Deloitte.

A bumpy ride ahead

Cash & working capital insights into the airline sector

Value Creation Services – 2019

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Executive summary

Executive summary

The airline sector is under pressure due to a downward trend in free cash ratios, increased leverage and declining profits.

Global carriers are cruising through turbulent market conditions – excess capacity and rising costs are jeopardising profits, eroding equity and increasing the risk of insolvency.

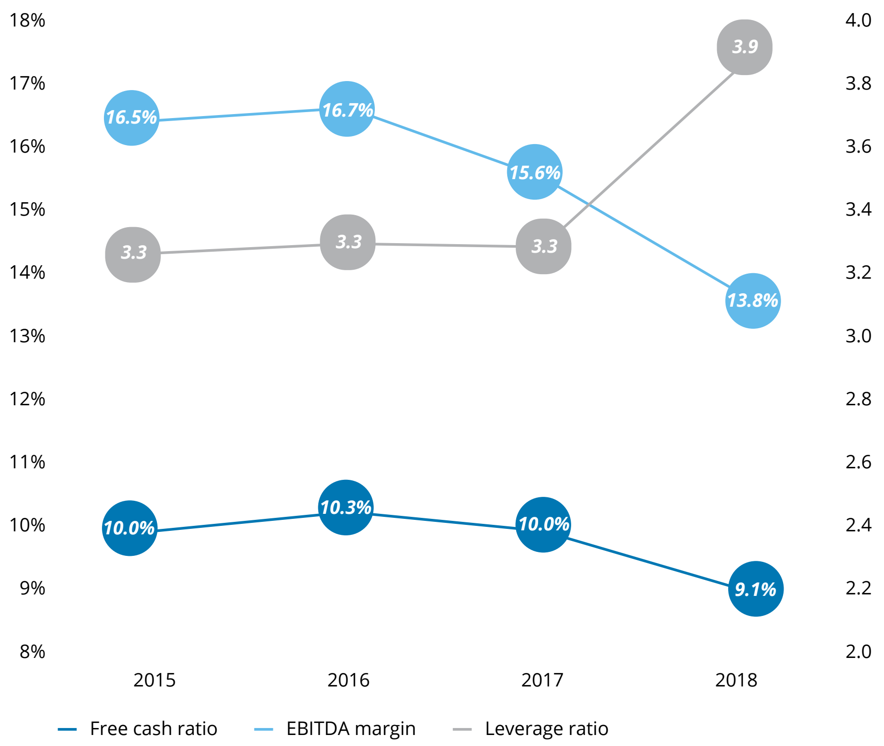
To sustain the required CAPEX airlines are raising more and more debt – net debt went up by a 8.2% CAGR in the last four years.

On top of the increased leverage, airlines are not holding enough free cash to refund all their un-flown tickets. This makes card acquirers increasingly nervous, as confirmed by a rising number of instances of acquirers demanding collateral and withholding passenger payments to mitigate the risk of insolvency from Airlines.

Throughout this report we will look at some key metrics to support such a concerning trend.

Global carriers are cruising through turbulent market conditions – excess capacity and rising costs are jeopardising profits, eroding equity and increasing the risk of insolvency.

Figure 1. Free Cash Ratio, EBITDA Margin and Leverage Ratio



Source: Company financials from S&P Capital IQ

Now more than ever airlines need to keep a close eye on their funding sources, aiming to deleverage either through raising fresh shareholder capital or through embarking on cash and working capital optimisation initiatives.

Our recent experience has proven that **carriers can improve free cash by 20% to 40%** through targeted working capital initiatives, both operational and commercial.

If the average carrier were to **increase its free cash by only 10%** it would be able to **grow its CAPEX spend by around 8%.** *That's the purchase price of a major single-aisle aircraft!*

10% increase in free cash

8% increase in CAPEX spend

1 new major single-aisle aircraft

Exploring trends in the sector

Days Sales Outstanding (DSO)

Days Sales Outstanding (DSO) in the airline sector is typically driven by two factors:

1

The payment terms negotiated with the credit/debit card acquiring providers

The payment terms with card acquirers define the time lag between when a ticket is issued to when the airline received the funds. This can range from 1 day to more than 30 days, depending on a variety of factors including geography, business model (long vs short haul) and risk. Card acquirers tend to use payment terms as a form of protection against the current exposure with an airline for all un-flown sales (also known as Air Traffic Liability or ATL). The greater the ATL, the greater the exposure of the card acquirer to un-flown tickets. In case of an airline's insolvency, the customers would request a refund for their un-flown tickets to their credit card provider, which in turn would claim the money from the card acquirer, which then would seek payment from the insolvent airline.

In addition to the risk factor, the exposure is also impacted by the airline's long/short haul mix. Carriers with a high proportion of long haul routes are likely to have a relatively greater ATL, because passengers tend to book long haul flights more in advance than short haul.

2

The mix of passenger vs. cargo revenues

A secondary driver of DSO is the mix of passenger and cargo revenues.

Typical passenger sales are paid in advance through credit and debit cards, whereas cargo sales are paid in arrears through standard invoicing and payment processes or, more often, through industry specific settlement systems such as CASS (globally) and CNS (US). In general, cargo sales carry a longer DSO than passenger sales, hence the higher the proportion of cargo sales the longer the DSO.

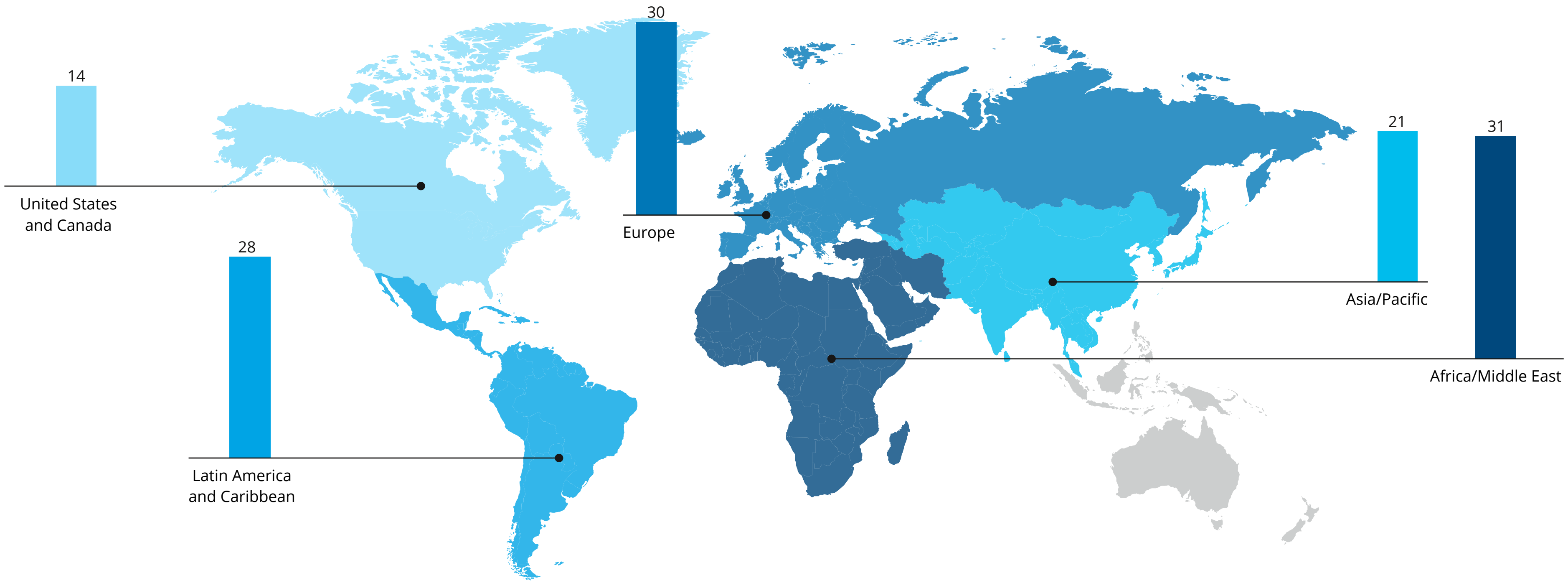
Geographical analysis

Our analysis shows that European carriers tend to have a much longer DSO than North American carriers, 30 and 14 days respectively in the last year.

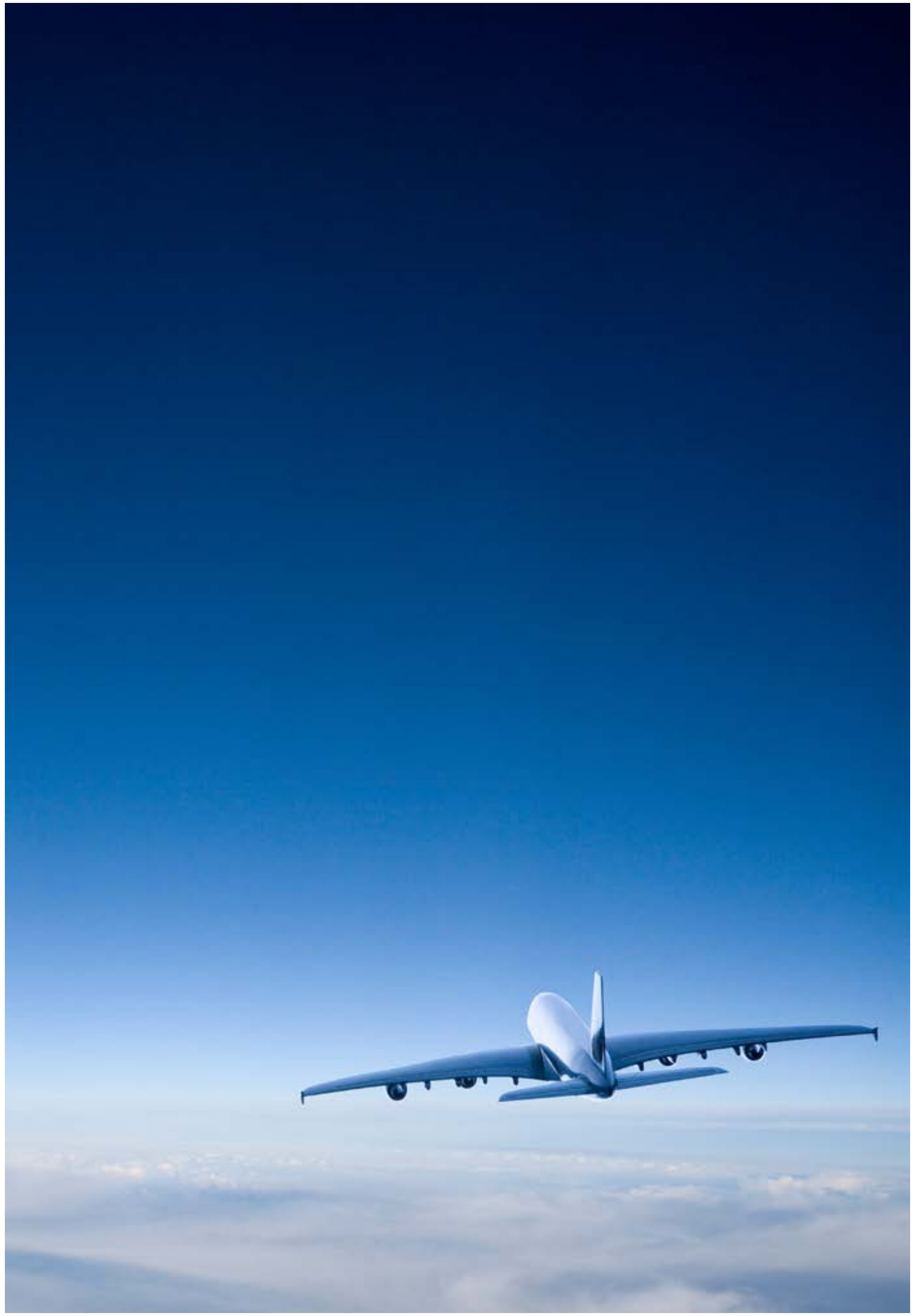
This is a reflection of the fact that European carriers are perceived to be riskier than North American counterparts, due to aspects such as price wars and FX exposure, both of which are larger in Europe than in North America. Therefore, card acquirers in Europe demand longer payment terms than in North America to mitigate the higher insolvency risk.

Asia Pacific has the second shortest DSO, at 21 days, although there is a lot variance amongst carriers, particularly in China.

Figure 2. DSO by Geography in 2018



Source: Company financials from S&P Capital IQ



Carrier analysis

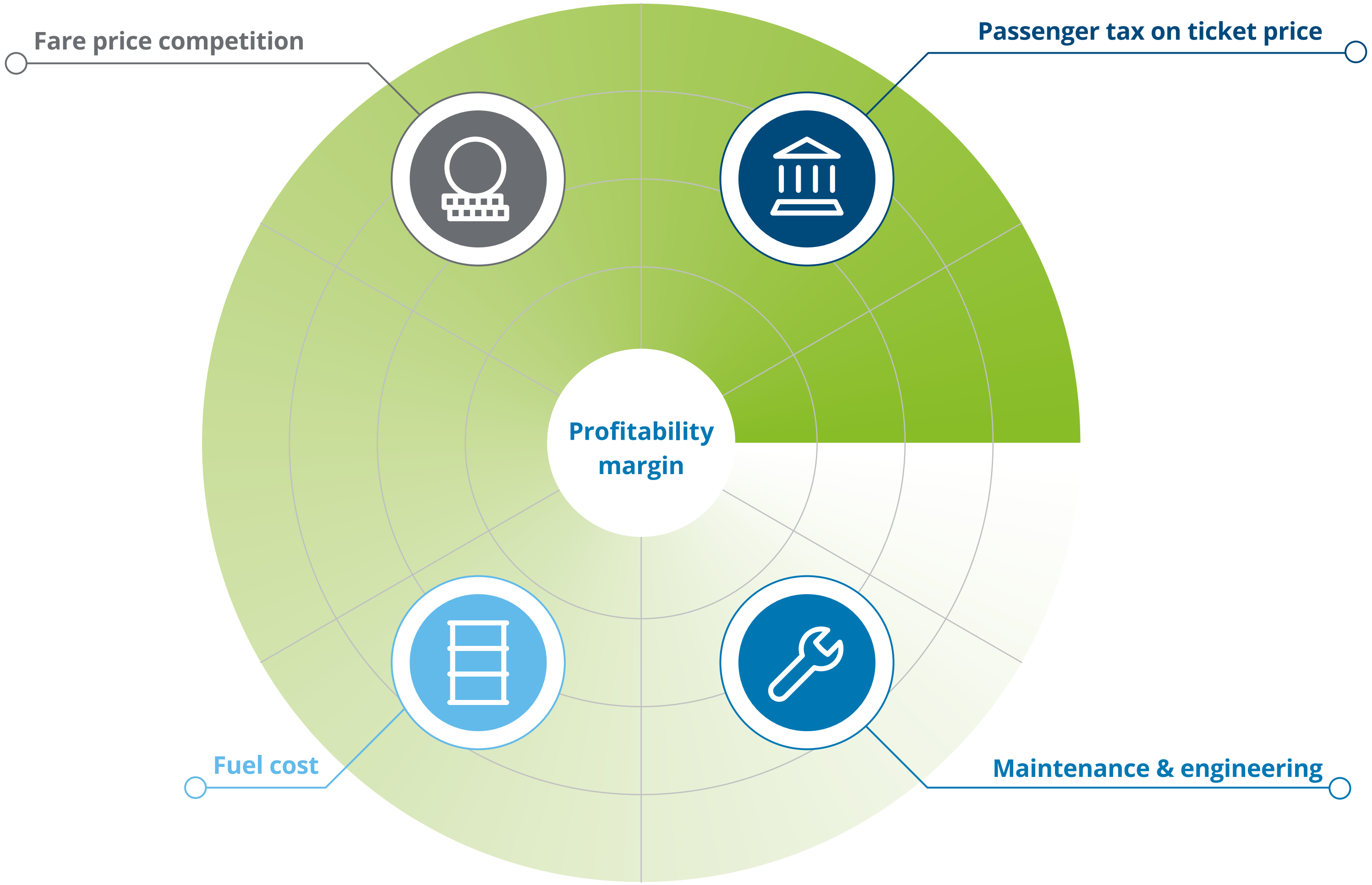
It is also interesting to note that Low Cost carriers have a shorter DSO than Full Service carriers (17 vs 23 days respectively in the last year). This is mostly due to Low Cost carriers having a shorter booking curve than Full Service carriers and also a passenger/cargo mix much more skewed towards the former than the latter.

Figure 3. DSO by Carrier Type in 2018

Source: Company financials from S&P Capital IQ

EBITDA margin

Profitability in the airline sector is driven by a multitude of factors...



... being mostly influenced by variations in RPK (demand) and ASK (capacity), which directly impact pricing dynamics, and by fuel and non-fuel cost trends.

RPK vs ASK growth and Capacity Utilisation

RPK (revenue passenger kilometre) and ASK (available seat kilometre) have increased very similarly in the last 4 years, resulting in only a small 1.4 percentage points increase in the overall industry capacity utilisation. This dynamic has not created any strong pressure for fare increases in the sector.

Furthermore, the ongoing price war in the industry, especially in Europe, has negatively affected the carriers' ability to increase fares.

As a result, total passenger revenue grew by only 3.3% CAGR in the last 4 years.

Fuel & Non-Fuel Cost annual growth

Although the jet fuel cost has significantly decreased in 2015 and 2016, driven by the strong decline in market prices, it rebounded in the last two years. Overall, it had a 4-year CAGR of 0.9% and it accounts for 23.5% of the sector's OPEX.

On the other hand, non-fuel costs account for 76.5% of the industry's OPEX and had a CAGR of 6.5%.

As a result, total OPEX CAGR was 5.1% in the last 4 years.

Figure 4. RPK vs ASK growth and Capacity Utilisation

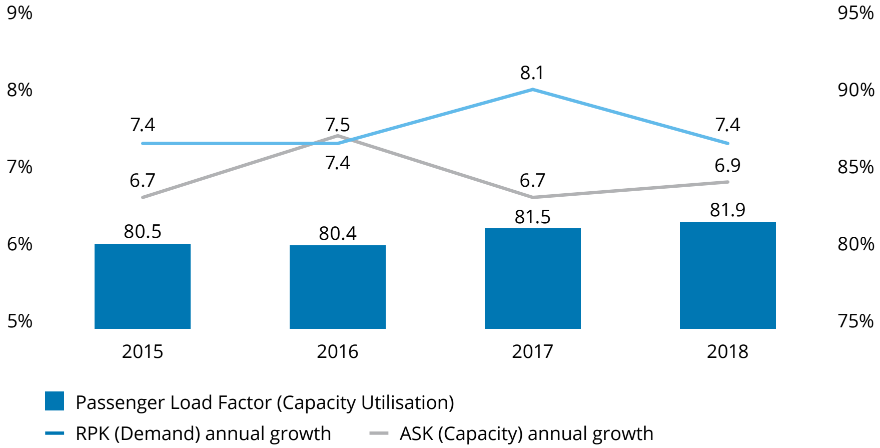
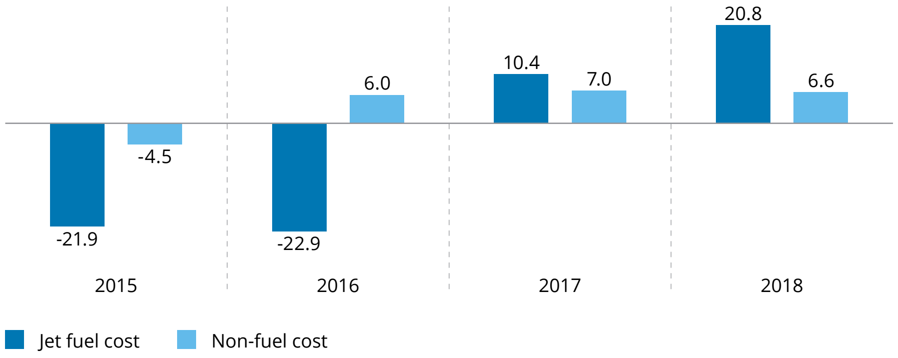
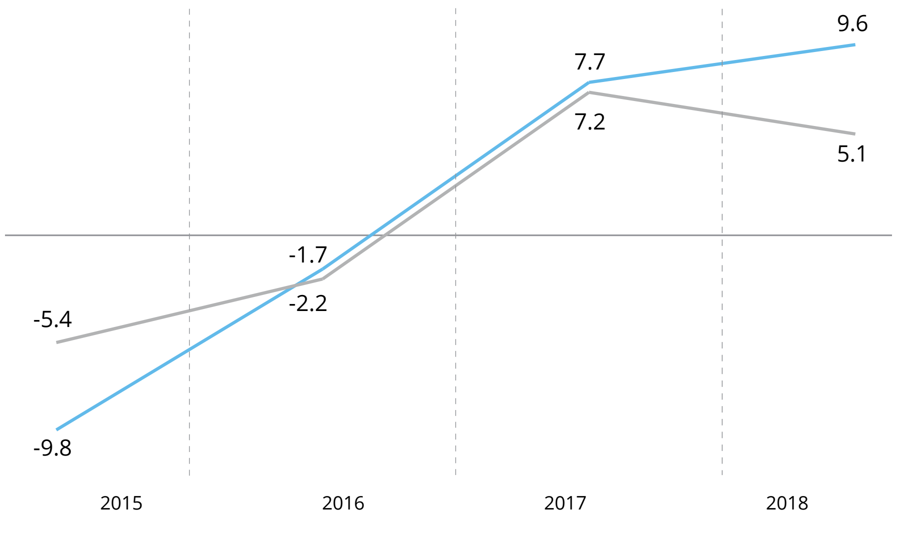


Figure 5. Fuel & Non-Fuel Cost annual growth (%)



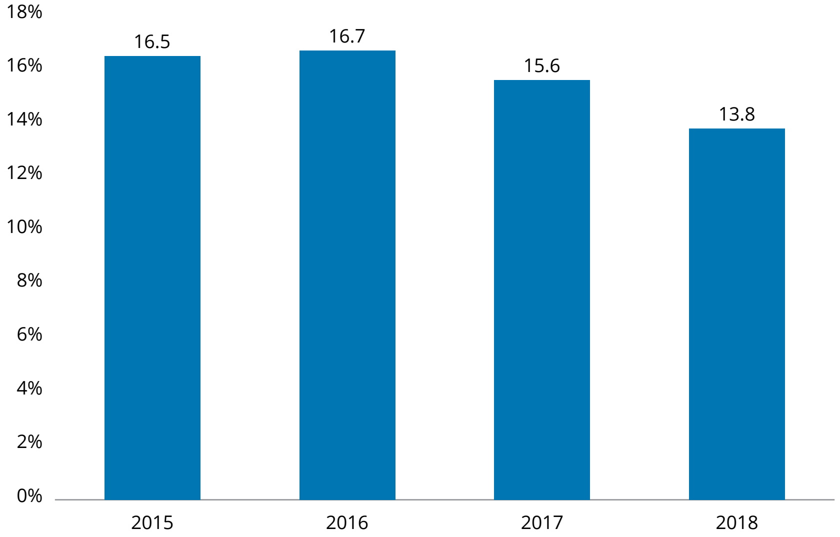
Source: IATA's Industry Economic Performance Report (June 2019)

Figure 6. Passenger Revenue and OPEX Annual Variation (%)



Source: IATA's Industry Economic Performance Report (June 2019)

Figure 7. Sector EBITDA Margin



Source: Company financials from S&P Capital IQ

Overall, OPEX has increased more than passenger revenue in the last 4 years...

While passenger revenue had a CAGR of 3.3%, OPEX grew by 5.1% CAGR.

... resulting in an EBITDA margin deterioration for the global industry

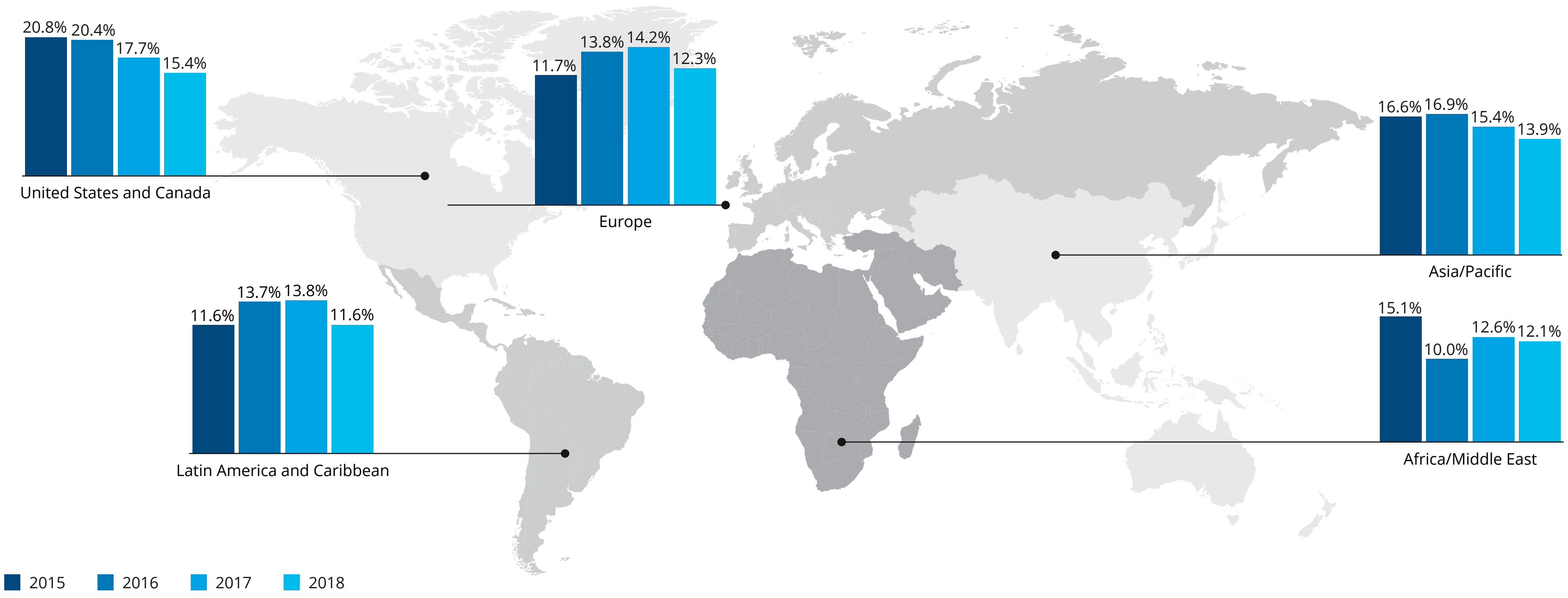
This continued pressure on profitability is likely to impact cash flows. The increased risk will result in card acquirers implementing protective measures such as withholding passenger sales or demanding cash collateral, both of which will soak up cash flows and put airlines under severe financial constraints.

Geographical analysis

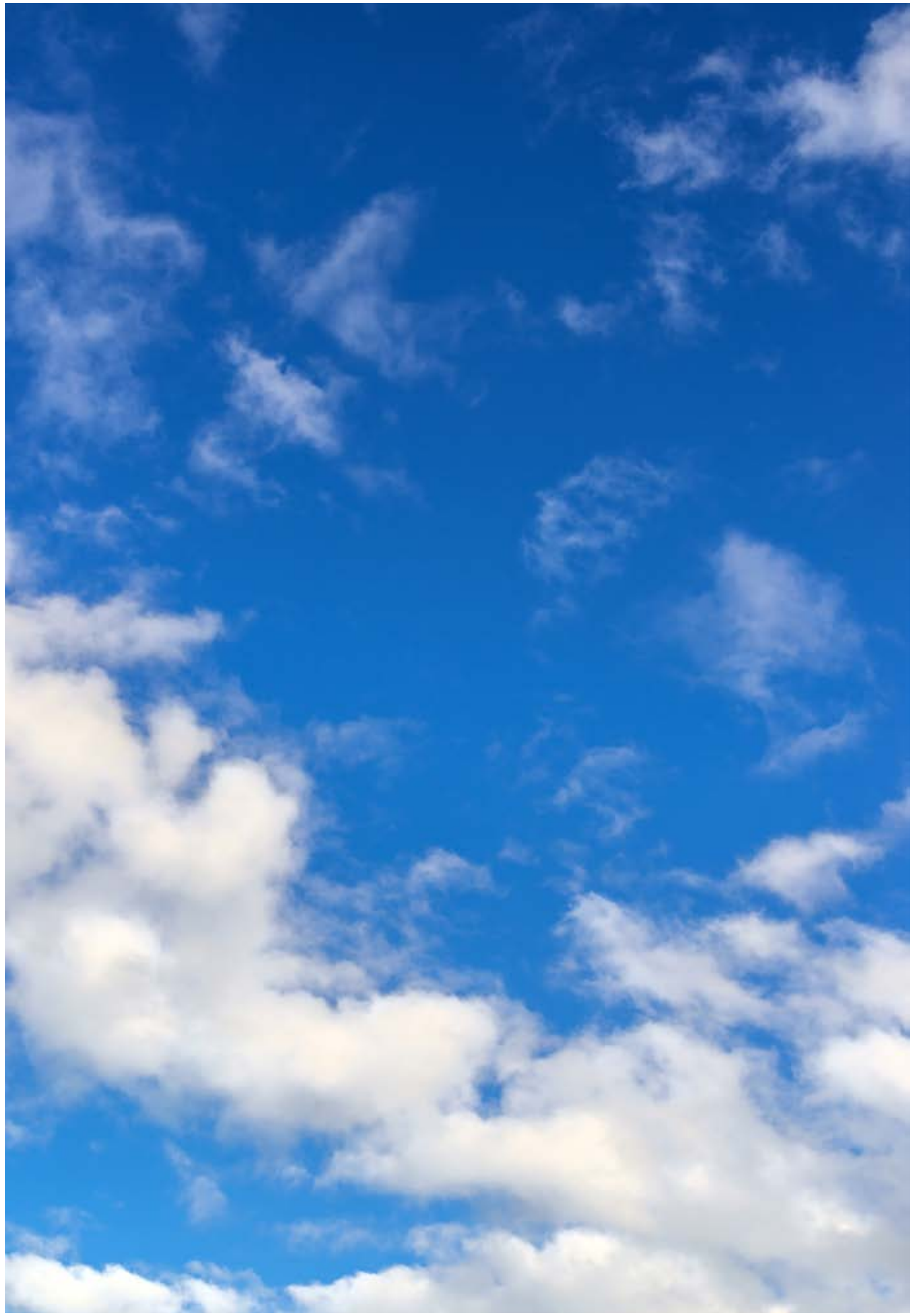
Last year, in Europe EBITDA margin dropped by 1.9 percentage points (pp), largely driven by pressures on both the top line and costs. The biggest year-on-year drop was recorded in the US/Canada (2.3 pp) mainly driven by a large deterioration in the profitability of the major national carriers, mostly due to the increases in fuel cost.

The other world regions have also struggled to maintain profitability, with the same overall downward trend in EBITDA margins during the last few years.

Figure 8. EBITDA Margin by Geography



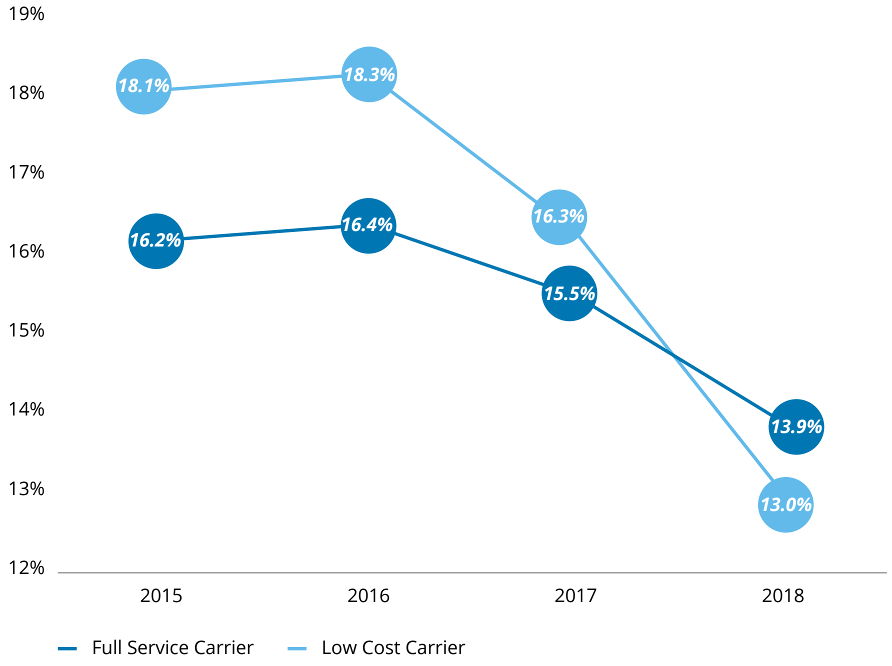
Source: Company financials from S&P Capital IQ



Carrier analysis

We have also noted that Low Cost carriers have been underperforming in the last 4 years, as shown by a 10.4% CAGR reduction in EBITDA margin, compared to only 5.1% CAGR reduction for Full Service carriers. The two groups have gone below 14% EBITDA margin levels in the last year.

Figure 9. EBITDA Margin by Carrier Type



Source: Company financials from S&P Capital IQ

Leverage

In our analysis we calculated leverage as the ratio between Net Debt and Equity. The airline sector appears to be particularly leveraged, having almost 4 times as much net debt as equity. In addition, we can see a worrying trend, with the ratio growing more than 5% CAGR in the last four years.

In a deteriorating market condition – EBITDA margin went down by 5.9% CAGR in the last 4 years – increasing leverage can quickly put airlines under significant financial pressure. More than ever, it is critical to increase free cash balances and deleverage.

It is also interesting to observe that Low Cost carriers have a much lower leverage than Full Service carriers. Due to the aggressive pricing of Low Cost carriers, the market is less inclined to accept a riskier capital structure in the case of budget airlines than in the case of Full Service airlines.

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Figure 10. Airline Sector Leverage Ratio

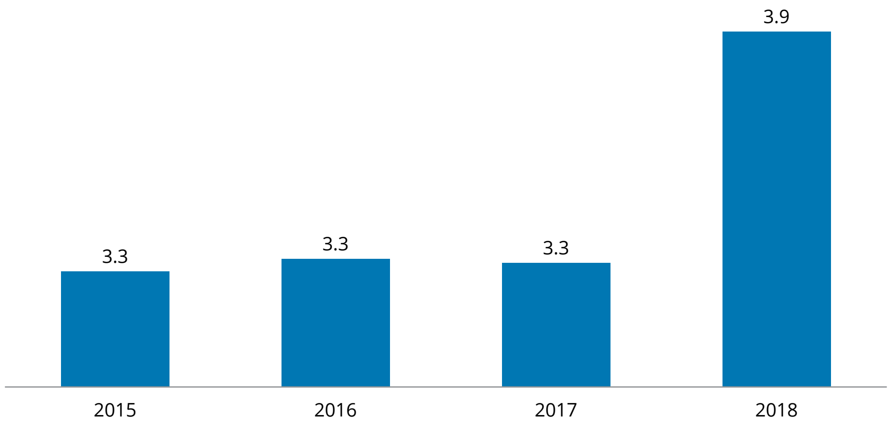
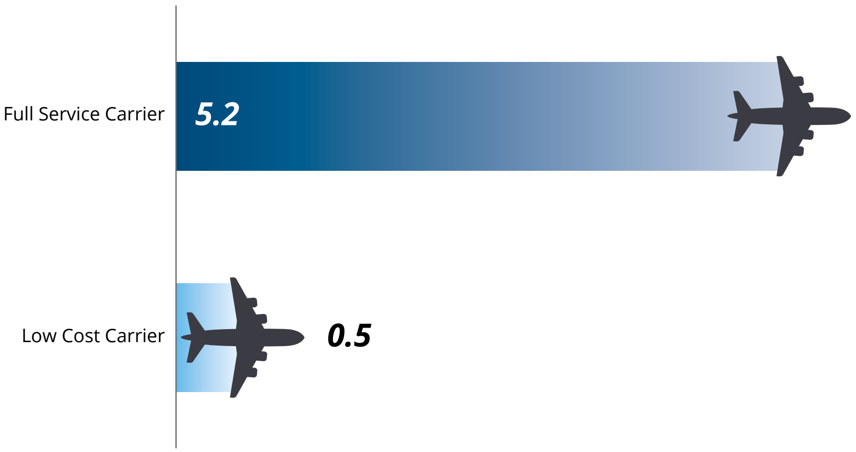


Figure 11. Leverage Ratio by Carrier Type in 2018

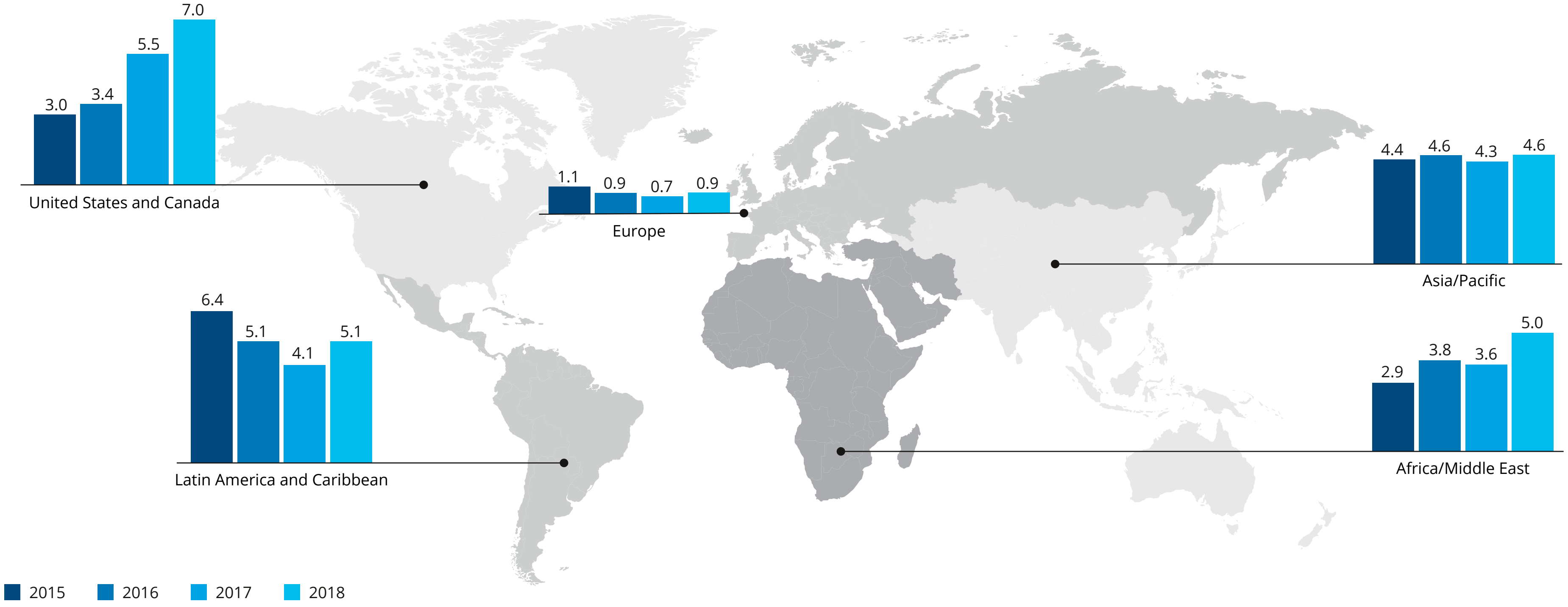


Source: Company financials from S&P Capital IQ

Geographical analysis

In terms of geographical performance, the US/Canada and Europe are at the two ends of the spectrum when it comes to leverage ratio. In Europe, Net Debt to Equity has been hovering around 1:1 for the last four years. This is largely explained by the higher proportion of budget airlines, which, as previously shown, carry a lower ratio than Full Service carriers. Conversely, the North American market is dominated by large Full Service carriers, which have a capital structure significantly skewed towards debt. The trend in North America shows a four-year CAGR of 32.8%, which could quickly get to unsustainable levels if not addressed by either raising equity or embarking on initiatives to boost free cash flows, such as a working capital improvement programme. The other world regions have leverage levels more similar to North America than Europe (although not as high), which also means a potential risk going forward, especially considering that debt tends to be more expensive in such regions.

Figure 12. Leverage Ratio by Geography



Source: Company financials from S&P Capital IQ

Liquidity index

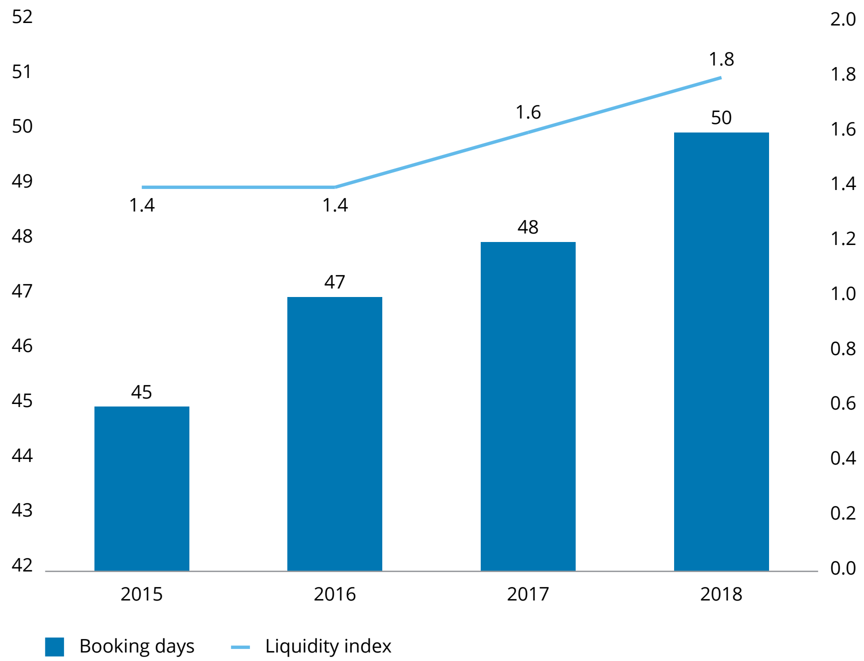
In our analysis we defined a liquidity index calculated as the ratio between Unearned Revenues (a proxy for un-flown tickets) and Cash and Cash-equivalent. The higher the ratio the higher the proportion of free cash made by future bookings. If the value exceeds 1, a carrier does not have enough cash readily available to repay all its customers in case it ceased its operations (e.g. in case of insolvency).

The sector liquidity index in the last year was 1.76, suggesting that globally there is not enough free cash to cover consumers in case of insolvency.

The trend shows an increase in the last 4 years of 8.5% CAGR, mostly driven by a larger growth in Unearned Revenues compared to Cash and Cash-Equivalent.

We also noted that booking days are getting longer, having grown from 45 days in 2015 to 50 days in 2018. Consumers are buying tickets more in advance than they used to 4 years ago. However, the airlines haven't increased their free cash at the same rate, which is making the sector riskier.

Figure 13. Airline Sector Liquidity KPIs



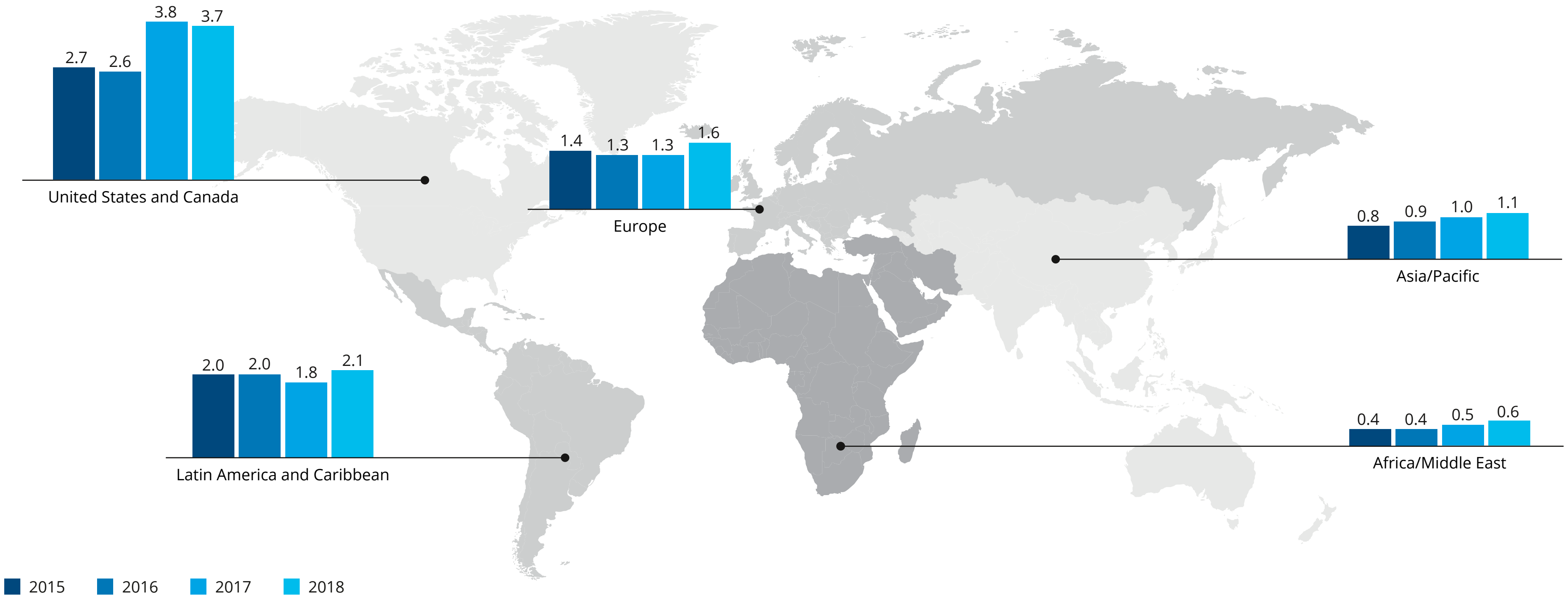
Source: Company financials from S&P Capital IQ

Geographical analysis

Geographically, two regions stand out: North America and Africa/Middle East. In North America, the value of unearned revenues is nearly 4 times the levels of cash and cash equivalents. This value, taken in conjunction with the high leverage of North American airlines, could signal a worrying trend.

On the other hand, Africa/Middle East carriers had a liquidity index of 0.60 last year. Whilst this is the highest it has been in the last four years, it is still comfortably under 1, potentially suggesting an opportunity to invest excess cash in Capex, reduce leverage or return money to shareholders. The other world regions show Asia/Pacific comfortably around 1, Europe at about 1.5, and Latin America & Caribbean around 2, which may create liquidity issues in the near future.

Figure 14. Liquidity Index by Geography

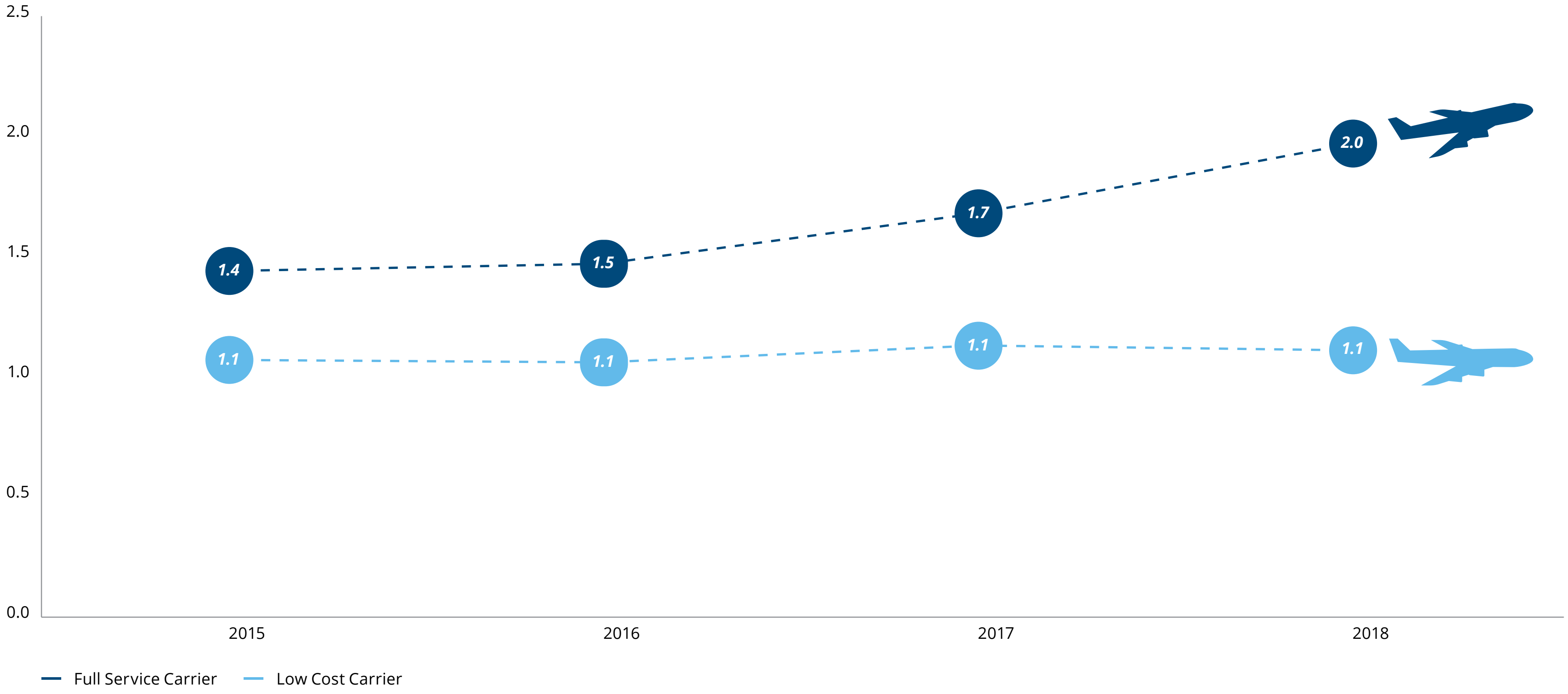


Source: Company financials from S&P Capital IQ

Carrier analysis

Our analysis also shows a clear difference in the liquidity index of Low Cost and Full Service carriers, with the former having a relatively stable ratio of 1.1 and the latter having reached 2.0 last year. In addition, the gap appears to be widening over the last four years, posing questions on the ability of major carriers to sustain the tough market conditions.

Figure 15. Liquidity Index by Carrier Type



Source: Company financials from S&P Capital IQ

Cash Conversion Efficiency (CCE)

Cash Conversion Efficiency (CCE) is a metric which defines how well a company can convert profits into cash flows. In our analysis it is calculated as the ratio between Cash Flows from Operations and EBITDA. Values close to 100% suggest a very strong ability to monetise profits.

Those in excess of 100% suggest a company is generating excess cash by freeing up working capital. Conversely, those below 100% suggest that there has been a greater working capital requirement in the period in question.

It is not surprising to observe that CCE in the airline sector is 97.4%. Airlines' business model consists of collecting payment from passengers months before incurring any operating cost. This results in a very strong net working capital which directly favours cash flows.

Figure 16. CCE > 100%

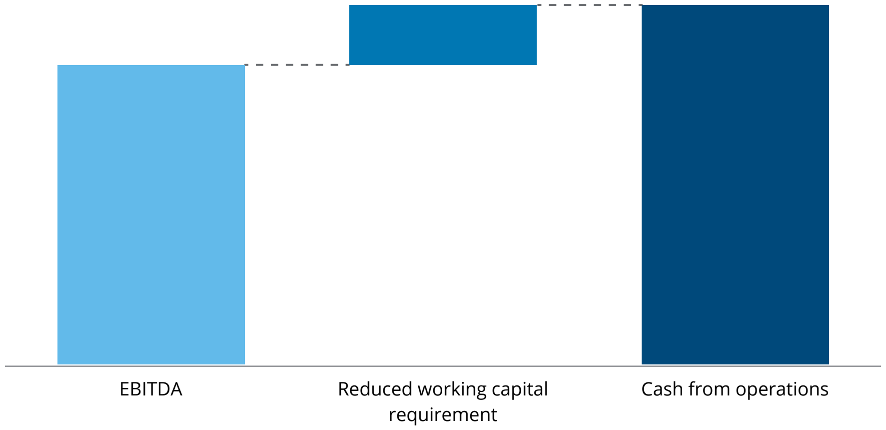
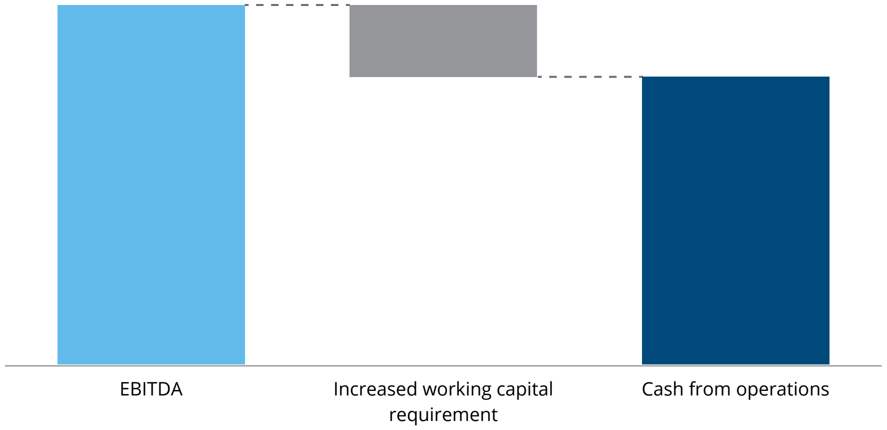


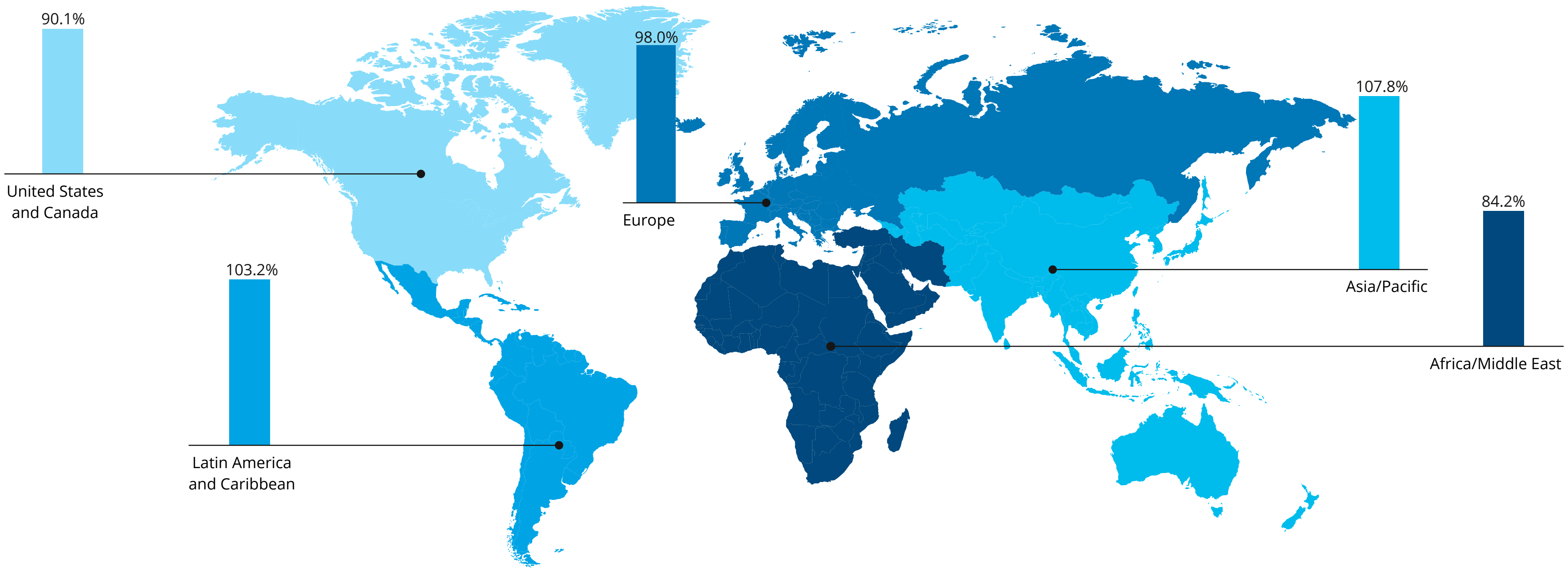
Figure 17. CCE < 100%



However, there is a wide array of performance across geographies...

North American and Africa/Middle Eastern carriers underperformed the rest of the world in the last year, both regions having a CCE of around or below 90%, whilst the other regions are all around 100% or above.

Figure 18. CCE by Geography in 2018

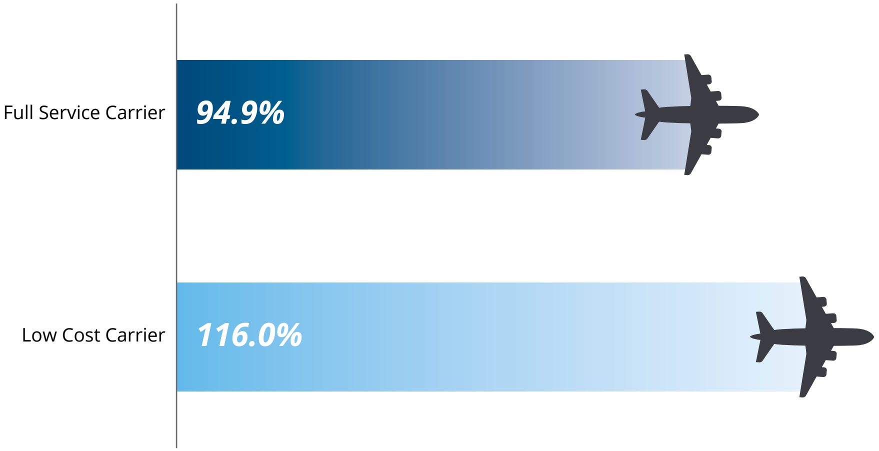


Source: Company financials from S&P Capital IQ

...and across business models

When comparing Full Service vs Low Cost carriers, we see a relevant gap with Low Cost carriers outperforming Full Service airlines by 21.1 percentage points in the last year. The strong performance of budget airlines can be explained by a steady growth in cash flows despite a deterioration in EBITDA.

Figure 19. CCE by Carrier Type in 2018



Source: Company financials from S&P Capital IQ

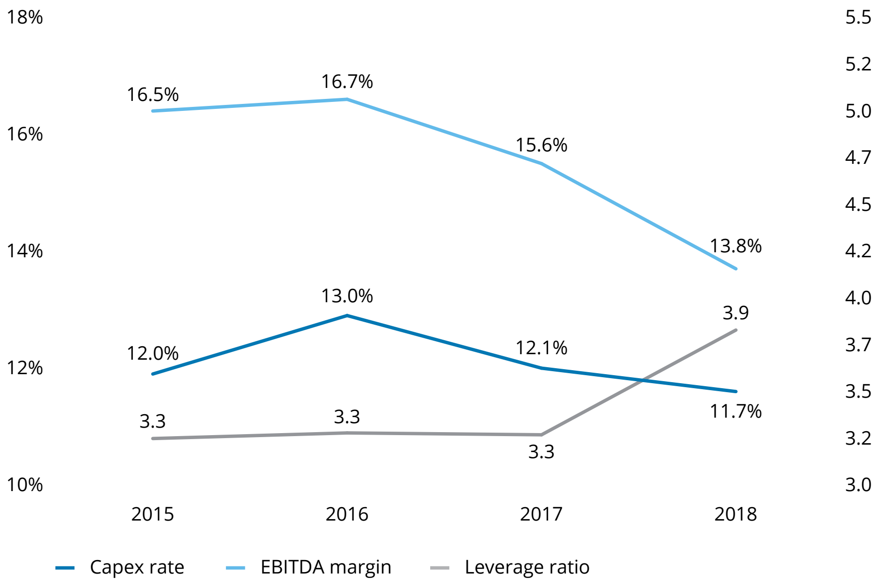
Capital expenditure

In the airline sector, the annual level of capital investment tends to be around 12% of total revenues. It is interesting to note that, in a context of deteriorating margins and declining liquidity, the CAPEX rate has remained largely unchanged in the last 4 years. In such a regulated sector, there is usually a minimum level of CAPEX required to operate in most world regions.

In the recent past, increasing leverage has made this possible, with mounting levels of Net Debt to fund the required maintenance and upgrades. However, this approach is not sustainable in the long term and carriers should seek to source alternative funding to sustain their required CAPEX levels.

It is interesting to note that, in a context of deteriorating margins and declining liquidity, the CAPEX rate has remained largely unchanged in the last 4 years. In such a regulated sector, there is usually a minimum level of CAPEX required to operate in most world regions.

Figure 20. CAPEX rate over the last 4 years



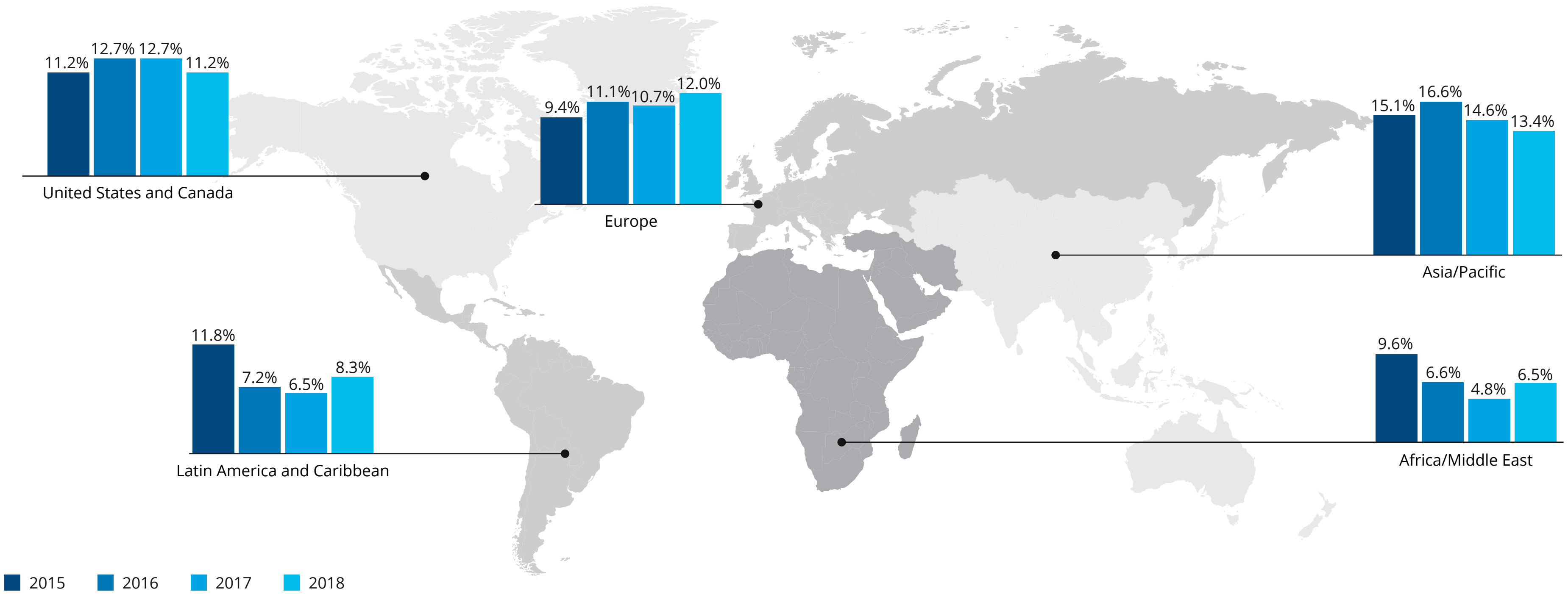
Source: Company financials from S&P Capital IQ

Geographical analysis

Africa/Middle Eastern carriers had the lowest Capex rate last year, with only 6.5% of revenue invested into improving or acquiring new assets, well below the global average of 11.7%. This is reflected in the fact that African/Middle Eastern carriers have the lowest forecast passenger capacity growth for 2019 at 3.7% and 0.6%, respectively for Africa and the Middle East, according to IATA. Latin America & Caribbean also had Capex rates well below the global average during the last few years.

However, the other world regions, have consistently achieved Capex rates around or above the 12% sector benchmark during the same period, demonstrating players' commitment to their minimum required levels of Capex investment.

Figure 21. Capex Rate by Geography

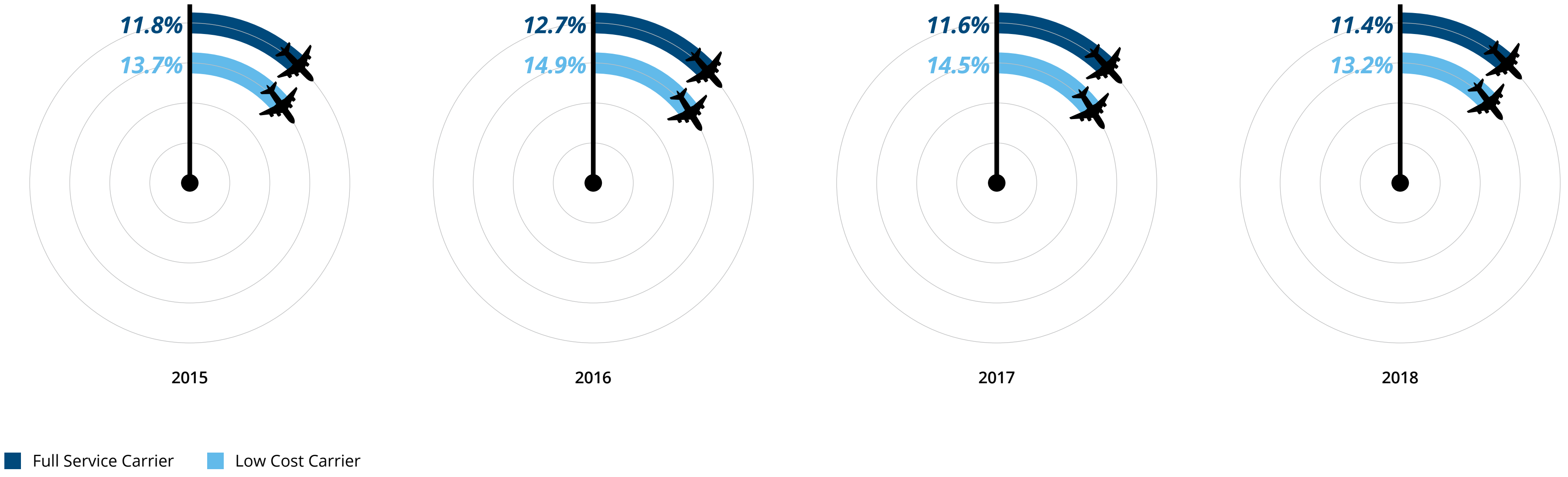


Source: Company financials from S&P Capital IQ

Over the last four years, Low Cost carriers have maintained a CAPEX rate that is about 2 to 3 percentage points higher than Full Service carriers and above the average 12% Capex ratio of the sector.

Full Service carriers however, have reached ratios slightly below 12% in three of the last four years.

Figure 22. Capex Rate by Carrier Type



Source: Company financials from S&P Capital IQ

Our conclusions on the sector's working capital trends

Our conclusions on the sector’s working capital trends

A number of indicators show that the airline sector is under pressure, particularly on liquidity and leverage. Improving cash flows becomes paramount in order to sustain future growth.

- **Days of Sales Outstanding (DSO):** European, Latin American and Africa/Middle Eastern carriers tend to have a much longer DSO than North American and Asian carriers because they are perceived to be riskier due to aspects such as price wars and FX exposure, both of which are larger in such regions.

- **EBITDA margin:** Margins in the airline sector have largely declined during the last four years, which is likely to negatively impact cash flows and put carriers under financial constraints.

- **Leverage ratio:** the sector is significantly leveraged, with a net debt/equity ratio of almost 4x and which has grown more than 5% CAGR in the last four years. In a deteriorating market condition with downward EBITDA margins, increasing leverage can quickly put airlines under significant financial pressure.

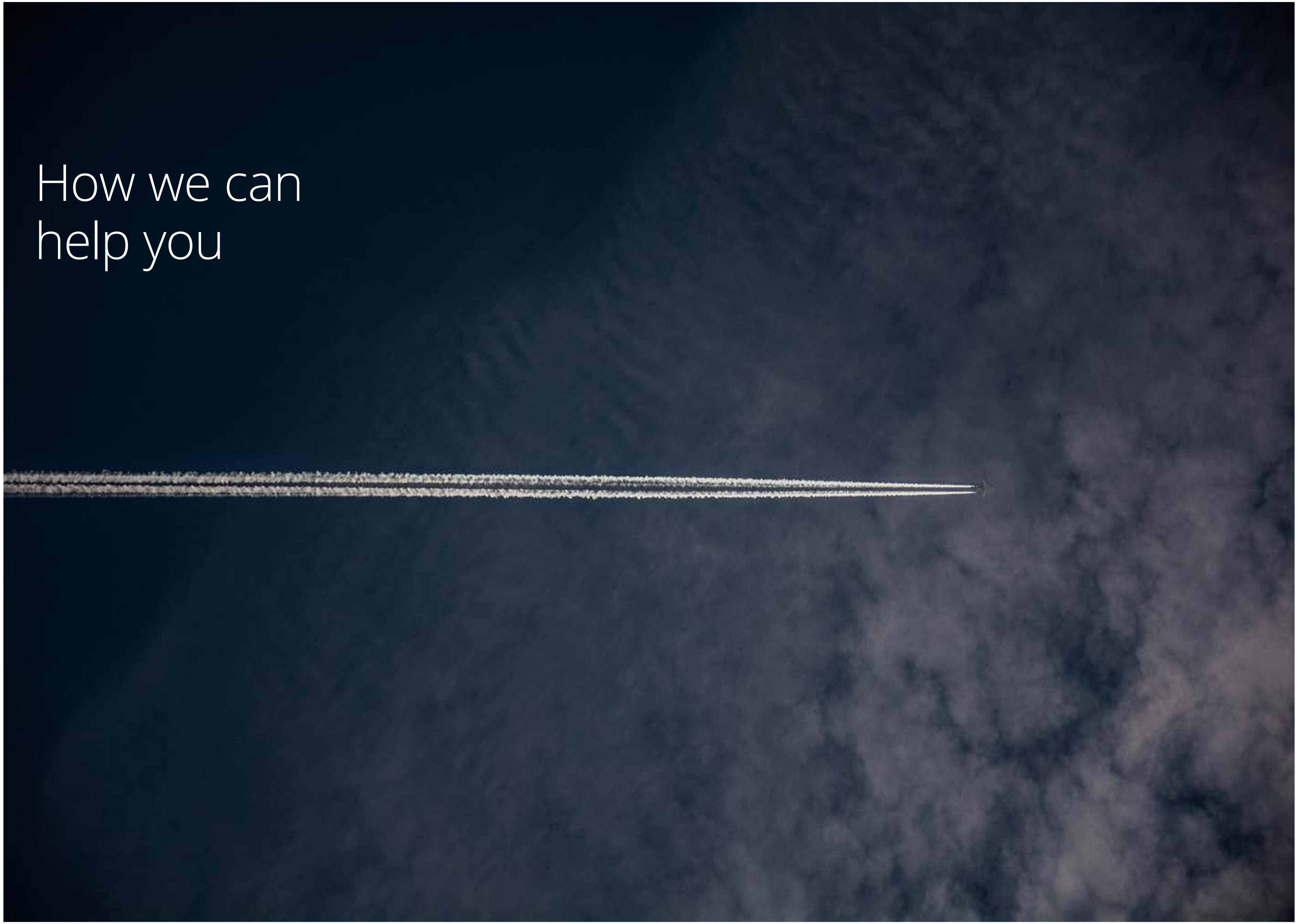
- **Liquidity index:** the sector liquidity index in the last year was 1.76, suggesting that globally there is not enough free cash to cover consumers in case of insolvency. Moreover, there was a significant increase of 8.5% CAGR in the last 4 years, which is making the sector much riskier.

- **Cash Conversion Efficiency (CCE):** North American and Africa/Middle Eastern carriers underperformed the rest of the world in 2018, both having a CCE of around or below 90%, whilst the other regions are all around 100% or above.

- **Capex rate:** despite the current context of deteriorating margins and declining liquidity in the sector, the Capex ratio has remained largely unchanged in the last 4 years. Increasing leverage has made this possible, with higher levels of Net Debt to fund Capex investments, which is not sustainable in the long term.

Given this scenario, airlines must focus on optimising their funding sources in order to de-leverage, either through raising new shareholder equity or through embarking on cash and working capital optimisation initiatives to boost free cash flows.

Our experience shows that carriers can improve their free cash by 20% to 40% through targeted working capital initiatives.



How we can help you

Deloitte's Value Creation Services ('VCS')

Our VCS team specialises in delivering sustainable and pragmatic EBITDA and cash benefits at pace using a 'Private Equity Lens' approach.

We are **pragmatic** and deploy a **private equity lens** to performance improvement, we do NOT simply produce a report of recommendations

Our **dynamic and interactive analytical working capital tools** give you deep insights into cash performance

We are **dedicated, operational and financial specialists** in turnaround management, cost reduction, cash management and working capital improvement

Our clients achieve measurable, **sustainable cash and EBITDA improvements**, typically **equivalent to 5-20% of annual revenue**

We are **implementation and change management specialists**, with deep situational and sector experience

Over **250 operations practitioners** across Europe

We have **extensive experience across multiple sectors** such as: business services, consumer business, retail, media, technology, telecoms, and manufacturing

Deloitte's VCS: cash & working capital optimisation

Improve cash flows in the airline sector by tackling working capital.

Our **cash & working capital proposition** is designed to help airlines optimise cash flows without compromising on growth.

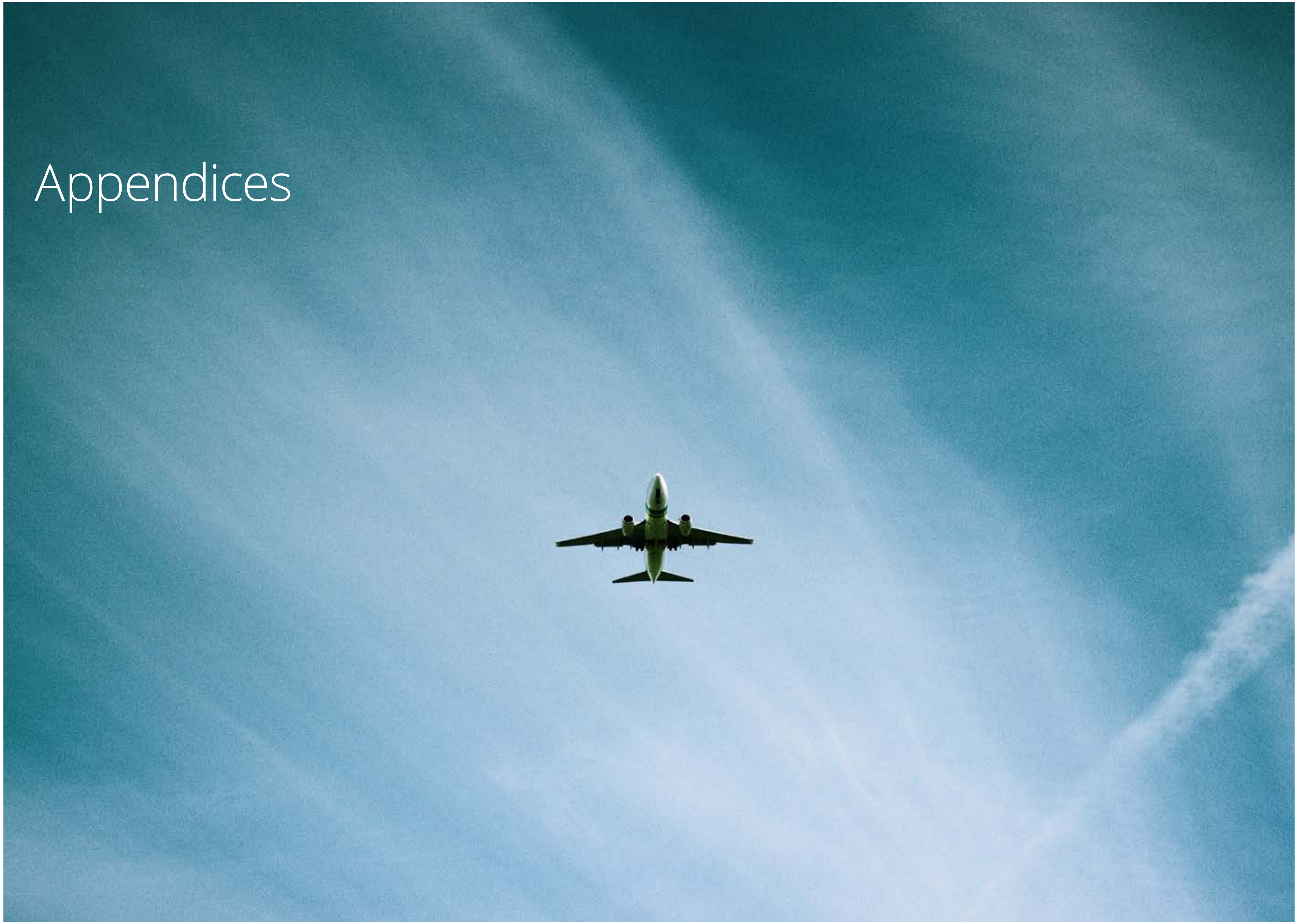
Our track record shows that a company can increase its cash balances between **20% and 40%** by addressing **commercial terms, process improvement and compliance**.

Our functional expertise, together with our deep sector knowledge, allows us to quickly identify airlines' specific levers to reduce working capital and release cash in the organisation.

Figure 23. Top 5 levers to improve cash flows in the airline sector

- Renegotiate payment terms and exposure calculation method with your card acquirer
- Review the ticketing time limit policy of published and private fares
- Review existing security requirements (e.g. cash deposit or Letters of Credit) with your suppliers
- Review your payment run policy
- Define and implement a robust supplier payment terms policy

Appendices



Appendices

Basis of calculations

This study uses the metrics below to measure the financial performance of the Airline sector. All financial information is publicly available and a variable sample has been used for each metric based on the completeness of the information available.

Metric	Description	Basis of calculation	Size of sample (number of companies)
Days Sales Outstanding (DSO)	DSO is a measure of the average number of days that it takes a company to collect payment after a sale has been made	$\frac{\textit{Accounts Receivable}}{\textit{Revenue}} \times 365$	143
EBITDA Margin	EBITDA (Earnings before interest, tax, depreciation and amortisation) margin is a measure of a company's operating profitability as a percentage of its revenue	$\frac{\textit{EBITDA}}{\textit{Revenue}}$	132
Leverage Ratio	Leverage is the ratio of a company's debt to its equity	$\frac{\textit{Net debt}}{\textit{Equity}}$	144
Liquidity Index	The liquidity index is a measure of the cash available to repay customers using Unearned revenues as a proxy for un-flown tickets	$\frac{\textit{Unearned Revenue}}{\textit{Cash and Cash Equivalents}}$	88
Cash Conversion Efficiency (CCE)	CCE is a measure of how efficiently a company is able to convert its profits into cash	$\frac{\textit{Cash from Operating Activities}}{\textit{EBITDA}}$	95
CAPEX Rate	The CAPEX rate shows the extent to which a company is re-investing its revenue back into productive assets	$\frac{\textit{Captial Expenditure}}{\textit{Revenue}}$	93
Free Cash Ratio	Free Cash Ratio measures the level of a company's liquidity in relation to its sales and it is calculated as the value of free cash divided by revenues	$\frac{\textit{Free Cash}}{\textit{Revenues}}$	137

DSO by geography and carrier type

Geographical	Count	DSO 2015	DSO 2016	DSO 2017	DSO 2018	Movement (%)	4 Year CAGR (%)
United States and Canada	13	13	14	15	14	*8.3%*	*2.7%*
Europe	64	25	28	29	30	*17.7%*	*5.6%*
Africa/Middle East	13	21	21	23	31	*48.3%*	*14.0%*
Asia/Pacific	44	20	21	20	21	*1.2%*	*0.4%*
Latin America and Caribbean	9	22	30	31	28	*30.6%*	*9.3%*
Total	**143**	**19**	**22**	**22**	**22**	***13.7%***	***4.4%***

Carrier	Count	DSO 2015	DSO 2016	DSO 2017	DSO 2018	Movement (%)	4 Year CAGR (%)
Full Service Carrier	102	20	22	22	23	*12.0%*	*3.9%*
Low Cost Carrier	41	13	15	17	17	*33.5%*	*10.1%*
Total	**143**	**19**	**21**	**22**	**22**	***13.7%***	***4.4%***

EBITDA margin by geography and carrier type

Geographical	Count	Margin 2015	Margin 2016	Margin 2017	Margin 2018	Movement (%)	4 Year CAGR (%)
United States and Canada	13	*20.8%*	*20.4%*	*17.7%*	*15.4%*	*(26.1)%*	*(9.6)%*
Europe	54	*11.7%*	*13.8%*	*14.2%*	*12.3%*	*5.1%*	*1.7%*
Africa/Middle East	13	*15.1%*	*10.0%*	*12.6%*	*12.1%*	*(19.8)%*	*(7.1)%*
Asia/Pacific	44	*16.6%*	*16.9%*	*15.4%*	*13.9%*	*(16.3)%*	*(5.8)%*
Latin America and Caribbean	8	*11.6%*	*13.7%*	*13.8%*	*11.6%*	*(0.2)%*	*(0.1)%*
Total	**132**	***16.5%***	***16.7%***	***15.6%***	***13.8%***	***(17.7)%***	***(5.6)%***

Carrier	Count	Margin 2015	Margin 2016	Margin 2017	Margin 2018	Movement (%)	4 Year CAGR (%)
Full Service Carrier	91	*16.2%*	*16.4%*	*15.5%*	*13.9%*	*(14.5)%*	*(5.1)%*
Low Cost Carrier	41	*18.1%*	*18.3%*	*16.3%*	*13.0%*	*(28.2)%*	*(10.4)%*
Total	**132**	***16.5%***	***16.7%***	***15.6%***	***13.8%***	***(16.7)%***	***(5.9)%***

Source: Company financials from S&P Capital IQ

Leverage ratio by geography and carrier type

Geographical	Count	Leverage 2015	Leverage 2016	Leverage 2017	Leverage 2018	Movement (%)	4 Year CAGR (%)
United States and Canada	13	3.0	3.4	5.5	7.0	*134.5%*	*32.8%*
Europe	66	1.1	0.9	0.7	0.9	*(21.6)%*	*(7.8)%*
Africa/Middle East	13	2.9	3.8	3.6	5.0	*73.2%*	*20.1%*
Asia/Pacific	44	4.4	4.6	4.3	4.6	*4.3%*	*1.4%*
Latin America and Caribbean	8	6.4	5.1	4.1	5.1	*(20.1)%*	*(7.2)%*
Total	**144**	**3.3**	**3.3**	**3.3**	**3.9**	***17.7%***	***5.6%***

Carrier	Count	Leverage 2015	Leverage 2016	Leverage 2017	Leverage 2018	Movement (%)	4 Year CAGR (%)
Full Service Carrier	102	4.0	4.1	4.1	5.2	*30.1%*	*9.2%*
Low Cost Carrier	42	0.8	0.8	0.7	0.5	*(32.2)%*	*(12.1)%*
Total	**144**	**3.3**	**3.3**	**3.3**	**3.9**	***17.7%***	***5.6%***

Liquidity index by geography and carrier type

Geographical	Count	Liquidity Index 2015	Liquidity Index 2016	Liquidity Index 2017	Liquidity Index 2018	Movement (%)	4 Year CAGR (%)
United States and Canada	11	2.7	2.6	3.8	3.7	*40.4%*	*12.0%*
Europe	22	1.4	1.3	1.3	1.6	*16.7%*	*5.3%*
Africa/Middle East	11	0.4	0.4	0.5	0.6	*56.0%*	*16.0%*
Asia/Pacific	34	0.8	0.9	1.0	1.1	*35.3%*	*10.6%*
Latin America and Caribbean	10	2.0	2.0	1.8	2.1	*5.5%*	*1.8%*
Total	**88**	**1.37**	**1.39**	**1.57**	**1.76**	***27.9%***	***8.5%***

Carrier	Count	Liquidity Index 2015	Liquidity Index 2016	Liquidity Index 2017	Liquidity Index 2018	Movement (%)	4 Year CAGR (%)
Full Service Carrier	66	1.4	1.5	1.7	2.0	*36.7%*	*11.0%*
Low Cost Carrier	22	1.1	1.1	1.1	1.1	*4.0%*	*1.3%*
Total	**88**	**1.4**	**1.4**	**1.6**	**1.8**	***27.9%***	***8.5%***

Source: Company financials from S&P Capital IQ

CCE by geography and carrier type

Geographical	Count	CCE 2015	CCE 2016	CCE 2017	CCE 2018	Movement (%)	4 Year CAGR (%)
United States and Canada	13	*73.8%*	*73.9%*	*70.3%*	*90.1%*	*22.0%*	*6.9%*
Europe	20	*94.6%*	*81.5%*	*105.0%*	*98.0%*	*3.7%*	*1.2%*
Africa/Middle East	13	*94.5%*	*99.1%*	*118.0%*	*84.2%*	*(10.9)%*	*(3.8)%*
Asia/Pacific	41	*112.4%*	*105.3%*	*102.5%*	*107.8%*	*(4.1)%*	*(1.4)%*
Latin America and Caribbean	8	*94.7%*	*84.4%*	*98.6%*	*103.2%*	*8.9%*	*2.9%*
Total	**95**	***92.1%***	***87.6%***	***92.4%***	***98.0%***	***6.4%***	***2.1%***

Carrier	Count	CCE 2015	CCE 2016	CCE 2017	CCE 2018	Movement (%)	4 Year CAGR (%)
Full Service Carrier	62	92.5%	86.8%	90.3%	94.9%	*2.5%*	*0.8%*
Low Cost Carrier	33	89.9%	91.9%	103.0%	116.0%	*29.0%*	*8.8%*
Total	**95**	**92.1%**	**87.6%**	**92.4%**	**98.0%**	***6.4%***	***2.1%***

Capex rate by geography and carrier type

Geographical	Count	Capex Ratio 2015	Capex Ratio 2016	Capex Ratio 2017	Capex Ratio 2018	Movement (%)	4 Year CAGR (%)
United States and Canada	13	*11.2%*	*12.7%*	*12.7%*	*11.2%*	*0.2%*	*0.1%*
Europe	20	*9.4%*	*11.1%*	*10.7%*	*12.0%*	*28.6%*	*8.7%*
Africa/Middle East	12	*9.6%*	*6.6%*	*4.8%*	*6.5%*	*(32.7)%*	*(12.4)%*
Asia/Pacific	41	*15.1%*	*16.6%*	*14.6%*	*13.4%*	*(11.2)%*	*(3.9)%*
Latin America and Caribbean	7	*11.8%*	*7.2%*	*6.5%*	*8.3%*	*(29.8)%*	*(11.1)%*
Total	**93**	***12.0%***	***13.0%***	***12.1%***	***11.7%***	***(2.8)%***	***(1.0)%***

Carrier	Count	Capex Ratio 2015	Capex Ratio 2016	Capex Ratio 2017	Capex Ratio 2018	Movement (%)	4 Year CAGR (%)
Full Service Carrier	61	*11.8%*	*12.7%*	*11.6%*	*11.4%*	*(3.0)%*	*(1.0)%*
Low Cost Carrier	32	*13.7%*	*14.9%*	*14.5%*	*13.2%*	*(3.7)%*	*(1.2)%*
Total	**93**	***12.0%***	***13.0%***	***12.1%***	***11.7%***	***(2.8)%***	***(1.0)%***

Source: Company financials from S&P Capital IQ

Free Cash Ratio

Geographical	Count	Free Cash 2015	Free Cash 2016	Free Cash 2017	Free Cash 2018	Movement (%)	4 Year CAGR (%)
United States and Canada	13	*5.8%*	*6.2%*	*4.5%*	*4.6%*	*(19.7)%*	*(7.0)%*
Europe	58	*10.1%*	*11.5%*	*12.6%*	*11.6%*	*14.5%*	*4.6%*
Africa/Middle East	13	*13.4%*	*12.8%*	*11.0%*	*9.4%*	*(30.0)%*	*(11.2)%*
Asia/Pacific	44	*13.4%*	*12.6%*	*12.6%*	*11.1%*	*(16.9)%*	*(6.0)%*
Latin America and Caribbean	9	*10.1%*	*11.6%*	*12.1%*	*9.4%*	*(6.7)%*	*(2.3)%*
Total	**137**	***10.0%***	***10.3%***	***10.0%***	***9.1%***	***(9.5)%***	***(3.3)%***

Carrier	Count	Free Cash 2015	Free Cash 2016	Free Cash 2017	Free Cash 2018	Movement (%)	4 Year CAGR (%)
Full Service Carrier	95	*9.1%*	*9.3%*	*9.0%*	*7.7%*	*(15.4)%*	*(5.4)%*
Low Cost Carrier	42	*15.6%*	*15.8%*	*15.6%*	*16.4%*	*5.1%*	*1.7%*
Total	**137**	***10.0%***	***10.3%***	***10.0%***	***9.1%***	***(9.5)%***	***(3.3)%***

Source: Company financials from S&P Capital IQ

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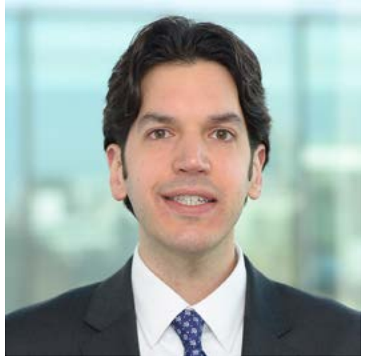

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Notes

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