

The Financial Mathematics and Computation Cluster (FMC) was established in 2009. FMC is funded by Science Foundation Ireland and Industry. Further details about FMC are in the appendix and <http://www.fmc-cluster.org/>



Note: Databases are located in standalone computers in the Financial Data room.

The Airline Analyst (TAA)

The Airline Analyst (TAA) provides financial and operational data of more than 200 airlines around the world, extending from the year 2005 onwards. TAA's offerings include three features: Airline Listing, Portfolios and Comparisons.

Logging in to TAA:

1. TAA can be accessed online using its website: www.theairlineanalyst.com
2. You can log-in using UCD's network (Eduroam, UCD Wireless or for remote access, using UCD's VPN), using your ucd.ie or ucdconnect.ie account.
3. For first-time users, you would first need to reset the password of your ucd.ie or ucdconnect.ie account on TAA by clicking on "Forgot your password?"

The screenshot shows the homepage of the Airfinance Journal website. At the top left is the logo for "AIRFINANCE JOURNAL THE AIRLINE ANALYST". A navigation menu contains links for "Airlines", "Portfolios", "Comparisons", "Product information", "Financial ratings", "Contact", and "About Us".

A prominent message box on the left states: "Your System Status WE'RE SORRY! You need to update your Flash Player." It includes a "Get ADOBE FLASH PLAYER" button and an "IMPORTANT" note: "After installing the required upgrade please reload this browser window to view the video player."

The main heading reads "The powerful airline financial data and analysis service". Below it, a paragraph states: "The Airline Analyst is a powerful online financial data and analysis service from the publishers of Airfinance Journal. Gathering airline financial data, adjusting it and converting it into a usable format is both time consuming and laborious. So The Airline Analyst does the work for you." A section titled "What does The Airline Analyst include?" is partially visible.

On the right side, there is a "Login" section with a text input field containing "mohamad.faur@ucd.ie", a password field with masked characters, and two checkboxes: "I have read and agree to the Terms and Conditions and Privacy Policy." and "Stay signed in". A "Forgot your password?" link is highlighted with a red box. Below these is a "Login" button. At the bottom of the login section is a "Request a demo" button.

Airline Listing

The 'Airlines Listing' feature provides key financial parameters for all airlines included in TAA. Information available includes:

- Income Statement
- Statement of OCI
- Balance Sheet
- Cash Flow Statement
- Common Size Financial Statements
- Revenue Analysis
- Cost Analysis
- Key ratios to go with each statement

Airlines can be filtered by country or airline name. Furthermore, airlines can be sorted by financial characteristics such as Market Cap, Revenue, EBITDAR, Net Income, etc.



Airlines	Portfolios	Comparisons	Product information	Financial ratings	Contact	About Us																																																																																																																																																																
<div style="display: flex; justify-content: space-between;"> Airlines listing Latest updates </div> <div style="margin-top: 10px;"> Filter airlines by <div style="display: flex; align-items: center;"> <div style="border: 1px solid #ccc; padding: 2px 5px; margin-right: 5px;">Please select</div> <div style="margin-right: 5px;">Airline name</div> <div style="border: 1px solid #ccc; flex-grow: 1; margin-right: 5px;"></div> <div style="background-color: #007bff; color: white; padding: 2px 5px; margin-left: 5px;">Filter</div> </div> <div style="text-align: right; margin-top: 5px;"> </div> </div> <p style="font-size: 0.8em; margin-top: 5px;">Data is dependent on User Settings (other than Spot/Historic exchange rates - data is calculated at Spot rates)</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 20%;">Airline name</th> <th style="width: 10%;">Country/Region</th> <th style="width: 10%;">Market Cap (USDm)</th> <th style="width: 10%;">Revenue (USDm)</th> <th style="width: 10%;">EBITDAR (USDm)</th> <th style="width: 10%;">EBITDAR Margin (%)</th> <th style="width: 10%;">Adjusted Net Debt/EBITDAR (x)</th> <th style="width: 10%;">Adjusted Net Debt/Equity (x)</th> <th style="width: 10%;">Net Income (USDm)</th> <th style="width: 10%;">Financial Period Ending</th> </tr> </thead> <tbody> <tr><td>ABX Air, Inc.</td><td>USA</td><td>-</td><td>238</td><td>52</td><td>22.0</td><td>3.4</td><td>0.8</td><td>11</td><td>31-Dec-18</td></tr> <tr><td>Adria Airways</td><td>Slovenia</td><td>-</td><td>174</td><td>25</td><td>14.3</td><td>8.8</td><td>75.5</td><td>-6</td><td>31-Dec-17</td></tr> <tr><td>Aegean Airlines</td><td>Greece</td><td>710</td><td>1,328</td><td>270</td><td>20.3</td><td>4.5</td><td>3.9</td><td>75</td><td>31-Dec-18</td></tr> <tr><td>Aer Lingus</td><td>Ireland</td><td>-</td><td>2,226</td><td>540</td><td>24.2</td><td>3.5</td><td>3.9</td><td>285</td><td>31-Dec-18</td></tr> <tr><td>Aeroflot - RUB</td><td>Russia</td><td>2,049</td><td>9,825</td><td>1,949</td><td>19.8</td><td>6.7</td><td>17.8</td><td>106</td><td>31-Dec-18</td></tr> <tr><td>Aeroflot - USD</td><td>Russia</td><td>2,049</td><td>9,136</td><td>1,642</td><td>18.0</td><td>4.5</td><td>4.5</td><td>252</td><td>31-Dec-13</td></tr> <tr><td>Aerolineas Argentinas</td><td>Argentina</td><td>-</td><td>906</td><td>-58</td><td>-6.4</td><td>-20.4</td><td>-</td><td>-245</td><td>31-Dec-18</td></tr> <tr><td>Aigle Azur (P)</td><td>France</td><td>-</td><td>371</td><td>19</td><td>5.2</td><td>10.8</td><td>26.1</td><td>-11</td><td>31-Mar-13</td></tr> <tr><td>Air Algerie</td><td>Algeria</td><td>-</td><td>812</td><td>114</td><td>14.1</td><td>6.1</td><td>1.0</td><td>-3</td><td>31-Dec-16</td></tr> <tr><td>Air Arabia</td><td>UAE-Sharjah</td><td>2,020</td><td>1,140</td><td>325</td><td>28.5</td><td>3.2</td><td>0.8</td><td>-166</td><td>31-Dec-18</td></tr> <tr><td>Air Astana</td><td>Kazakhstan</td><td>-</td><td>840</td><td>133</td><td>15.9</td><td>6.5</td><td>9.7</td><td>5</td><td>31-Dec-18</td></tr> <tr><td>Air Belgium</td><td>Belgium</td><td>-</td><td>-</td><td>-16,381</td><td>-</td><td>-1.0</td><td>-</td><td>-20,171</td><td>31-Dec-18</td></tr> <tr><td>Air Berlin</td><td>England</td><td>1</td><td>4,179</td><td>354</td><td>8.5</td><td>21.1</td><td>-</td><td>-890</td><td>31-Dec-16</td></tr> <tr><td>Air Busan</td><td>Korea</td><td>240</td><td>586</td><td>95</td><td>17.2</td><td>5.9</td><td>4.4</td><td>17</td><td>31-Dec-18</td></tr> <tr><td>Air Canada International</td><td>New Zealand</td><td>-</td><td>204</td><td>20</td><td>10.0</td><td>1.7</td><td>2.0</td><td>1</td><td>31-Dec-18</td></tr> </tbody> </table>							Airline name	Country/Region	Market Cap (USDm)	Revenue (USDm)	EBITDAR (USDm)	EBITDAR Margin (%)	Adjusted Net Debt/EBITDAR (x)	Adjusted Net Debt/Equity (x)	Net Income (USDm)	Financial Period Ending	ABX Air, Inc.	USA	-	238	52	22.0	3.4	0.8	11	31-Dec-18	Adria Airways	Slovenia	-	174	25	14.3	8.8	75.5	-6	31-Dec-17	Aegean Airlines	Greece	710	1,328	270	20.3	4.5	3.9	75	31-Dec-18	Aer Lingus	Ireland	-	2,226	540	24.2	3.5	3.9	285	31-Dec-18	Aeroflot - RUB	Russia	2,049	9,825	1,949	19.8	6.7	17.8	106	31-Dec-18	Aeroflot - USD	Russia	2,049	9,136	1,642	18.0	4.5	4.5	252	31-Dec-13	Aerolineas Argentinas	Argentina	-	906	-58	-6.4	-20.4	-	-245	31-Dec-18	Aigle Azur (P)	France	-	371	19	5.2	10.8	26.1	-11	31-Mar-13	Air Algerie	Algeria	-	812	114	14.1	6.1	1.0	-3	31-Dec-16	Air Arabia	UAE-Sharjah	2,020	1,140	325	28.5	3.2	0.8	-166	31-Dec-18	Air Astana	Kazakhstan	-	840	133	15.9	6.5	9.7	5	31-Dec-18	Air Belgium	Belgium	-	-	-16,381	-	-1.0	-	-20,171	31-Dec-18	Air Berlin	England	1	4,179	354	8.5	21.1	-	-890	31-Dec-16	Air Busan	Korea	240	586	95	17.2	5.9	4.4	17	31-Dec-18	Air Canada International	New Zealand	-	204	20	10.0	1.7	2.0	1	31-Dec-18
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Airline-specific data includes an overview, Analyst comments, Company structure and management team, and up-to-date news about the airline.

ABX Air, Inc.

Overview | Financial statement analysis | Other financial info | Operations, revenue and cost analysis | Charts

General | Financial overview | Update history

Financial year-end : 31-Dec
 Accounting standards : N/A
 Auditor : N/A
 Reporting currency : USD

- Airline overview
- Analyst comments
- Company structure
- Management team
- Other information
- News

Financial data can then be customized, by picking the particular financial statements (Income statement, Cash flow statement, Balance Sheet, etc.), period start, and period end. The same can then be downloaded as PDF or Excel, or printed.

ABX Air, Inc.

Overview | Financial statement analysis | Other financial info | Operations, revenue and cost analysis | Charts

LTM | Income statement | Statement of OCI | Balance sheet | Cash flow statement | Statement of changes in equity

Statements to report: Please choose | Period start | Period end | Show

PDF | XLS | Print | Settings | Search

ABX Air, Inc. - Income Statement								
	Ave of 5 Latest Periods Unconsol. USDm	Annual 31-Dec-18 Unconsol. USDm	Annual 31-Dec-17 Unconsol. USDm	Annual 31-Dec-16 Unconsol. USDm	Annual 31-Dec-15 Unconsol. USDm	Annual 31-Dec-14 Unconsol. USDm	Annual 31-Dec-13 Unconsol. USDm	Annual 31-Dec-12 Unconsol. USDm
Passenger Revenue	-	-	-	-	-	-	-	-
Cargo Revenue	279.8	231.6	316.6	303.4	269.5	278.1	262.8	
Other Revenue	12.6	6.6	7.1	9.1	12.4	28.0	32.8	
Total Cargo & Other Revenue	292.5	238.2	323.6	312.5	281.9	306.1	295.7	
Total Revenue	292.5	238.2	323.6	312.5	281.9	306.1	295.7	
% inc / (dec) to previous period	-4.2%	-26.4%	3.6%	10.9%	-7.9%	3.5%	0.1%	
Employee Costs	-95.1	-87.9	-104.0	-112.6	-87.3	-83.7	-82.7	
Fuel and oil	-28.0	-4.7	-51.7	-42.9	-19.4	-21.1	-4.8	
Maintenance, materials & engineering	-73.8	-67.2	-73.4	-81.9	-74.0	-72.4	-75.2	
Landing fees, en route & other variable charges	-4.3	-2.0	-5.4	-4.9	-4.5	-4.9	-6.8	

Portfolios:

The portfolio functionality allows the user to look into aggregate data for a select group of airlines. This portfolio can be saved for periodic monitoring. The data available for Portfolios is similar to that provided for individual airlines in “Airline Listing”

The screenshot shows the 'Create portfolio' interface. At the top, there is a navigation bar with tabs: Airlines, Portfolios (highlighted), Comparisons, Product information, Financial ratings, Contact, and About Us. Below the navigation bar, the 'Create portfolio' section is visible. It includes a 'Portfolio name' input field with a red asterisk. Below the input field, there are two columns of airline names, each with a 'View all' link. The left column lists airlines from ABX Air, Inc. to Air Berlin. The right column is empty. At the bottom, there are buttons for 'Select all', 'Clear All', 'Add', 'Remove', 'Select all', 'Clear all', and 'Save'.

Comparison:

The Comparison functionality allows the user to compare financial and operational performance between different individual airlines. Similar to “Portfolios”, the same can be saved by the user for regular monitoring.

References:

- **The airline analyst introduction:**
<http://link.brightcove.com/services/player/bcpid4773928463001?bctid=4581617790001>
- **Customizing your data:**
<http://link.brightcove.com/services/player/bcpid4773928463001?bctid=4581571280001>
- **Analysing an individual airline:**
<http://link.brightcove.com/services/player/bcpid4773928463001?bctid=4581571281001>



Industry

FMC² has developed successful research collaborations with international and domestic financial services companies and organisations. These help ensure the industry relevance of FMC²'s research.

FMC² works with multiple external partners including Bank of Ireland, Deloitte Ireland, Citibank Europe, The Institute of Banking, Avolon, AerCap, GECAS, SNECMA, SMBC Aviation Capital and KPMG Ireland.

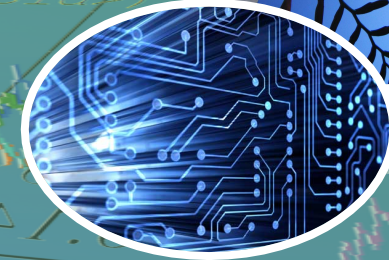
The formal collaboration between this research cluster and the private sector leads creates a benefit-in-kind situation where company sponsorship creates funding for research projects. In turn the companies benefit from research expertise from FMC² members and access to a pipeline of trained quality researchers.

Who are we?

The academic principal investigators and funded investigators involved are:

- John Cotter (Director, UCD)
- Don Bredin (UCD)
- Gregory Connor (Maynooth University)
- Paolo Guasoni (DCU)
- Julie Byrne (UCD)
- Thomas Conlon (UCD)
- Cal Muckley (UCD)
- Conall O'Sullivan (UCD)

The cluster supports a research cluster manager and a team of postdoc and PhD researchers based at UCD, DCU and Maynooth University.



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FMC²

Financial Mathematics and
Computation Research Cluster



www.fmc-cluster.org





Financial Mathematics and Computation Cluster (FMC²)

FMC² is a *research collaboration* between Industry, University College Dublin, Dublin City University and Maynooth University. This research group brings together complementary expertise in *financial mathematics, financial economics and computational finance* to create a holistic research programme in asset and risk management.

In addition to providing support for the innovation activities of Irish-based international financial companies, a pivotal outcome of the activities of FMC² is the creation of a supply of highly skilled personnel, trained postdoctoral researchers and PhD graduates, with world-class quantitative modelling skills who will support the future growth of financial service exports.

The Vision

The objective of FMC² is to create a globally recognised research centre that will provide a critical underpinning for the future development of the international financial services sector in Ireland.

FMC² is funded by Science Foundation Ireland's Strategic Partnership programme. The object of this programme is to create partnerships between academia and industry in order to address crucial research questions, and to support the growth of research and development capacity in companies located in Ireland.



VAR

- Factor Modelling
- Dynamic Factor Structure of European Security Market Return
- Risk Measures, Connectivity and Impact on the Real Economy

Valuation

- Pricing Real Assets – Finalization, Policy and Market Implications
- Aircraft Finance and Leasing
- Energy prices and the Impact on Investment Decisions
- Valuation of contracts with embedded inflation linked options

Risk

- Operational Risk – Measurement and Mitigation
- Measuring and mitigating operational risks in financial institutions
- Operational Risk in LIBOR and other Benchmark Markets
- Rogue Trading and Banking