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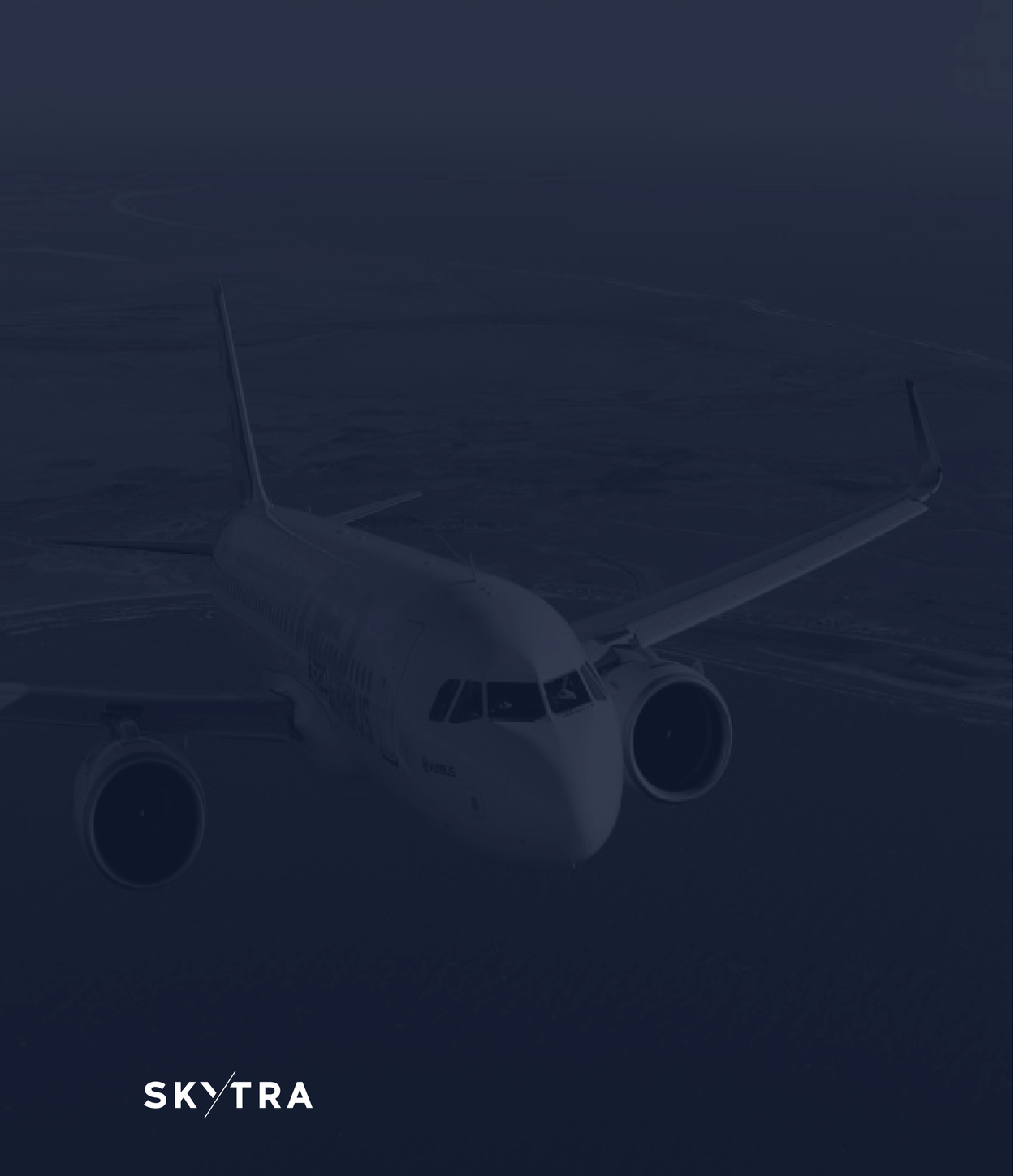
How reducing airlines' revenue volatility could reduce their cost of financing

Executive summary of a research paper
written by **Régis Huc**



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Info

About the author

This is an executive summary of a **study produced by Régis Huc in December 2020.**

About Régis Huc

Regis began his career working in London as a finance manager for LaCie, a computer hardware manufacturer. He joined McKinsey & Company in Amsterdam in 2001 where he worked for 10 years as a Corporate Finance Expert primarily for Transport and Infrastructure clients, governments and financial investors.

Since 2011, Regis has worked as an independent Corporate Finance consultant on finance and aviation topics (most recently for McKinsey and IATA) and has been a resident finance faculty and program manager at Toulouse Business School. Regis is also teaching finance courses at Airbusiness Academy, Airbus University, Ecole Nationale de l'Aviation Civile (ENAC) and ISAE-Supaero in Toulouse.

How reducing airlines' revenue volatility could reduce their cost of financing

Today, Airlines are using a series of financial risk management strategies and tools to reduce volatility on risks such as fuel prices, exchange rates and interest rates. However there has never been a financial instrument to reduce volatility on the largest position affecting their profit and loss statement - revenue.

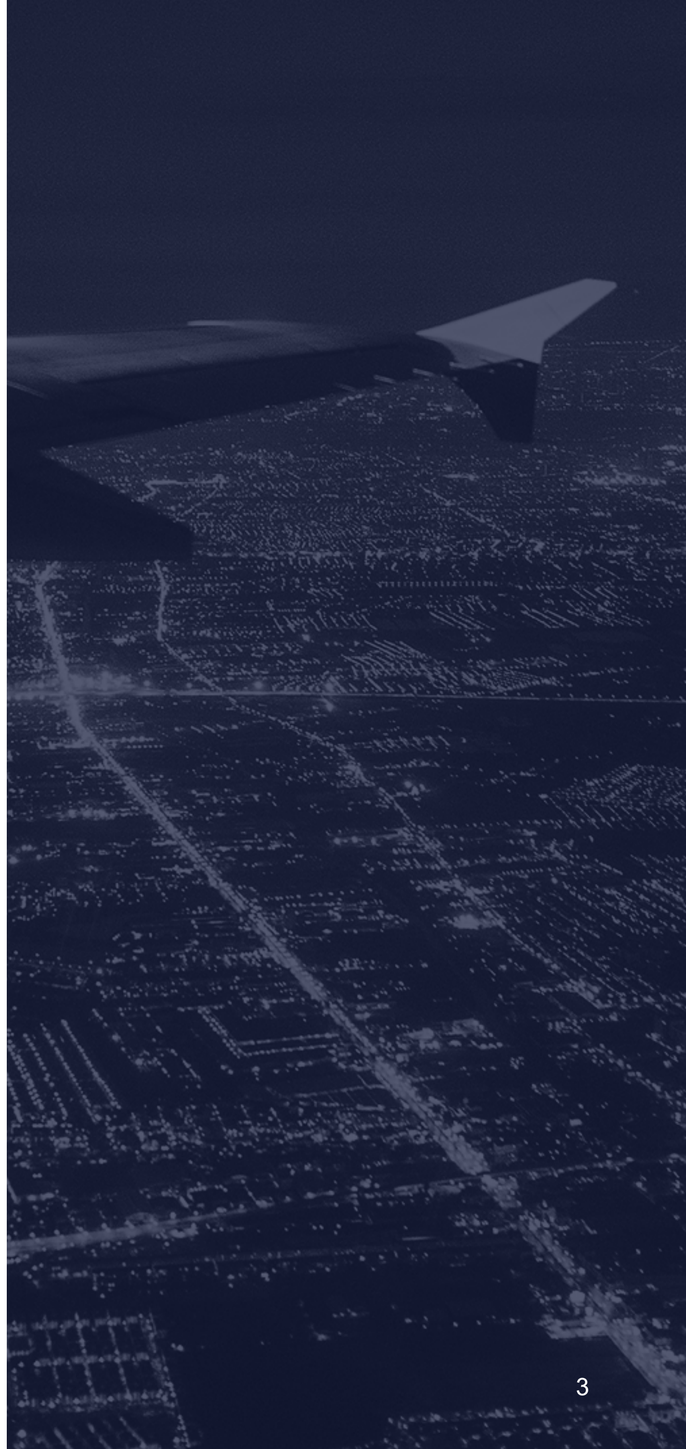
The assumption in this study is that by hedging ticket prices, the airline industry could reduce its revenue volatility.

This study is investigating the impact of reducing the volatility of the Airline industry revenues and profits (e.g. by hedging the value of ticket prices for instance) on Airlines' credit quality, and ultimately their financing costs.

The findings of this study suggest a single notch improvement on the airline industry's cost of financing could result in up to $7.7 billion in savings per year and the impact of a notch on credit spreads is between 10 and 100 basis points, when using the observed spreads, and between 10 and 40 basis points when adjusting for default risk.

The assessment was based on a combination of two methods:

1. investigating the cost of a 'notch' for each credit rating and applying this average value to the typical credit rating of the Airline industry and
2. using a theoretical model (Emery's Lambda) to link earnings volatility and default probability, and its implied effect on credit spreads.



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Method One – part 1: Linking earnings volatility with credit quality

Based on the current distribution of airline credit ratings (including COVID effect), the difference in credit spreads for each credit rating were observed and then the impact of a one notch rating improvement on the cost of financing of the whole industry was quantified. While rating agencies primarily assess airlines credit ratings using financial ratios, earnings volatility also plays a significant role in their assessment; as the financial ratios applicable to determine the financial risk are more favourable if profit volatility is lower.

Observing Standard & Poor's and DBRS Morningstar's business and financial risk scoring considerations and processes for airline industry credit ratings, it was possible to link airline's earnings volatility with their credit quality and relate improved credit scores to gaining a notch. Airline profits are volatile and whilst costs can be somewhat controlled through risk management tools for fuel, fx and interest rates, the single biggest contributor to profit is revenue.

Almost 80% of the 30 airlines rated by S&P, Moody's and Fitch are not investment grade and airline credit ratings have worsened significantly since the Covid-19 outbreak. However, there are hundreds of commercial airlines operating around the world and 30 is not a sufficient number to base industry wide conclusions upon. The Airline Analyst (TAA) provides estimated credit ratings for around 200 airlines and these ratings and their distributions are broadly in line with the published ratings of the three major ratings agencies, S&P, Moody's and Fitch.

Larger airlines carry more debt, debt is linked to assets, assets are linked to revenues, revenues are a proxy for size, so TAA ratings were weighted according to each airlines' size to establish the credit rating distribution for the whole airline industry pre-COVID and including the COVID impact. (Refer to graphs 1 and 2 on next page.)

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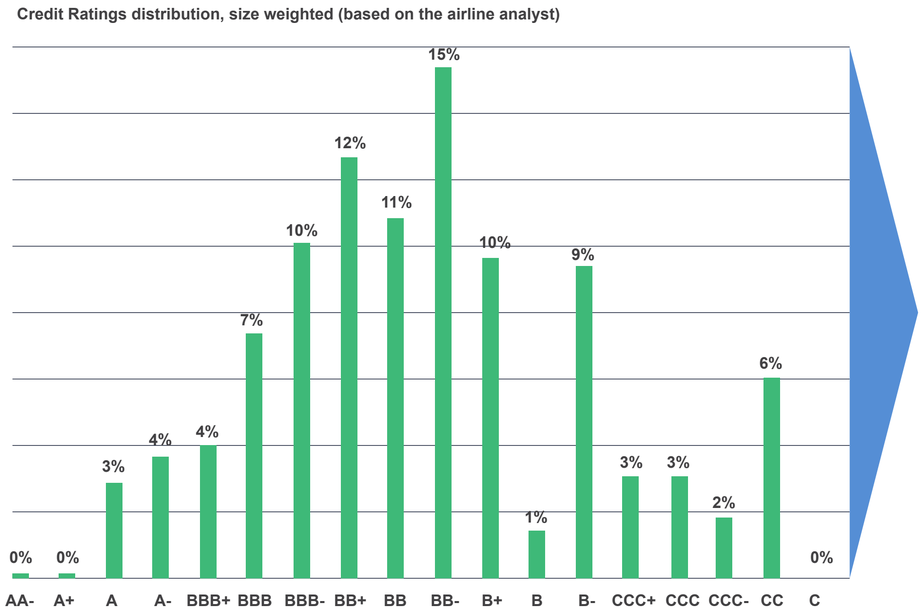
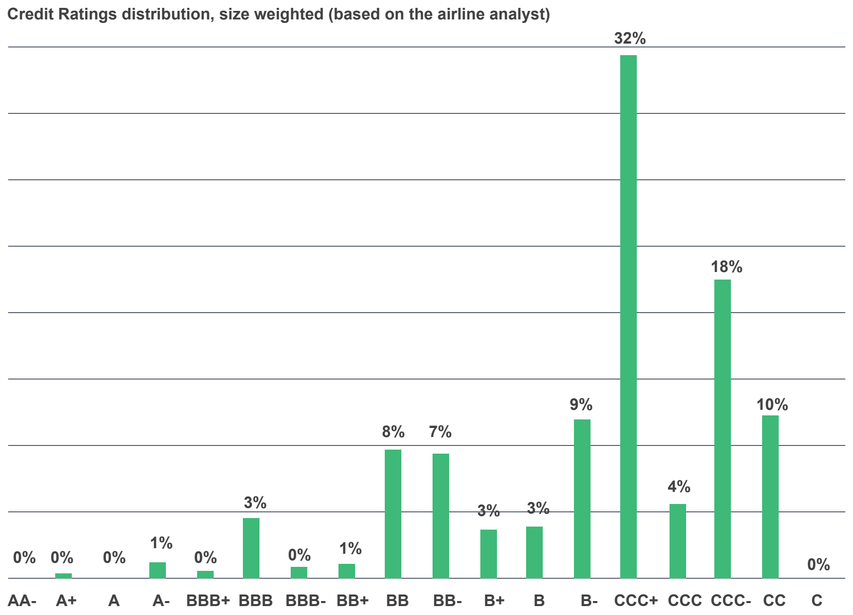
Graph 1: Pre-Covid - Revenue weighted, as of July 2019:



Graph 2: Incl. Covid impact - Revenue weighted, as of Nov 2020:



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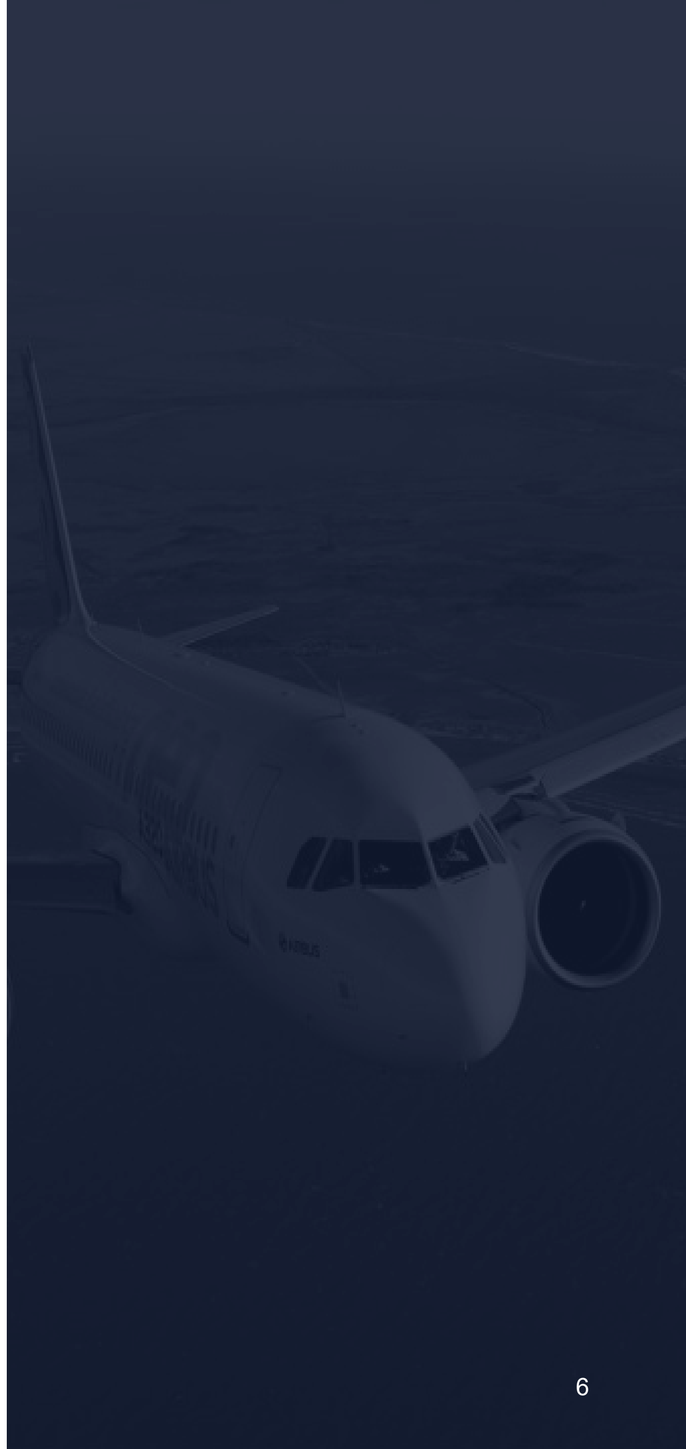
Method One – part 2: Linking credit ratings with the cost of financing

To link credit ratings with the costs of financing, the whitepaper observes credit spreads for each rating class, based on long term market data and on S&P research. Significantly, it noted that whilst spreads increase as ratings get closer to default levels, the size of the spreads increase the greatest between speculative (BB+) and investment grade (BBB-). In other words, the benefits of moving up one notch are different depending where on the ratings distribution curve each airline is.

So based on the assumed airline credit ratings distribution and using high/low values based on both academic and commercial research sources, it was then possible to quantify the impact of interest rates applicable to the airline industry resulting from improving the industry's credit rating by one notch. It was also observed that given the credit rating distribution curve of the airline industry, the majority of airlines would benefit from moving between notches which offer the greatest positive change.



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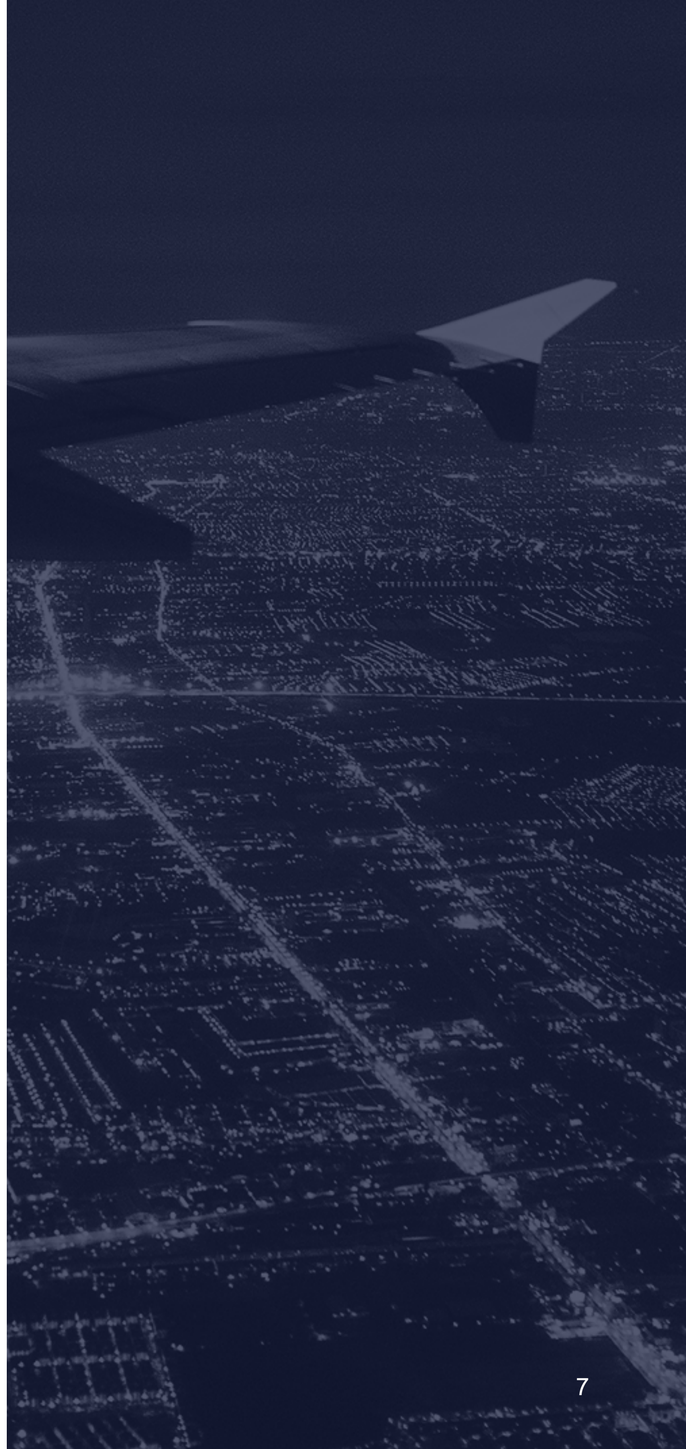
Method Two: Linking Earnings Volatility to Default Probability

The study analyses the impact of the expected default loss on the observed credit spreads and also looks at the minimum rates applied on aircraft ECA financing.

Using company reports and analyst consensus estimates in financial databases, the Lambda index was applied to illustrate how a decrease of earnings volatility, hence a reduction of the riskiness of cash flows, impacts the implied probability of default for the airline industry.

A decrease of the probability of default of 20-30 basis points (as was calculated using a typical airline as an example in the whitepaper) translated into a saving of approximately 10-15 basis points on financing costs. This approach confirms that with a reduction of cash flows volatility of 10-30%, savings of about 20 basis points (i.e. roughly equivalent to one credit notch) are plausible.



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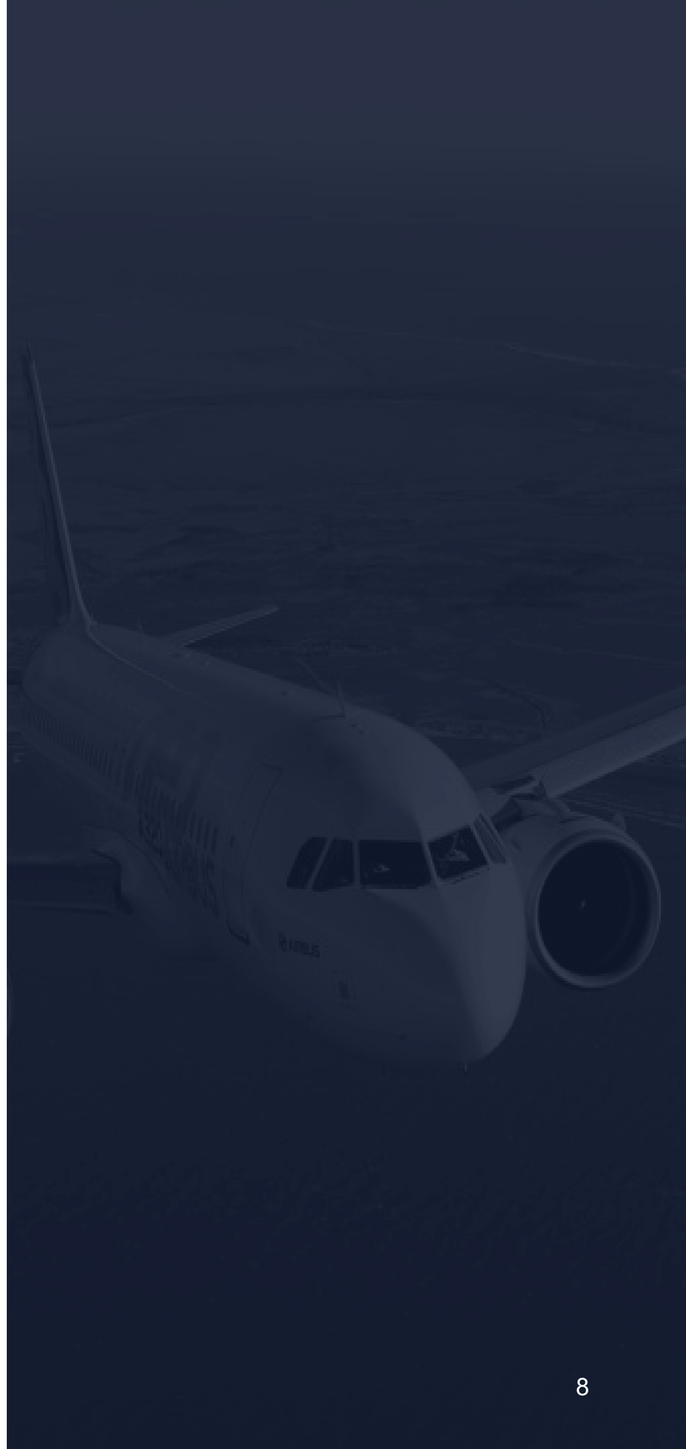
Conclusions

By using two alternative and complementary approaches, it was demonstrated that a significant reduction of airlines' earnings volatility could result in a credit rating improvement of up to one 'notch' (the difference between two consecutives credit ratings).

On average, the difference between two credit ratings in terms of cost of financing is at least 10-25 basis points. Applying the observed (and adjusted) credit spreads to the assumed credit rating distribution of the airline industry, it was estimated that the typical cost of financing savings should amount to 14-88 basis points, (14-36bp based on adjusted spreads and 83-88bp considering the opportunity gain for airline financiers based on observed spreads).

Applying these savings to the estimated amount of financial debt of the whole airline industry, calculated using ICAO, IATA and TAA data to establish debt/revenue ratios and applying these across the sources of debt financing (operating lease / secured / unsecured debt), it was estimated **the airline industry could save up to $7.7 billion in financing costs each year.**



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The findings suggest the impact of a notch on credit **spreads is between 10 and 100 basis points**, if we use the observed spreads, and **between 10 and 40 basis points if we adjust for default risk.**

	Observed Spreads	Risk adjusted spreads
Investment grade, Cluster 1 [A → AAA]	**~10 bp**	**~10 bp**
Investment grade, Cluster 2 [BBB- → A-]	**~20 bp**	**~20 bp**
Non Investment grade, Cluster 3 [B- → BB+]	**~60 bp**	**~25 bp**
Non Investment grade, Cluster 4 [CCC+ and bellow]	**~100 bp**	**~40 bp**

The impact of a 'one notch' improvement on the Airline industry's cost of financing ranges between **$0.5** and **$7.7 billion per year**, based on the assumptions made regarding the applicable debt (total vs unsecured) and the spreads data used, with a baseline scenario (default adjusted spread) between $0.5 and $2.5 billion per year:

Industry wide savings on financing costs, US$ millions

Assumed industry credit rating weighted by revenues

			Debt assumption		
		Industry effect (basis points)	*Total Financial Debt* $692bln	*Total debt excl. OpLease* $388bln	*Unsecured debt only* $160bln
Spread savings	*S&P Study*	**111.7**	**7730**	**4333**	**1791**
	Current/LT average spreads	**83.1**	**5755**	**3266**	**1333**
		87.9	**6088**	**3412**	**1410**
	Current spreads adjusted for default risk	**33.8**	**2340**	**1311**	**542**
		35.7	**2473**	**1386**	**573**

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