  - Use the ABS market as an alternative sales channel
  - Execute using a well tested structure
  - Limit our exposure to capital markets risk - 10 weeks to pricing after investment bank selection
  - Leverage on our servicing capability and grow our portfolio of managed aircraft
  - Broaden our footprint in the global capital markets (cross over investors) and in particular in Asia



# 4. Appraiser's Perspective

David Tokoph  
CEO, Morten, Beyer & Agnew  
(External Speaker)

# Topics

- **Company Overview**
- The Global Narrowbody Fleet and Valuation
- Market Development

# mba is a Full Service Aviation Consulting Firm



## Consulting & Advisory

*Plan strategically for growth & sustainability*

- Investor Due Diligence
- Business Plan
  - Lessor Strategy
  - Merger & Acquisition Support

- Market Research & Benchmarking
- Industry Reports
  - Fleet Planning
  - Trend Analysis
  - Feasibility Studies
  - Route Development

- Financial Analysis
- Cash Flows
  - Maintenance Forecasting

Expert Witness



## Valuation Solutions

*Establish an accurate value from a trusted independent source*

- Tangible Assets
- Aircraft
  - Engines
  - Spare Parts
  - Ground Service Equipment

- Intangible Assets
- Landing & Departure Slots
  - International Routes
  - Enterprise
  - Frequent Flyer Programs



## Data & Analytics

*Gain competitive advantage through key industry data*

- Aviation Intelligence Platform
- REDBOOK Aircraft & Engine Values
  - STAR Fleet Database
  - Market & Trend Data
  - Portfolio Monitoring
  - Aircraft Ranking

- Airline Credit Risk Assessment
- Financial
  - Market
  - Operations



## Aircraft Management & Technical Services

*Maximize an asset's potential and manage downside potential*

- Asset Management
- Returns & Deliveries
  - Lease Monitoring
  - Repossession Logistics

- Portfolio Acquisition
- Lease Reviews
  - Negotiations
  - Technical Due Diligence

- Aircraft Inspections
- Physical Inspection
  - Technical Records



## Safety & Compliance

*Analyze operational risks and mitigate them*

- Safety Audits
- IATA
  - IOSA
  - ISAGO
  - ACSF
  - FSF
  - BARS

- Training Management
- Safety

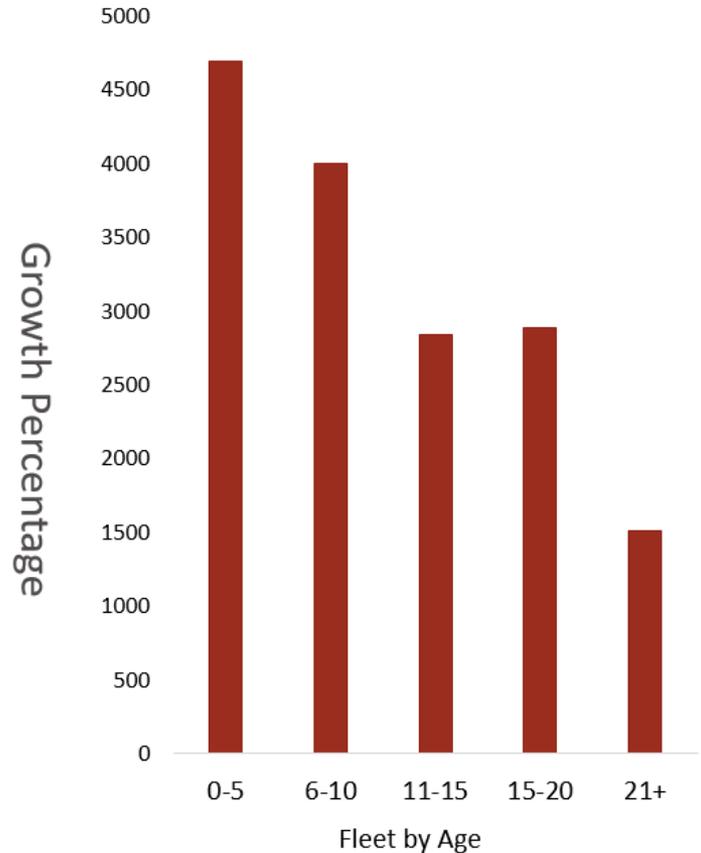
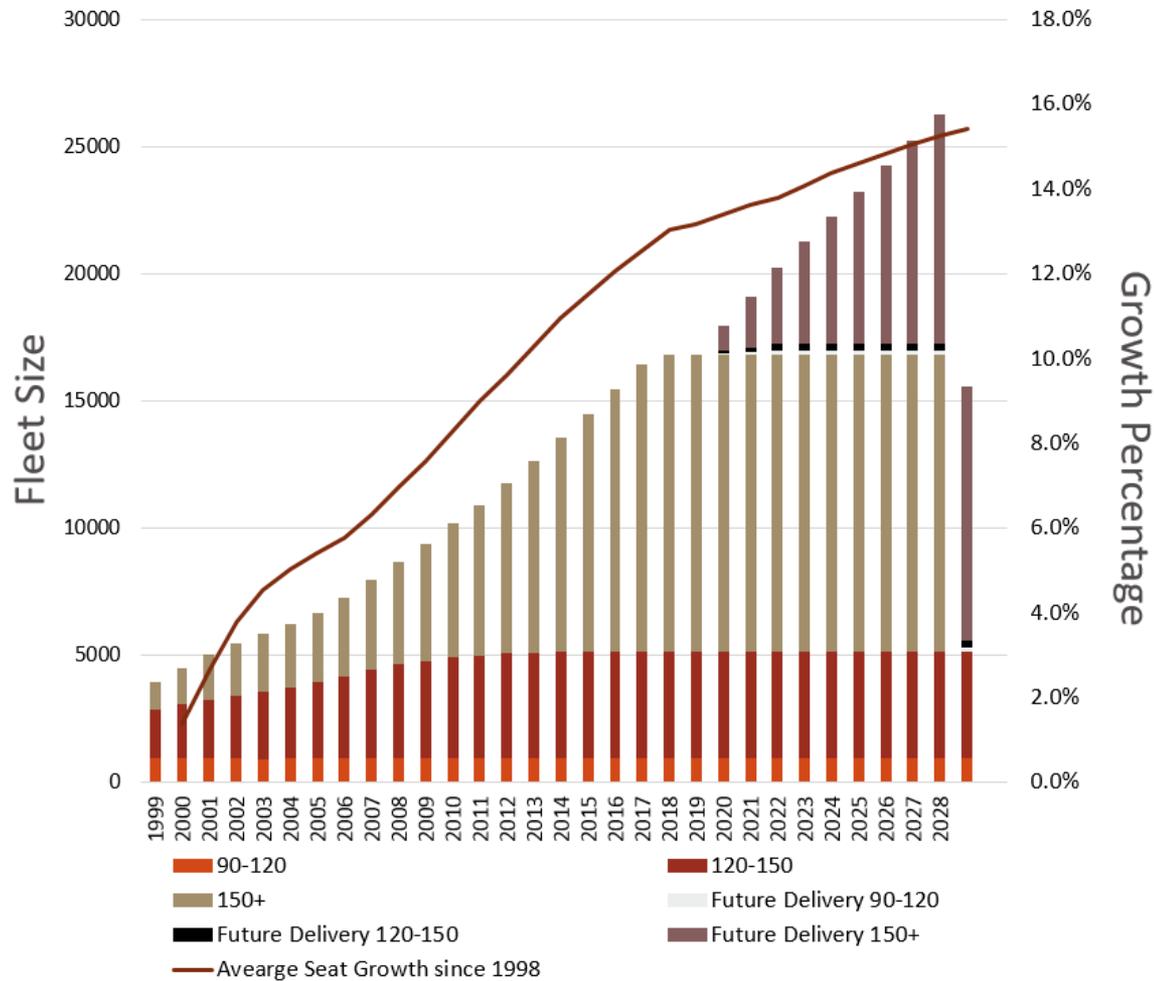
## Industry Credentials



# Topics

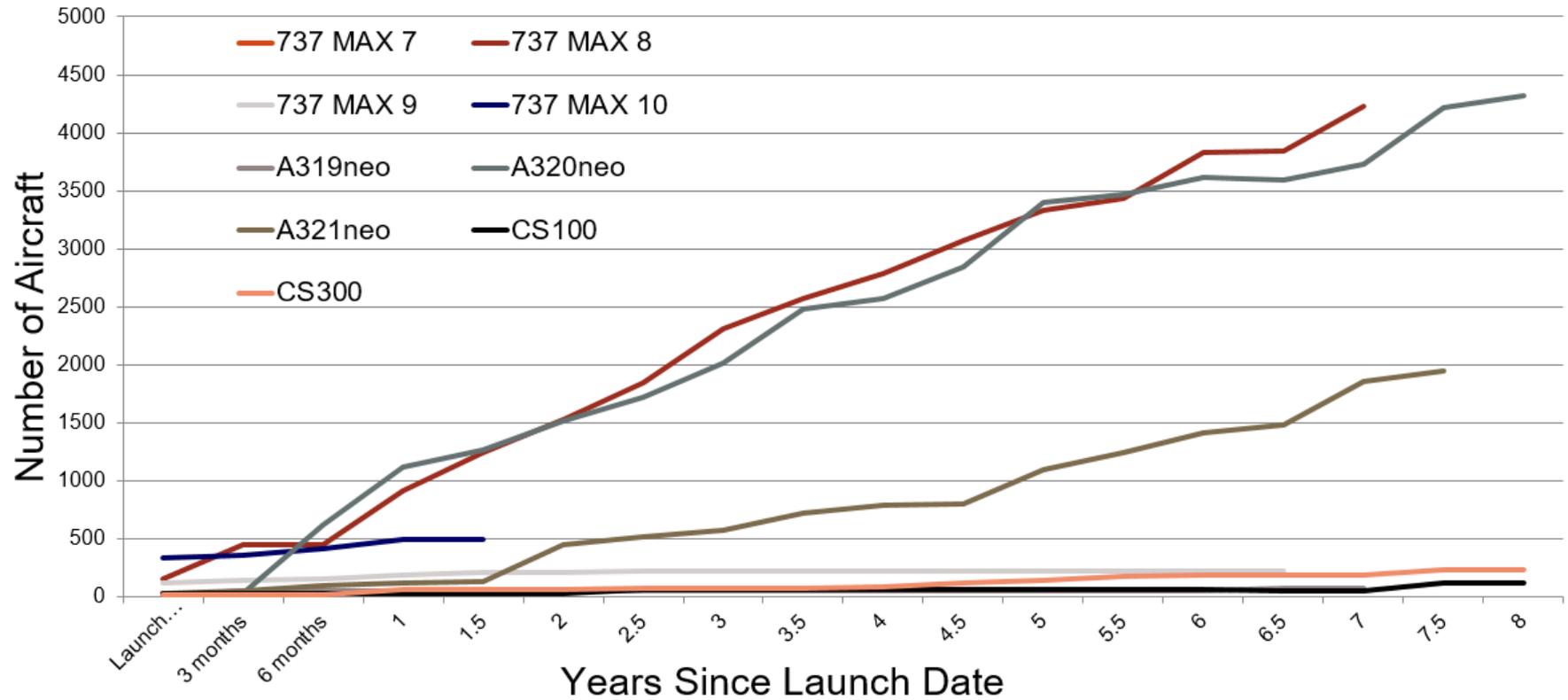
- Company Overview
- **The Global Narrowbody Fleet and Valuation**
- Market Development

# Narrowbody Fleet Size



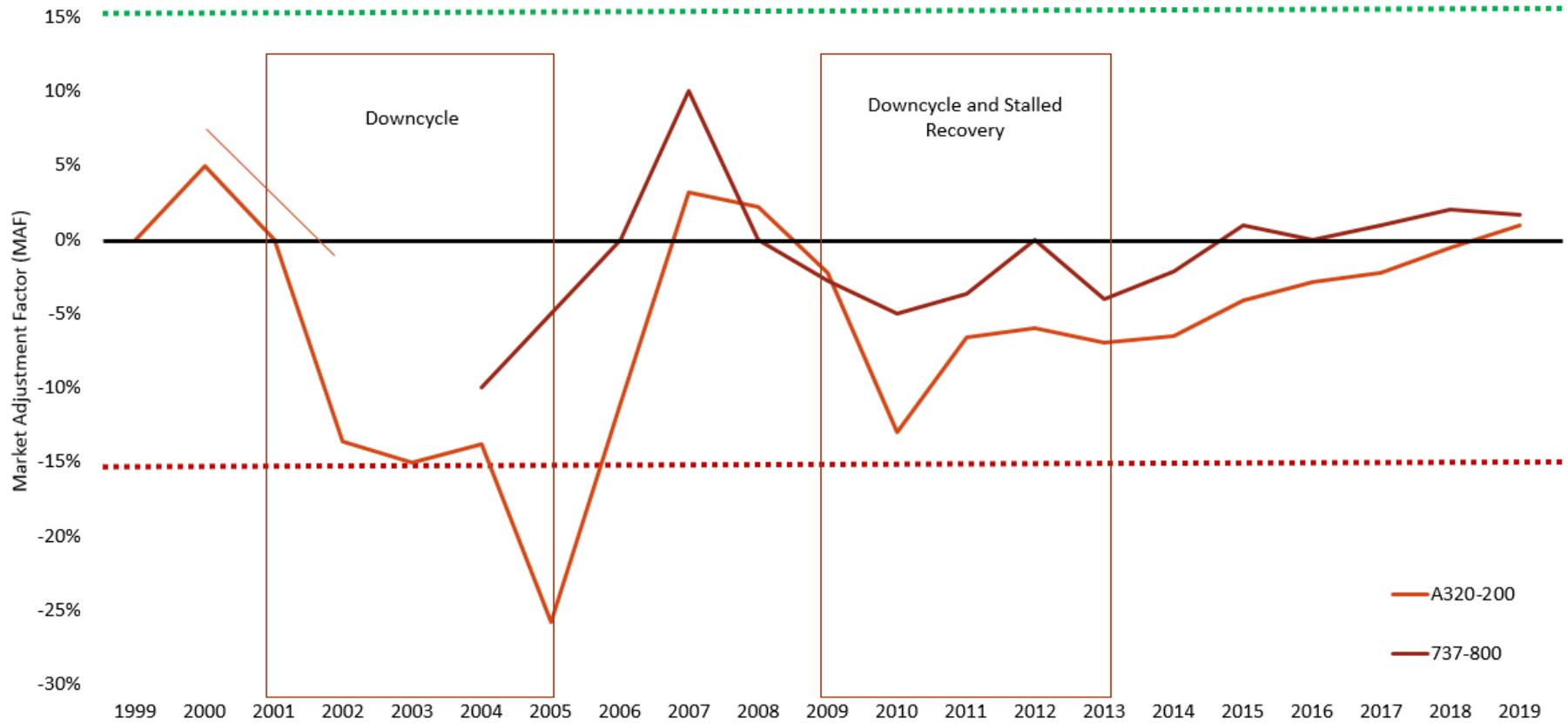
Source: mba STAR Fleet; Boeing; Airbus

# Narrowbody Order Growth



Source: mba Star Fleet; Airbus; Boeing; Bombardier

# Market Adjustment



# Maintenance Value – B737-700 [CFM56-7B22]

## Values in \$US Million

- Engine:  $\pm$  ESV 2.65 (1<sup>st</sup> Run) / LLP 2.90 (Total  $\pm$  5.55)
- Gear:  $\pm$  Nose 0.04 / Main 0.17 (Total  $\pm$  0.22)
- Intermediate Check:  $\pm$  0.16
- Heavy Check:  $\pm$  0.63

## Values in \$US Million

Year of Build	Market Value [Half-Time]	Total MX Effect	High	Low
2010	\$23.33	$\pm$ \$6.54	\$29.87	\$16.79

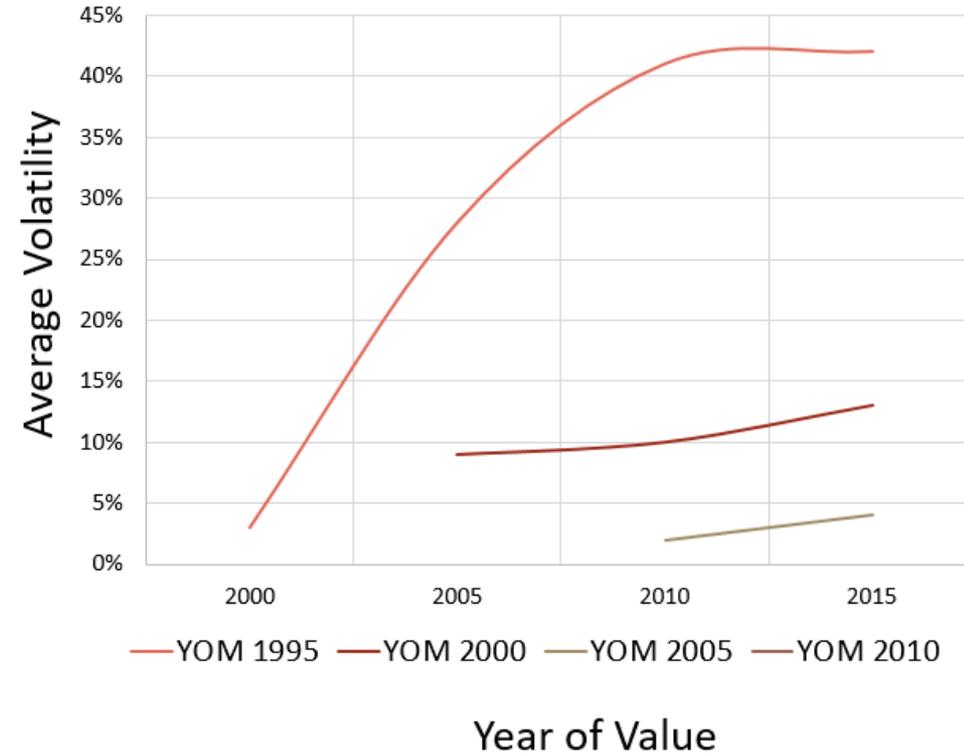
# Aircraft Value vs. Lease Value



# Volatility Study - Narrowbody

Aircraft	Year of Manufacture			
	1995	2000	2005	2010
A318			✓	
A319	✓	✓	✓	✓
A320-200	✓	✓	✓	✓
A321-100	✓	✓		
A321-200		✓	✓	✓
737-300	✓			
737-400	✓			
737-500	✓			
737-600		✓	✓	
737-700		✓	✓	✓
737-800		✓	✓	✓
737-900			✓	
737-900ER				✓
757-200	✓	✓	✓	
757-300		✓		

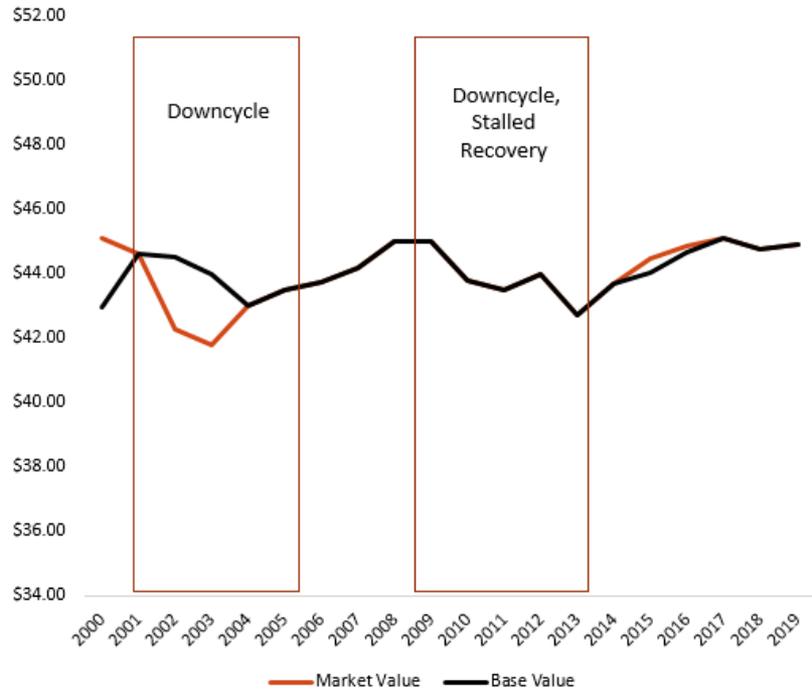
Average Future Base Value Projection Volatility



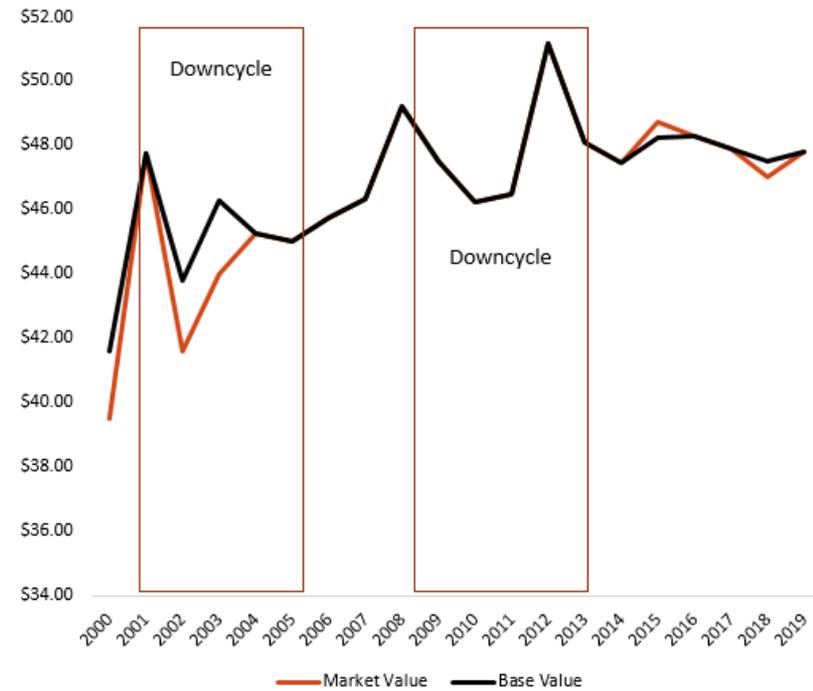
Source: mba Star Fleet: REDBOOK

# Narrowbody Values - New

New A320-200 MV vs. BV

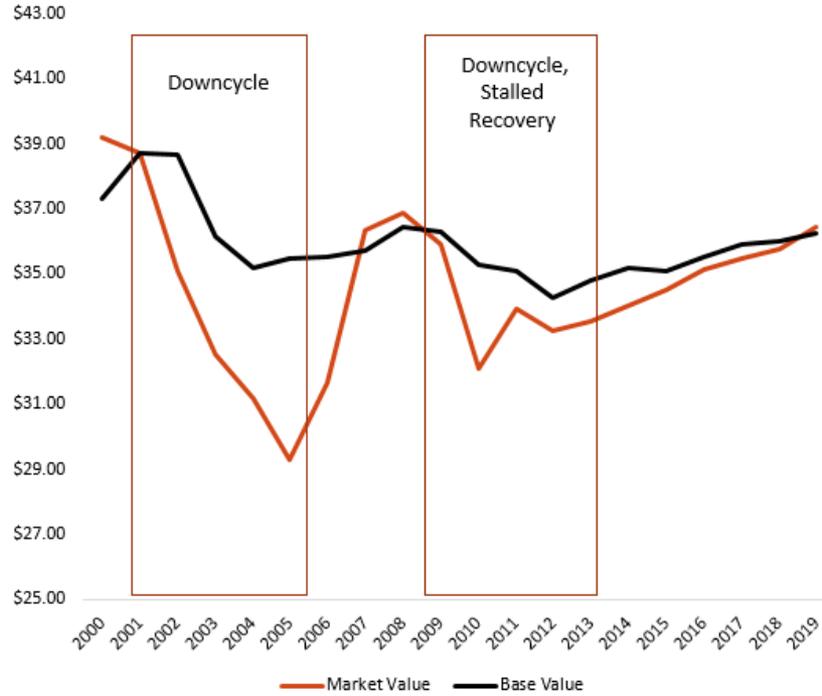


New 737-800 NG MV vs. BV

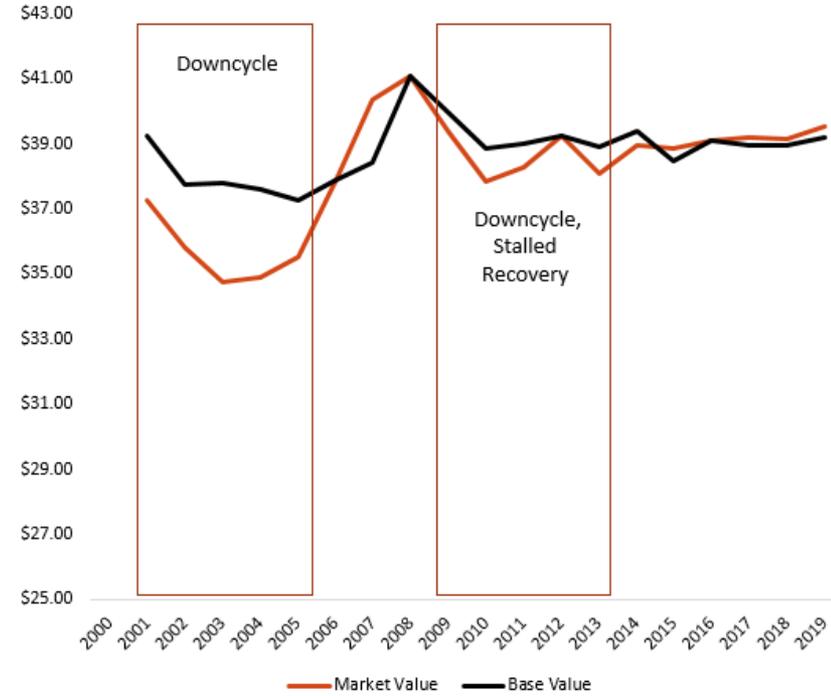


# Narrowbody Values - 3 Year Old

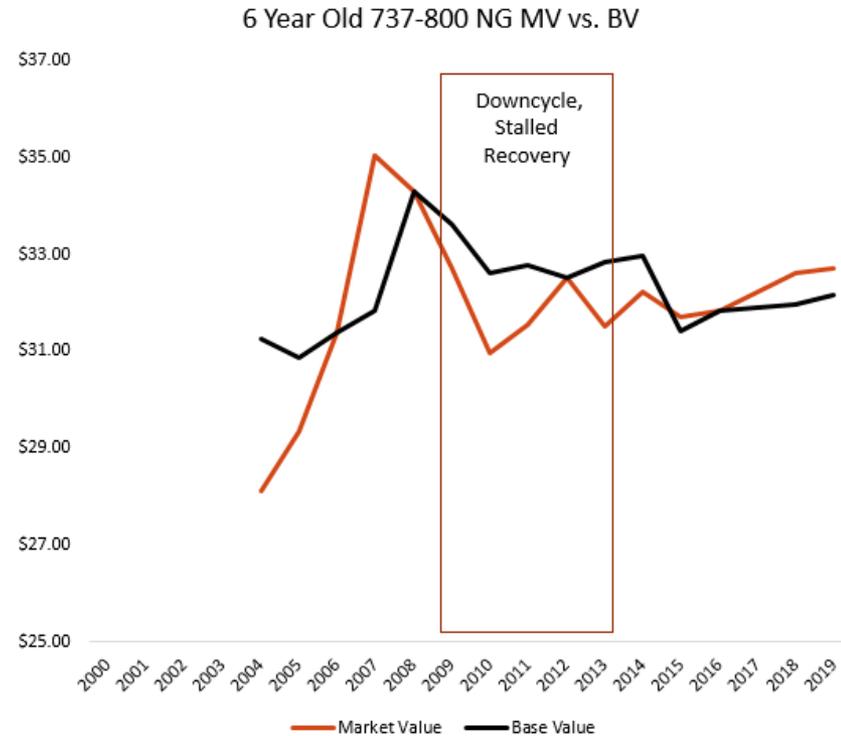
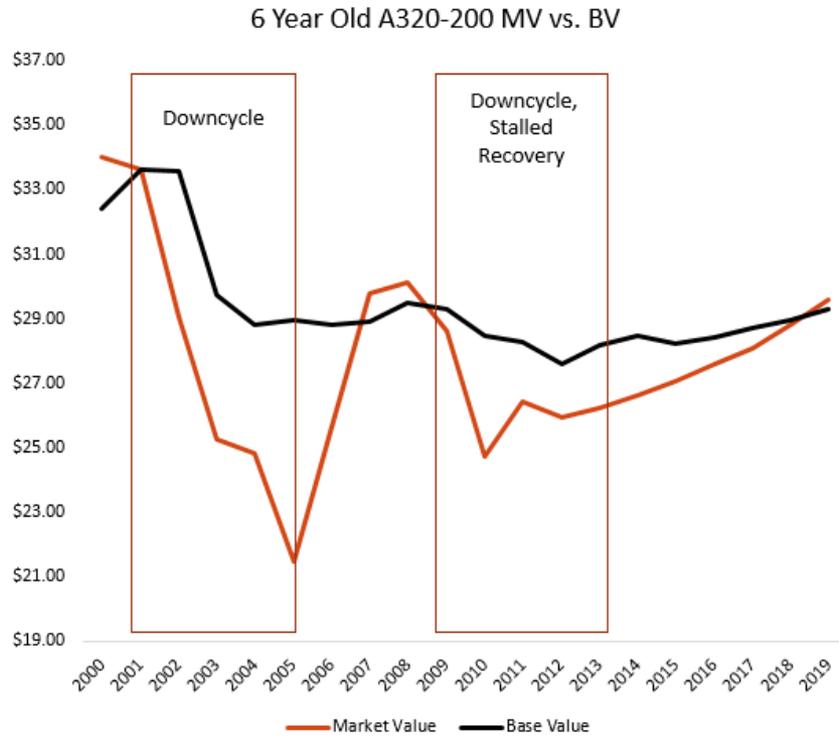
3 Year Old A320-200 MV vs. BV



3 Year Old 737-800 NG MV vs. BV

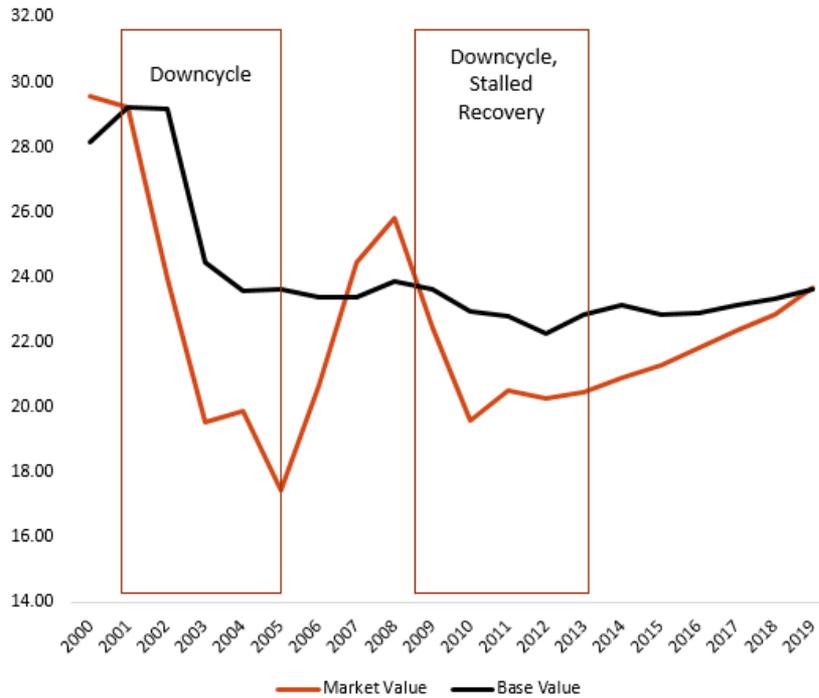


# Narrowbody Values - 6 Year Old

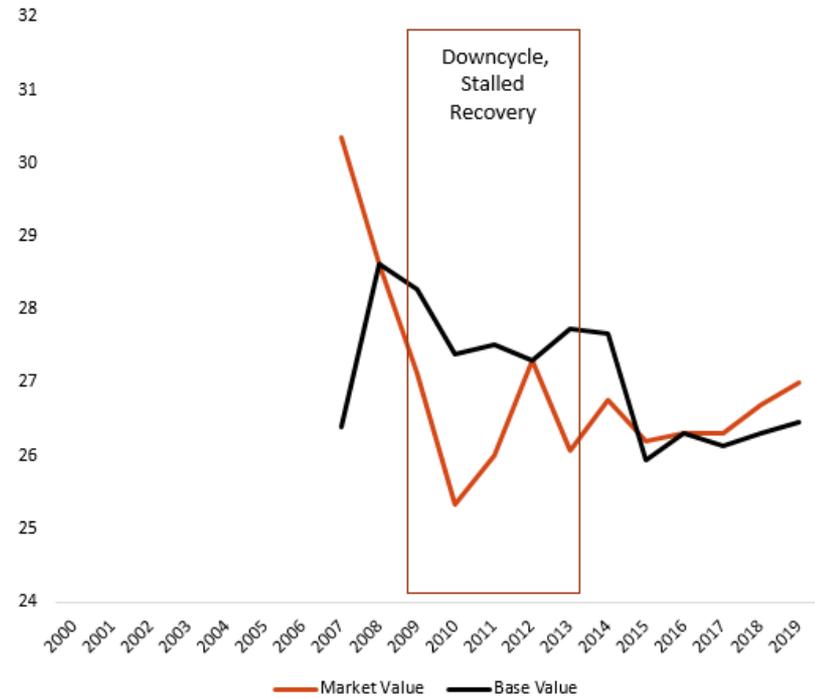


# Narrowbody Values - 9 Year Old

9 Year Old A320-200 MV vs. BV



9 Year Old 737-800 NG MV vs. BV



# Lease Encumbered Values

## Lease Encumbered Value – New Aircraft

### → Assumptions:

- Age – 0
- Lease Term – 120 months
- Return Condition – Full Life
- Inflation Rate – 2%
- Discount Rate – 6%
- Market Lease Rate

New A320-200 CFM56-5B4/3	CBV	\$44.90	↻	+2.4%
	LEV	\$45.97		
	FBV at Lease Expiry	\$23.22	↻	+36.0%
	FBV at Lease Expiry With Return Conditions	\$31.59		
New 737-800 CFM56-7B26	CBV	\$47.78	↻	+5.0%
	LEV	\$50.18		
	FBV at Lease Expiry	\$26.75	↻	+33.8%
	FBV at Lease Expiry With Return Conditions	\$35.79		

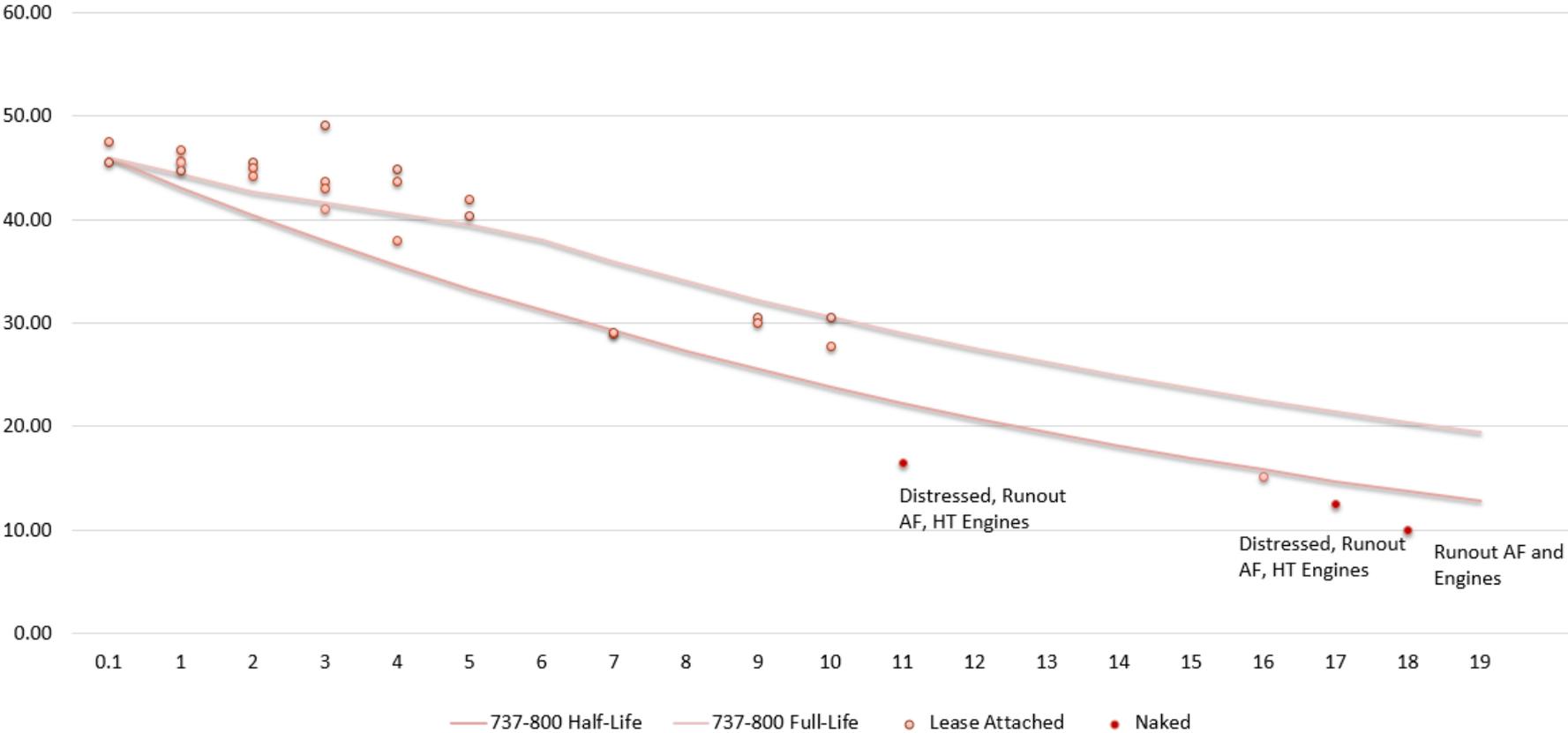
## Lease Encumbered Value – 10 Year Old Aircraft

### → Assumptions:

- Age – 10
- Lease Term – 72 months
- Return Condition – Full Life
- Inflation Rate – 2%
- Discount Rate – 9%
- Market Lease Rate

10 Year Old A320-200 CFM56-5B4/3	CBV	\$21.72	↻	+11.4%
	LEV	\$24.19		
	FBV at Lease Expiry	\$13.89	↻	+55.7%
	FBV at Lease Expiry With Return Conditions	\$21.62		
10 Year Old 737-800 CFM56-7B26	CBV	\$24.76	↻	+11.4%
	LEV	\$27.58		
	FBV at Lease Expiry	\$15.93	↻	+52.4%
	FBV at Lease Expiry With Return Conditions	\$24.27		

# Value Reference



# Technology Value - Narrowbody



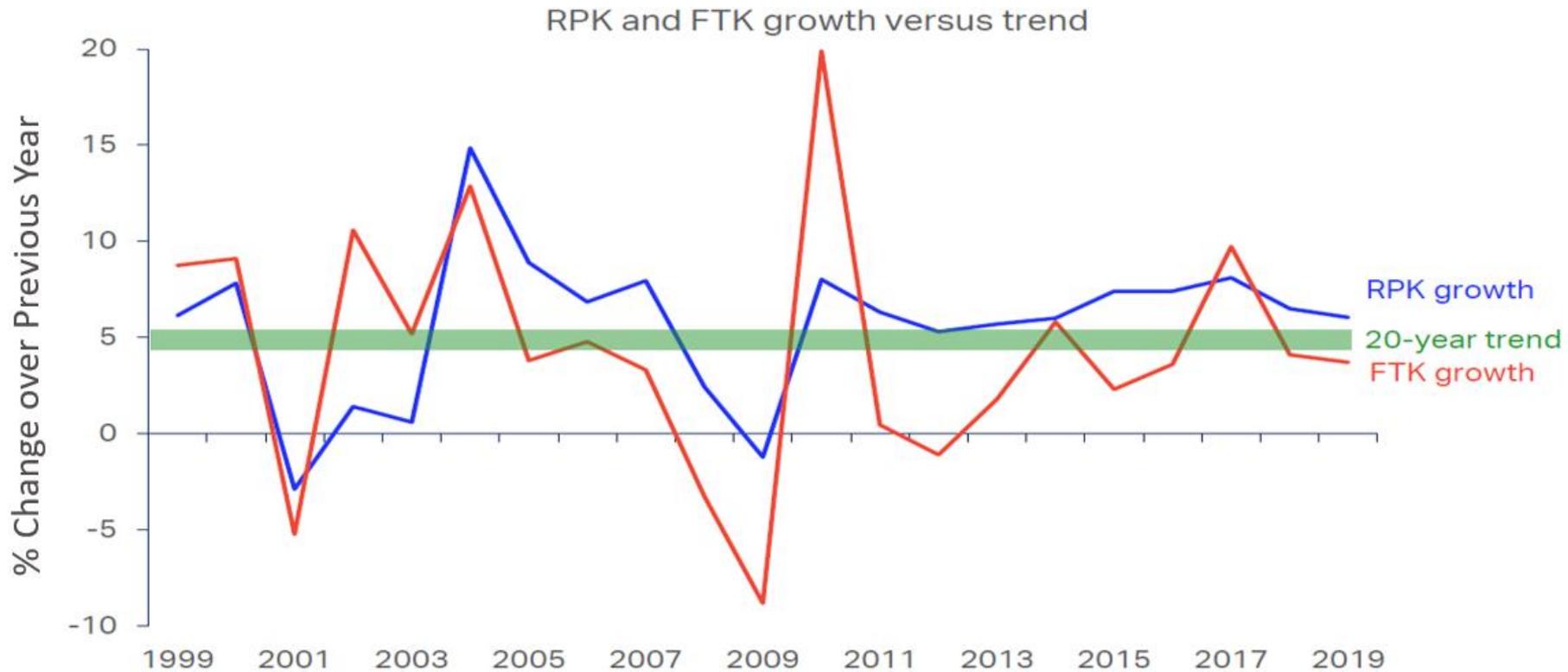
Source: mba Star Fleet; REDBOOK; US EIA



# Topics

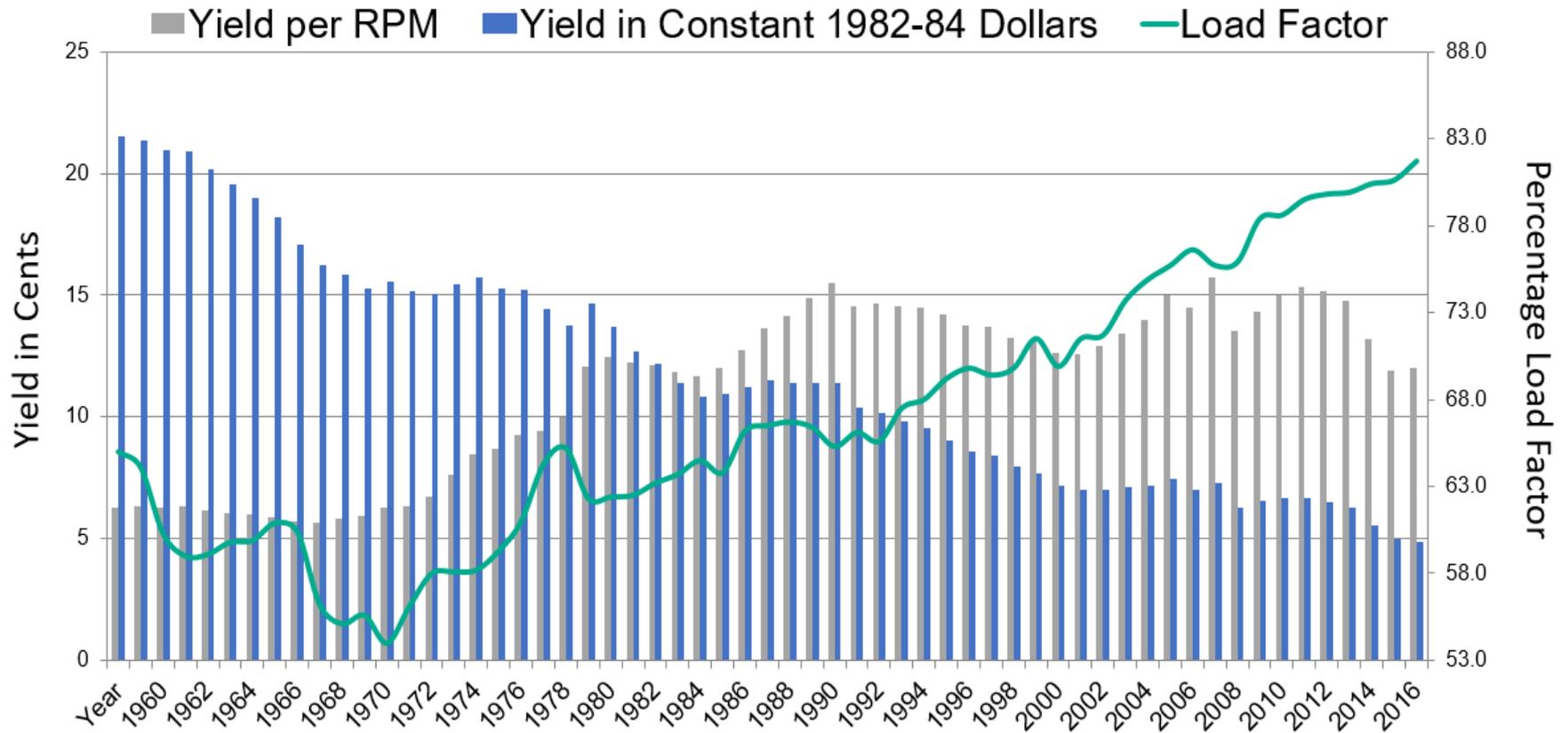
- Company Overview
- The Global Narrowbody Fleet and Valuation
- **Market Development**

# Growth Moving Back to Trend



Source: IATA

# Yield Versus Load Factor



Source: mba Star Fleet; IATA

# 5. Role and Responsibilities of the Servicer

Guy Brooker

Head of Planning and Portfolio Management



# Guy Brooker

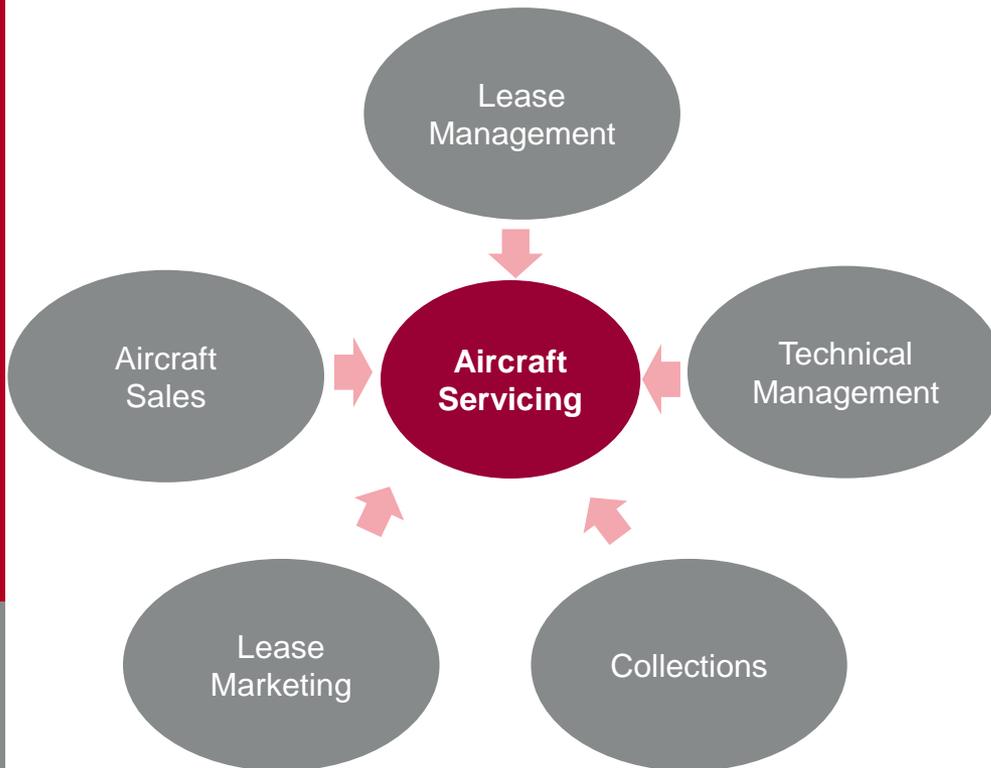
## Head of Planning and Portfolio Management



- Responsible for all aircraft portfolio matters including development of portfolio management strategy, lease management, third-party management services and providing strategic marketing support.
- Previously Vice President of Airbus China
- More than 20 years of experience in the aerospace and leasing industry

# Servicing Overview

## Key Servicing Functions



## Approach To Servicing

### Lease Management

- Contract Management System (CMS)
- Invoicing and collections
- Letter of Credit management
- Monitor insurance and other contractual obligations
- Develop enforcement strategy if necessary

### Technical Management

- Inspection program
- Transition to next lease or sale

### Lease Marketing

- Find best re-leasing opportunities in advance of lease expiration
- Maintain senior-level customer relationships
- Execute on lease placement

### Sales

- Develop opportunities to realize on investment
- Execute on sale

### Collections

- Follow-up and rectification of any late payments

Extensive servicing capabilities under one roof at BOC Aviation



# Servicing Capabilities and Investor Priorities

- Global coverage of world's leading airlines with large pool of existing customer relationships
- Deep market knowledge
- Highly experienced technical team, monitoring aircraft and supporting transitions
- Lease management team closely monitoring utilization, maintenance events and payments
- Collections team focused on prompt payment and

## Investor priorities

- Maximise cash flow
- Optimize re-lease term
- Airline credits
- Active collection efforts
- Decisive and pro-active management
- Low transition costs and minimize downtime
- Keep fleet on revenue



# Aircraft Lease Servicing Track Record

## Aircraft Lease Servicing

- More than 25 years of experience in servicing third-party aircraft assets
- Serviced more than 100 managed aircraft – includes ABS portfolio of SLVRR
- High average fleet utilization of 99.8% over the last 12 years, including the owned and managed fleet<sup>1</sup>
- Servicing managed aircraft for investors is a regular part of our business, including our annual sales programme
- More than 30 managed aircraft sold

**Consistently strong aircraft lease servicing track record since 1993**

All data as at 30 September 2019 unless otherwise indicated

Note:

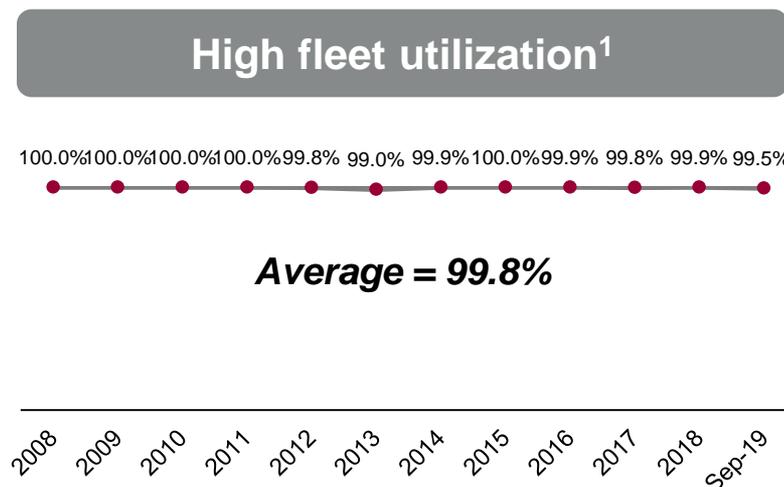
1. Average from 2008 to September 2019



# High Utilisation and Collection Rates

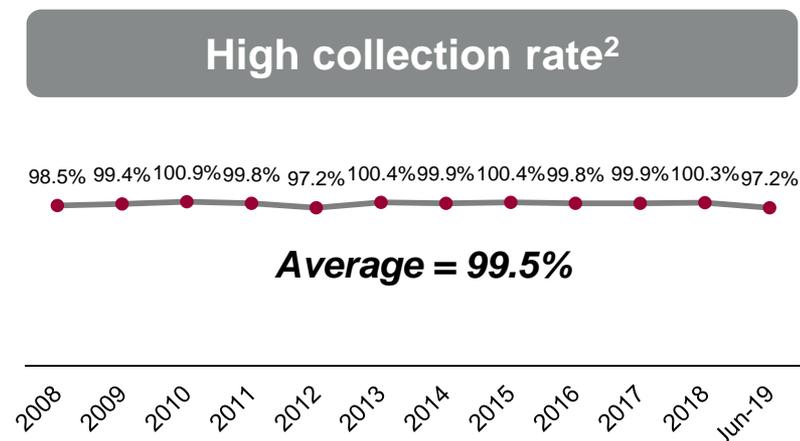
## Consistently High Fleet Utilization

- Active, experienced lease placement team
- Maintained 99.8% aircraft utilization rate on average since 2008<sup>1</sup>



## Best In-class Collections

- High average collection rate of 99.5% since 2008
- Pro-active risk management through due diligence and ongoing monitoring



All data as at 30 September 2019 unless otherwise indicated

Notes:

1. Fleet utilization is the total days on-lease in the period as a percentage of total available lease days in the period
2. As at 30 June 2019



# Repossession – Avianca Brazil

- Two aircraft - back in operation < 45 days

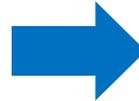


First lessor to repossess aircraft from Avianca Brazil



# Repossession – Jet Airways

- Seven aircraft (five owned, two managed) - back in operation in 21 days, on average



# Quarterly Investor Report Topics

## Portfolio performance

- Summary of Actual versus Projected Revenue and Uses over the reporting period vs Projection at start of period
- Observations on financial performance during the period
- Concentration limits and triggers at end of period
- Remarketing status

## Aircraft maintenance review

- Key maintenance events in reporting period and near term projected events
- Actuals and projected maintenance cash flows to the anticipated payment date (ARD)

## Cash flow forecast

- Actuals and projected annual cash-flows as of end of period up to ARD
- Debt service coverage ratio forecasts
- Observations on changes to cash flow forecasts

## Portfolio summary & Industry Updates

- Aircraft type, age, lease term remaining, appraised values and maintenance adjustments, lessee and country/regions
- Industry highlights impacting the portfolio of aircraft and lessees
- Asset summary by aircraft type
- Industry updates on asset types – market summary and trends
- Industry updates on lessees – notable news and operating stats



# Cash Flow Modelling



- Model maintained by Intex on an ongoing basis
- Based on issued documents
- Updated from monthly reports and other information provided by Servicer & Asset Manager
- Integrated with Intex tools for analysis of multiple investments
- Wide range of ABS transactions available
- Annual investor fee

- Model initially prepared by Investment bank, and maintained by Servicer & Asset Manager on an ongoing basis
- Updated by Servicer & Asset Manager
- Reviewed by Anchor investor
- Excel compatible model, available for download (values only, no formulas)
- Many recent Aviation ABS transactions published on DealVector
- Free for investors

SECURITY DESCRIPTION	
Total Original Face :	85,000,000
Coupon :	2.490000 %
Maturity Date :	15-Dec-2032
Current Gross WAC :	5.50017 %
Current WAM :	339 Months
Age :	17 Months
Dated Date :	15-Jul-2003
First Payment Date :	15-Aug-2003
Interest Payment Frequency :	MONTHLY
Principal Payment Frequency :	MONTHLY
Next Payment Date :	15-Dec-2004
Payment Delay :	0 Days
Day Count :	360/360
Day Adjust :	NA
Accrual Begin :	15-Nov-2004
Accrual End :	14-Dec-2004

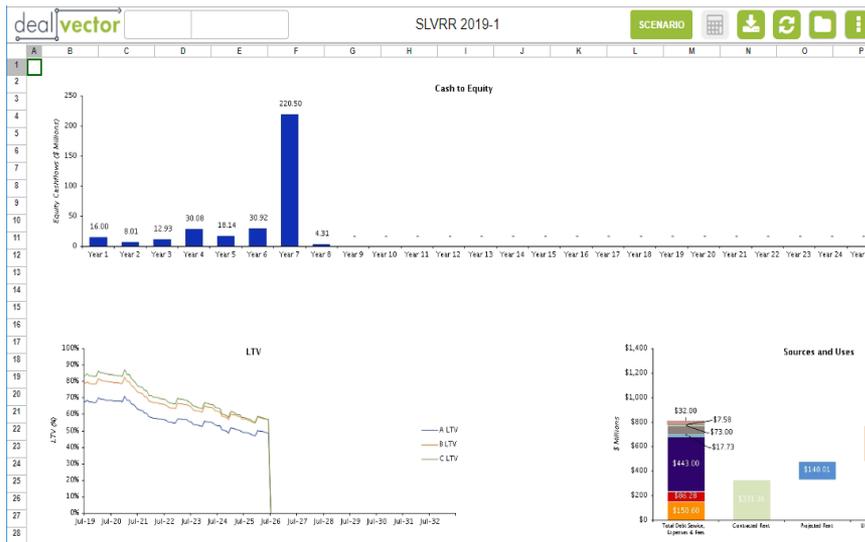
  

FLOATER/ARM INFORMATION	
Tenor :	1M
Index :	LIBOR
Currency :	USD
Multiplier :	1.000000
Reset Frequency :	1M
Spread/Margin :	40.0 b.p.
Life Cap :	7.000000 %
Life Floor :	0.000000 %
Periodic Cap :	
Periodic Floor :	
Next Reset :	15-Dec-2004



# SLVRR DealVector Model

- Cash flow model available to investors on DealVector.com  
<https://my.dealvector.com/models/showModel/DHG3-SLVRR20191>
- Model permits investors to run custom stress cases
- Post-closing monthly updates to monitor performance and allow investor forecasting
  - Regular (quarterly) LIBOR curve updates
  - Monthly update with actuals following waterfall
  - Maintenance forecast update every six months
  - Appraisal updates every twelve months



The figure shows a detailed 'Sources and Uses' summary table from the DealVector interface for model SLVRR 2019-1. The table is organized into sections: Sources, Uses, Class A, Class B, and Class C. Each section includes a 'Total' row and a '% Sources' or '% Uses' row. The data is presented in columns for Year 1 through Year 7, with a final 'Total' column.

	Total	% Sources	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Total
<b>Sources</b>										
Asset										
Lease Revenue	479.24	38.0%	79.89	74.28	67.84	68.90	68.38	64.87	63.94	-
Disposition Proceeds	381.87	30.3%	-	-	-	-	-	-	-	381.87
Maintenance Reserve Revenue	227.21	18.0%	15.52	19.28	23.81	38.95	39.22	44.59	49.93	4.31
ESU Payments for Excess Proceeds	16.96	1.3%	-	-	-	-	-	-	-	16.96
<b>Asset Total</b>	<b>1,145.28</b>	<b>91.1%</b>	<b>95.41</b>	<b>93.56</b>	<b>91.65</b>	<b>107.85</b>	<b>108.59</b>	<b>109.46</b>	<b>113.87</b>	<b>431</b>
<b>Liquidity</b>										
From Maintenance Reserve Account	104.87	8.3%	4.54	-	34.71	4.86	17.91	38.48	4.08	-
From Liquidity Facility	0.00	0.0%	-	-	-	-	-	-	-	-
From Cash Tag	0.00	0.0%	-	-	-	-	-	-	-	-
From Class C Reserve	0.00	0.0%	-	-	-	-	-	-	-	0.50
From Security Deposit Reserve	5.81	0.4%	-	1.50	0.79	1.03	0.32	0.89	0.68	-
Investment Income	0.72	0.1%	(0.06)	0.09	0.18	0.09	0.18	0.24	0.24	-
<b>Liquidity Total</b>	<b>111.60</b>	<b>8.9%</b>	<b>4.48</b>	<b>1.59</b>	<b>35.59</b>	<b>5.78</b>	<b>18.39</b>	<b>39.69</b>	<b>5.10</b>	<b>-</b>
<b>Total Sources</b>	<b>1,256.88</b>	<b>100.0%</b>	<b>100.89</b>	<b>95.14</b>	<b>127.24</b>	<b>113.64</b>	<b>126.98</b>	<b>149.15</b>	<b>119.01</b>	<b>431</b>
<b>Uses</b>										
Expenses										
Maintenance Expenses	102.71	8.2%	4.54	-	34.71	4.86	17.91	38.48	2.30	-
ESU Costs	1.40	0.1%	-	0.00	1.80	0.40	0.20	0.20	0.20	-
Security Deposits Due	5.81	0.4%	-	1.50	0.79	1.03	0.32	0.89	0.68	-
Service Fees	207.78	1.6%	2.80	2.24	2.80	2.80	1.99	2.08	7.71	-
Liquidity Facility Commitment Fee	0.90	0.1%	0.18	0.18	0.14	0.13	0.11	0.10	0.08	-
Other Expenses	12.40	1.0%	2.05	1.80	1.80	1.80	1.80	1.80	1.33	-
Asset Manager Fee	2.40	0.2%	0.38	0.37	0.34	0.33	0.33	0.32	0.32	-
Other Investor Payment	1.40	0.1%	0.32	0.34	0.33	0.33	0.33	0.32	0.32	-
<b>Expenses Total</b>	<b>350.50</b>	<b>27.9%</b>	<b>9.79</b>	<b>7.90</b>	<b>42.04</b>	<b>10.71</b>	<b>22.90</b>	<b>44.25</b>	<b>13.34</b>	<b>-</b>
<b>Class A</b>										
Interest	89.28	8.6%	16.95	15.51	13.95	12.05	10.76	9.41	8.05	-
Special Principal	411.86	32.7%	31.87	34.08	31.83	31.78	31.78	31.45	29.28	-
Excess Proceeds Principal	31.34	2.5%	-	-	12.87	11.87	0.78	-	4.03	2.29
ESU as Principal	0.00	0.0%	-	-	-	-	-	-	-	-
<b>Class A Total</b>	<b>532.48</b>	<b>42.0%</b>	<b>51.03</b>	<b>50.67</b>	<b>46.65</b>	<b>44.60</b>	<b>42.92</b>	<b>41.66</b>	<b>37.37</b>	<b>-</b>
<b>Class B</b>										
Interest	17.73	1.4%	1.48	1.18	1.29	2.48	2.21	1.83	1.65	-
Special Principal	67.34	5.4%	5.02	5.58	5.34	5.25	5.23	5.10	35.54	-
Excess Proceeds Principal	0.10	0.0%	-	2.09	1.91	-	-	-	0.99	0.38
ESU as Principal	0.00	0.0%	-	-	-	-	-	-	-	-
<b>Class B Total</b>	<b>85.17</b>	<b>6.7%</b>	<b>6.50</b>	<b>7.85</b>	<b>8.52</b>	<b>7.73</b>	<b>7.44</b>	<b>7.13</b>	<b>37.67</b>	<b>-</b>
<b>Class C</b>										
Interest	7.83	0.6%	2.08	1.74	1.39	1.04	0.74	0.45	0.15	-



# 6. Investor Engagement and Final Remarks

Timothy Ross  
Head of Investor Relations & Corporate  
Communications



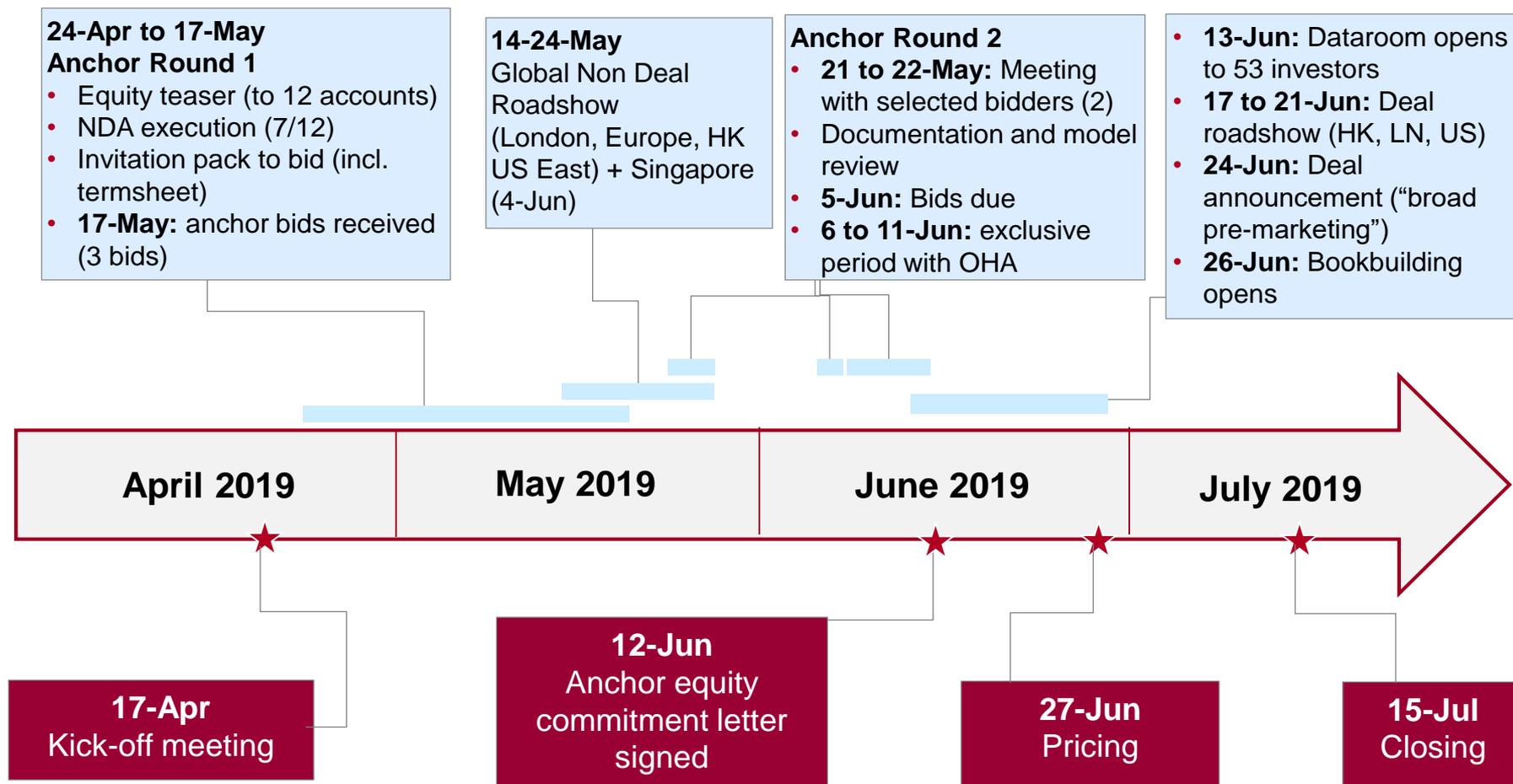
# Contents

- Aircraft ABS process and timing
- Importance of investor engagement, and our plan for SLVRR
- How Aircraft ABS fits with our investor relations
- How ABS premia to other asset classes are trending
- How you can get more involved with the product



# Transaction Timetable – SLVRR 2019-1

From kick-off to pricing in 10 weeks



# Efficient Post Closing Novation Process

Only three of 17 left to novate

No.	Lessee	Aircraft Type	Closing Date
1	Alaska	737-800	19-Jul-19
2	Southwest	737-700	20-Jul-19
3	Southwest	737-700	23-Jul-19
4	Interjet	A321-200	24-Jul-19
5	Kenya	787-8	25-Jul-19
6	Nok	737-800	1-Aug-19
7	Indigo	A320-200	9-Aug-19
8	West Air	A320-200	23-Aug-19
9	Southwest	737-700	27-Aug-19
10	Spring	A320-200	29-Aug-19
11	Tianjin	A320-200	3-Sep-19
12	Ukraine	737-800	11-Sep-19
13	Cathay	777-300ER	26-Sep-19
14	Lucky	737-800	1-Oct-19
15	Rossiya Airlines	A319-100	Expected 4Q19
16	Aeroflot	A320-200	Expected 4Q19
17	Aeroflot	A320-200	Expected 4Q19



# Investor Engagement and Plan

- SLVRR commenced with concept paper delivery in Asia to raise awareness
- The market development round focused most on Asia; deal roadshow and subsequent investment saw most activity in the US

	Market development	Deal roadshow	Total investors
Accounts met/invested	18 US / 13 EU / 27 AS	29 US / 4 EU / 12 AS	18 A / 11 B / 12 C / 9 E
Total meetings/investors	58	45	32

- US drives process and timing but aim to increase future investment by Asia/EU accounts
- Seeking to raise awareness through attendance at conferences

Contact medium	Event/frequency
Industry conferences	ABS East/SFIG (MIA/LAS) / IMN structured finance conference (HKG)
Investment bank conferences	Deutsche Bank / Goldman Sachs (NYC)
Company sponsored events	Ad hoc (such as today)
Regular outreach	Monthly servicer reports / quarterly investor relations updates

- ...but will include ABS investors in regular debt and equity NDRs in key cities
- Working with PPM and Market Research teams to manage messaging and respond to reverse enquiry

**Significant investment in developing Asian-based investor awareness**



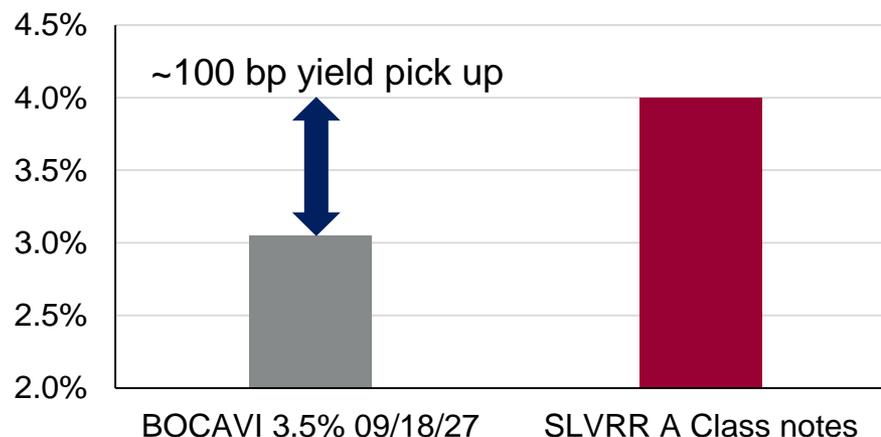
# Aircraft ABS and Investor Relations

- **Three key groups of investors:** 2588 equity, fixed income and ABS

Year	Class	Event
2012	FI	IG credit rating (S&P BBB and Fitch A-)
2015	FI	IG credit rating upgrade (S&P A- and Fitch A-)
2015	ABS	24 aircraft, single E-note investor (~US\$970 mn)
2016	EQ	IPO (~US\$1.1 bn)
2017-8	FI	Record debt issuance (US\$4.7 bn in bonds and US\$3.2 bn in loans)
2019	ABS	SLVRR (US\$668 mn)

- **Investor cross over:** We see many of the same investors in our listed equity, unsecured notes and the ABS vehicles we service
- **Yield gains:** A-rated SLVRR notes offer yield pick up relative to our unsecureds with tenor similar to ARD
- **Investor appetite rising:** Expect investor interest to increase as volumes increase and information becomes more available

## Comparable tenor notes: SLVRR vs. BOC Aviation bonds



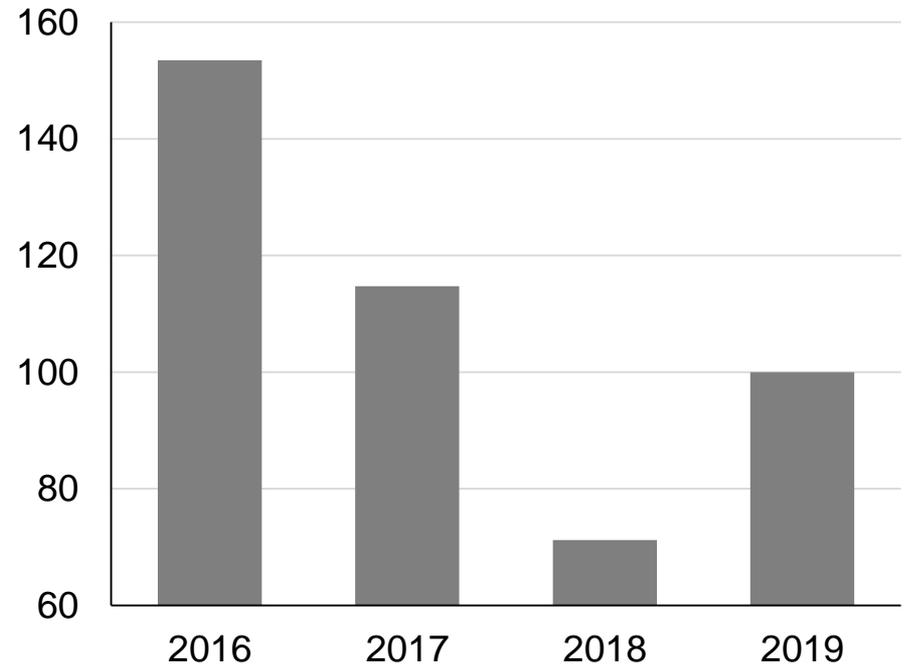
As at 28 June 2019



# Premium Declines as Volume and Information Increases

- Rapid growth in Aircraft ABS issuance is driving liquidity
- Investor confidence is also rising as information becomes more freely available
- Average spread over treasuries relative to other established ABS classes has compressed
- Spread may compress even further as more capital flows into the asset class

Aircraft ABS vs. Subprime Auto Single A spreads\* over UST (bps)



Source: Company filings, Deutsche Bank

**Spreads expected to compress as aircraft become less “esoteric”**

\*Annual average for new deals



# Market Makers Add to Liquidity and Confidence

## Debt market makers

Transaction <sup>1</sup>	Lead Banks (Structuring <sup>2</sup> and Active Bookrunners)
<b>HORZN 2019-2</b>	<b>Mizuho, Citi, CS, GS, MUFG</b>
<b>AASET 2019-2</b>	<b>GS, MUFG, DVB, Natixis</b>
<b>MACH I 2019-1</b>	<b>Mizuho, BNP, Citi, DB</b>
<b>WAVE 2019-1</b>	<b>GS, DB, CACIB</b>
<b>SLVRR 2019-1</b>	<b>DB, MS, BOCI</b>
<b>HORZN 2019-1</b>	<b>Mizuho, Citi, CS, BNP, MUFG</b>
<b>AASET 2019-1</b>	<b>GS</b>
<b>BJETS 2019-1</b>	<b>Citi, BofA, DB, MS, Carlyle Capital, KKR</b>
<b>PION 2019-1</b>	<b>Mizuho, GS, CACIB, Citi</b>
<b>JOL-AIR 2019-1</b>	<b>GS, DB, Natixis, Mizuho, SMBC Nikko</b>
<b>STARR 2019-1</b>	<b>DB, Citi, GS, CACIB, Natixis</b>
<b>CLAS 2019-1</b>	<b>GS, BNP, Citi, DB</b>
<b>MAPS 2019-1</b>	<b>GS, CACIB</b>

**Active equity market makers including DB, GS, Mizuho, Citi, CS and BofA provide depth and liquidity to the Aircraft ABS market**

Source: Deutsche Bank

Notes:

1. Aircraft ABS transactions In 2019 YTD
2. Names in bold are structuring leads



# Conclusion

- Aircraft ABS is well established and rapidly growing pool
- Well established in the US and expanding in Asia, where we have focused market development efforts
- Our portfolio sale to SLVRR increased Asia-based investor interest and participation
- ...presenting investors an attractive yield pick up opportunity
- We expect trend to continue

**Rigorous investor relations engagement across BOC Aviation's capital structure**



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# Appendix 1: Glossary of Terms



# Glossary of Terms (1)

- **Anchor Equity** – Equity committed prior to bookbuilding, by a lead investor.
- **Anticipated Repayment Date (ARD)** – Expected Final Payment Date for the Series A Notes and the Series B Notes.
- **AOG** –The period of time when an aircraft is “on ground” or “off lease”, in transition between two lessees.
- **Appraisal** – estimate of the value of specific asset by an independent third party.
- **Asset-Backed Security or ABS** – securities backed by specific assets and the payments on which are tied to or derived from the cash flows produced by the underlying assets. Examples of typical collateral backing ABS include auto loans, credit card receivables, home equity loans, and equipment leases, including aircraft leases.
- **Bond Equivalent Yield or BEY** – yield calculated on the basis of semiannual compounding, as in the case of corporate bond yields. Although aircraft ABS usually pay monthly, ABS yields and spreads normally are converted to a BEY basis for easier comparison with U.S. Treasury securities, agency debt, and corporate bonds.
- **Collateral** – In the context of an aircraft ABS, assets backing or underlying a securitization, i.e. aircraft and the related leases.
- **Credit Rating** – a formal evaluation of the credit quality of a bond granted by a rating agency
- **Debt Service Coverage Ratio or DSCR** – The ratio between monthly available collections (e.g. rent, maintenance revenue) and senior payments (interest and principal repayments of senior tranches, senior maintenance reserves, expenses). Calculated monthly on a rolling basis.
- **End of Lease Payments or EOLs** - Maintenance payments under a lease, based on the maintenance condition of the aircraft at the end of the lease, paid at the end of the lease. EOLs differ from Maintenance Reserves which are paid periodically during the lease term, usually monthly, rather than at the end of the lease.
- **Expected Maturity** – the estimated date of final payment on a security, based on prepayment forecasts for the securitized assets.
- **Half Life Base Value or HLBV** – The base value of an aircraft is the appraiser's opinion of the underlying economic value of an aircraft in an open, unrestricted, stable market environment with a reasonable balance of supply and demand, and assumes full consideration of its “highest and best use. The half-life valuation assumes that the maintenance condition for each of the main value components of the aircraft – i.e., the airframe, engine performance restoration, engine life limited parts, landing gear and APU – are exactly mid-way between new and run-out (For more details, please refer to ‘Half-Time Values’ on page 89).

## Glossary of Terms (2)

- **Initial Reserves Balance** – The amount transferred to the ABS vehicle at closing to cover maintenance expenses, general expenses or class C interest for a period of time, usually the first 12 months.
- **Legal Final Maturity** – in reference to a bond, the date before which the bond must be repaid in order not to be in default.
- **Liquidity Facility** - A liquidity facility provided to the issuer which is available to fund some senior expenses (e.g. maintenance costs, senior fees), pay interest on Senior notes and pay Senior Hedge Payments, in each case to the extent there is a shortfall in amounts available in the available collections (rent and MR revenue) to fund such amounts. The liquidity facility may not be used to pay any other amount in respect of the notes.
- **Loan-to-Value Ratio or LTV** – a measure of the collateral coverage that is calculated as the ratio of (1) the amount of the bond to (2) the appraised value of the subject assets.
- **Maintenance Adjusted Base Value** – the average of the Half Life Base Values of an Aircraft as provided by three independent Appraisers and adjusted to account for the maintenance conditions of such Aircraft at a specific point of time.
- **Maintenance Cash Flow** – Cash flow comprising maintenance reserves paid by lessees (which are inflows) and maintenance expense reimbursements to be paid by lessor (which are outflows).
- **Maintenance Reserves**– Monthly payments by the lessee for the maintenance value consumed each month through aircraft utilization.
- **Priority of Payments (a.k.a. Waterfall)** – The schedule by which payments of interest and principle are made to those holding more senior securities prior to those holding less senior securities, and which also determines the priority of which other payments are required to be made by the ABS entity including to replenish the Expense Account and the various reserve accounts.
- **Projected Lease Rate** - an appraiser's opinion of the probable monthly operating lease rate that may be generated by an aircraft at a point in the future (e.g. when the existing lease expires). Projected lease rates may vary from both the lease rates that are currently applicable and the actual future lease rates achieved.

# Glossary of Terms (3)

- **Rapid Amortization Event** – When any of the following events occur in relation to a payment date:
  - A debt service coverage ratio amortization event whereby the DSCR drops below a predefined level
  - A utilization event whereby the number of aircraft on lease drops below a predefined level
  - The occurrence of the scheduled final payment date

Rapid amortization diverts all available cash flows (after payment of senior expenses and reserves) to amortize the debt tranches (i.e. no cash flows to equity). It reduces the time in which investors will receive the repayment of their principal.

- **Repossession/remarketing/refurbishment or RRR costs** - If a lessor has to repossess or transition an aircraft, it will typically incur costs related to legal work, insurance, pilot expenses, fuel, storage, technical checks, cabin reconfiguration (if any) and registration/deregistration documents.
- **Security Deposits** - A deposit, in cash or as a letter of credit, provided by a lessee to secure the obligations of that lessee under a lease.
- **Special Purpose Vehicle or SPV** – a legal entity formed for a limited purpose.

# Appendix 2: Value Definitions

# Collateral Valuations - Definitions

- **Current Market Value** – ISTAT defines Market Value (or Current Market Value if the value pertains to the time of the analysis) as the appraiser's opinion of the most likely trading price that may be generated for an asset under market circumstances that are perceived to exist at the time in question.
  - Assumes that the asset is valued for its highest, best use, and the parties to the hypothetical sale transaction are willing, able, prudent and knowledgeable and under no unusual pressure for a prompt transaction.
  - It also assumes that the transaction would be negotiated in an open and unrestricted market on an arm's-length basis, for cash or equivalent consideration, and given an adequate amount of time for effective exposure to prospective buyers.
  - Market Value of a specific asset will tend to be consistent with its Base Value in a stable market environment. In situations where a reasonable equilibrium between supply and demand does not exist, trading prices, and therefore Market Values, are likely to be at variance with the Base Value of the asset.
  - Market Value may be based upon either the actual (or specified) physical condition or maintenance time or condition status of the asset, or alternatively upon an assumed average physical condition and mid-life, mid-time maintenance status.
  
- **Current Base Value** – ISTAT defines Base Value as the Appraiser's opinion of the underlying economic value of an aircraft, engine, or inventory of aircraft parts/equipment (hereinafter referred to as "the asset"), in an open, unrestricted, stable market environment with a reasonable balance of supply and demand. Full consideration is assumed of its "highest and best use".
  - Base Value is founded in the historical trend of values and in the projection of value trends and presumes an arm's-length, cash transaction between willing, able, and knowledgeable parties, acting prudently, with an absence of duress and with a reasonable period of time available for marketing.
  - Base Value of an asset assumes the physical condition is average for an asset of its type and age. It further assumes the maintenance time/life status is at mid-time, mid-life (or benefiting from an above-average maintenance status if it is new or nearly new, as the case may be).
  - Since Base Value pertains to a somewhat idealized asset and market combination it may not necessarily reflect the actual current value of the asset in question, but is a nominal starting value to which adjustments may be applied to determine an actual value. Because it is related to long-term market trends, the Base Value definition is commonly applied to analyses of historical values and projections of residual values.

# Collateral Valuations - Definitions

- **Full Life Values** - An aircraft is considered to be “full life” when all scheduled maintenance has zero calendar time, zero flight cycles, and zero flight hours accumulated since all major maintenance events, including overhauls, repairs, and replacements.
  - An aircraft’s Full-Life Value reflects this theoretical fresh-from-maintenance condition, or, more accurately, cash compensation paid to reimburse for any calendar time, cycles, or hours accumulated since all major maintenance events.
  - Full-Life Values are calculated based on maintenance costs received from airframe and engine OEMs and then verified based on additional cost data received from MROs, operators, and lessors. mba’s Full Life Value is derived from costs associated with the airframe Intermediate Check (C Check), Heavy Check (6/8 Year), Landing Gear Overhaul, Engine Performance Restoration, and Engine Life-Limited Part (“LLP”) replacement.
  - All new-build aircraft are considered full life at the date of delivery and typically are in service for 4 to 8 years before reaching a theoretical half-time status.
  
- **Half-Time Values** - mba receives several hundred market transaction data points annually from lessors, airlines, banks, and manufacturers, which reflect a variety of actual maintenance and lease conditions. These value data points are then normalized to a theoretical half-time condition by adjusting for maintenance conditions which fall above or below half time (the midpoint of maintenance checks) and removing any lease streams attached.
  - Using a combination of these industry data points, internal analysis of the specific aircraft type and market, the general aviation market, wider economic conditions, and a proprietary valuation model, mba defines a Half-Time Base and Market Value for each aircraft production year.
  - Value adjustments are made to the Half-Time Base and Market Value to account for month of build, Maximum Take-Off Weight (“MTOW”), engine type, installation of winglets/sharklets, In-Flight Entertainment (“IFE”), Additional Center Tanks (“ACT”), Overhead Flight Crew Rest (“OFCR”) and Electronic Flight Instrument System (“EFIS”), as applicable. These value adjustments take into consideration actual costs to install as well as the market transferability.

# Collateral Valuations - Definitions

- **Lease Encumbered Value-** Lease encumbered value is the Appraiser's opinion of the value of an aircraft, under lease, given a specified lease payment stream (rents and term), and estimated future residual value at lease termination, and an appropriate discount rate.
- **Soft Value or Distress Value -** Forced Sale Value, Liquidation Value are terms to describe the Appraiser's opinion of the price at which an aircraft (or other assets such as an engine or spare parts) could be sold in a cash transaction under abnormal conditions – typically an artificially limited marketing time period, the perception of the seller being under duress to sell, an auction, a liquidation, commercial restrictions, legal complications, or other such factors that materially reduce the bargaining leverage of the seller and give prospective buyers a significant advantage that can translate into heavily discounted actual trading prices.
  - Depending on the nature of the assignment, the appraiser may be asked to qualify his opinion in terms of disposition within a specified time period, for example 60 days, 90 days or six months as the needs may be.
  - Apart from the fact that the seller is uncommonly motivated, the parties to the transaction are otherwise assumed to be willing, able, prudent and knowledgeable, and negotiating at arm'slength, normally under the market conditions that are perceived to exist at the time, not an idealized balanced market.



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