



IT'S JUST A LITTLE BIT OF SNOW

The Snowstorm of January 2019





TABLE OF CONTENTS

01

INTRO

What happened in January 2019?

02

HYPOTHESES

Assumptions about the data

03

SITUATION

Visual information about conditions

04

CONCLUSIONS

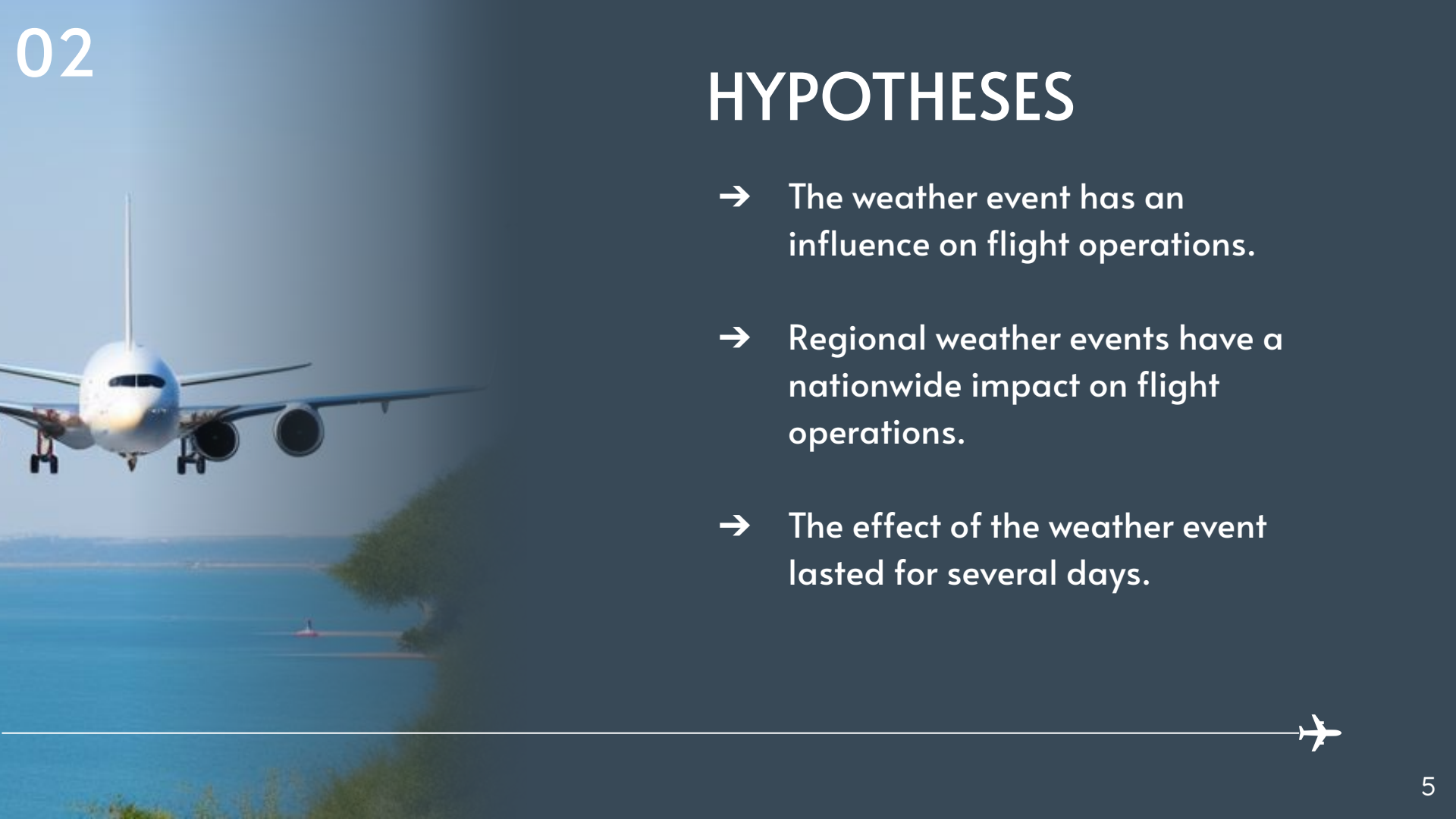
What we learned from the data





The six primary hub airports of
American Airlines.
15-JAN-2019 through 25-JAN-2019





02

HYPOTHESES

- The weather event has an influence on flight operations.
- Regional weather events have a nationwide impact on flight operations.
- The effect of the weather event lasted for several days.



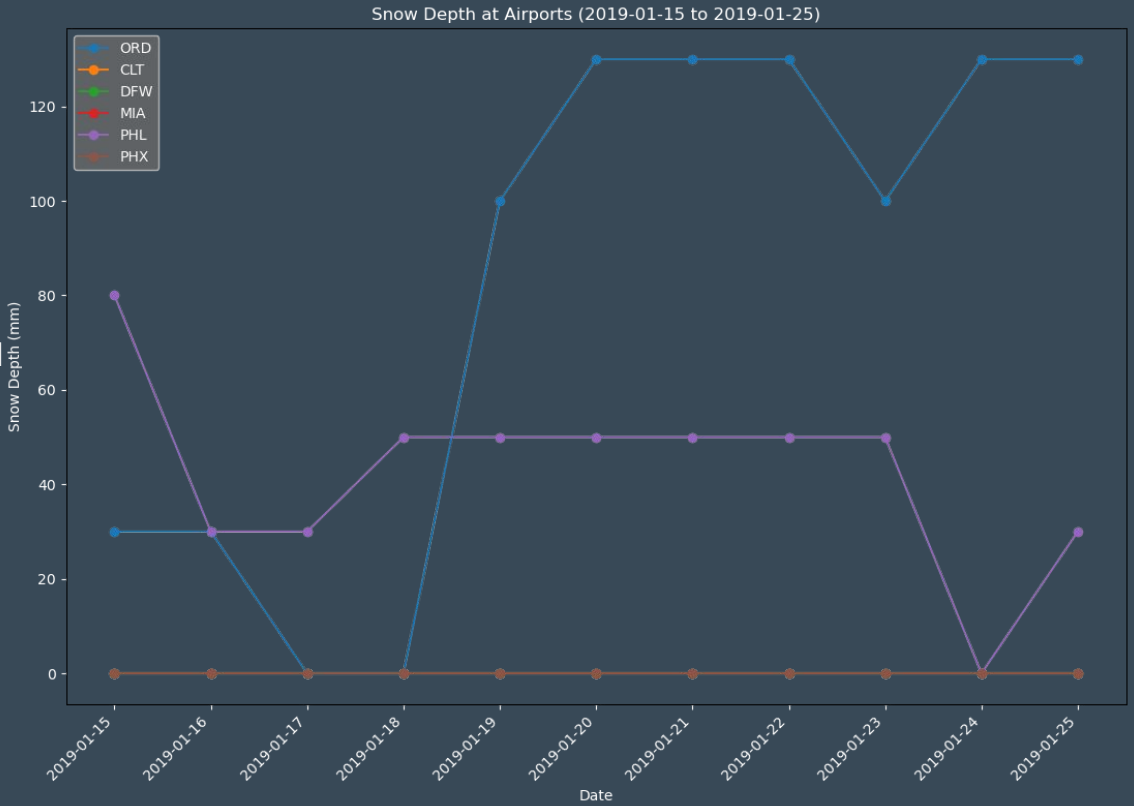


Not all airports have had snow

The storm took place on 19-01-2019.

Average snow depth at all 6 airports = 21mm

Average snow depth in Chicago = 79mm

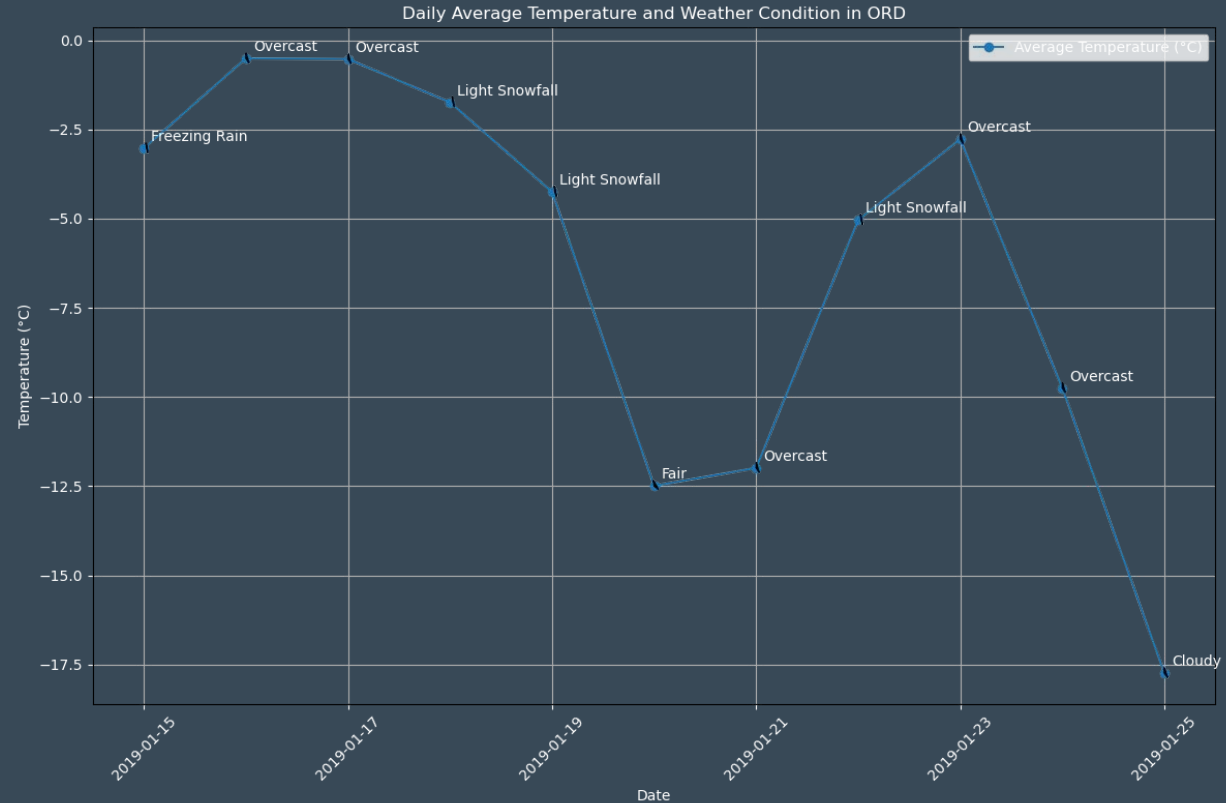


03



Is the weather that bad in Chicago?

- Light snowfall:
 - . short duration
 - . visibility of 1 kilometre (1,100 yd) or greater
 - . -19C at the lowest



03

Flight Performance KPIs

- Number of Flight Cancellations
- Minutes of Delay



Ranking of Airports by Flights



In this dataset, CLT Charlotte is the airport with most flights, but this is only based on domestic US flights.

Airport	Number of Flights	Share
CLT Charlotte	1024	27.46%
DFW Dallas	1014	27.19%
ORD Chicago	699	18.74%
MIA Miami	361	9.68%
PHL Philadelphia	332	8.90%
PHX Phoenix	299	8.02%
TOTAL	3482	100 %



Good Days, Bad Days



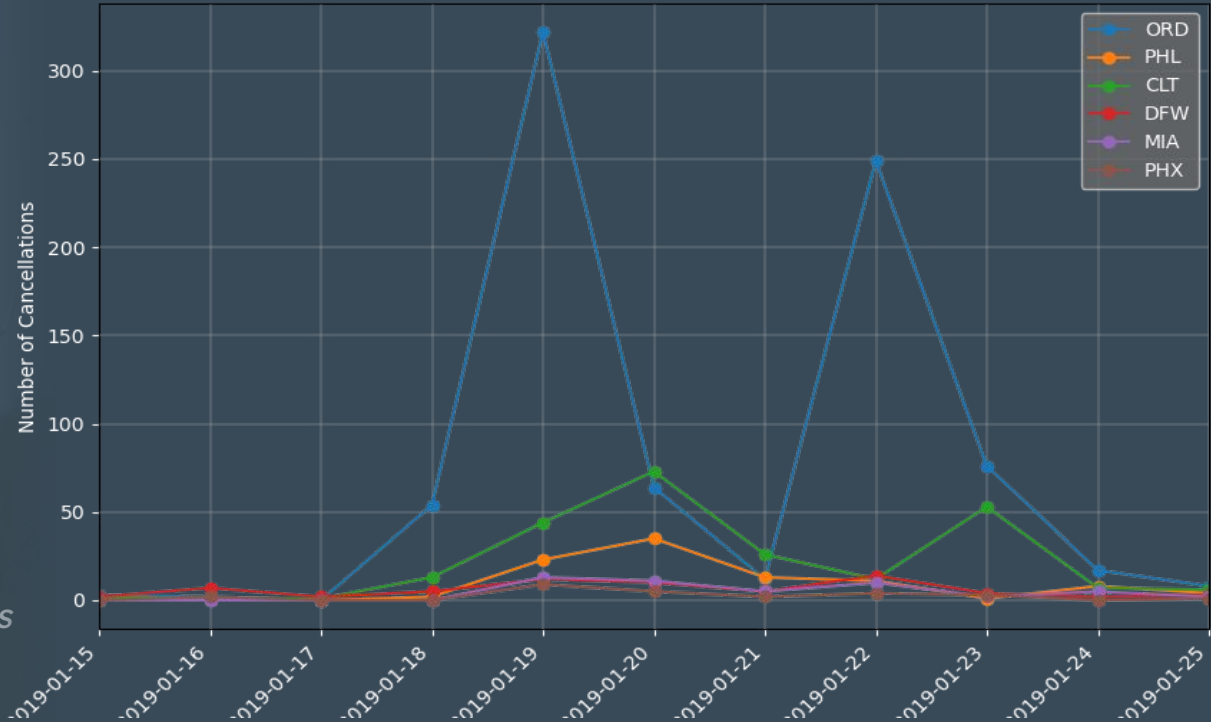
US DOT on Cancelled Flights:
“A consumer is entitled to a refund if the airline cancelled a flight, regardless of the reason, and the consumer chooses not to travel.”

Date	Cancellation Rate	Cancelled Flights
15-01-2019	0.27%	9
16-01-2019	0.34%	12
17-01-2019	0.08%	3
18-01-2019	1.99%	74
19-01-2019	13.65%	399
20-01-2019	6.01%	196
21-01-2019	1.77%	63
22-01-2019	8.50%	280
23-01-2019	3.85%	136
24-01-2019	1.02%	38
25-01-2019	0.62%	23



Chicago is the Outlier

Number of Cancellations Over Time (Different Airports)



Almost 50% of all AA flights from/to Chicago were cancelled on 19-01-2019.



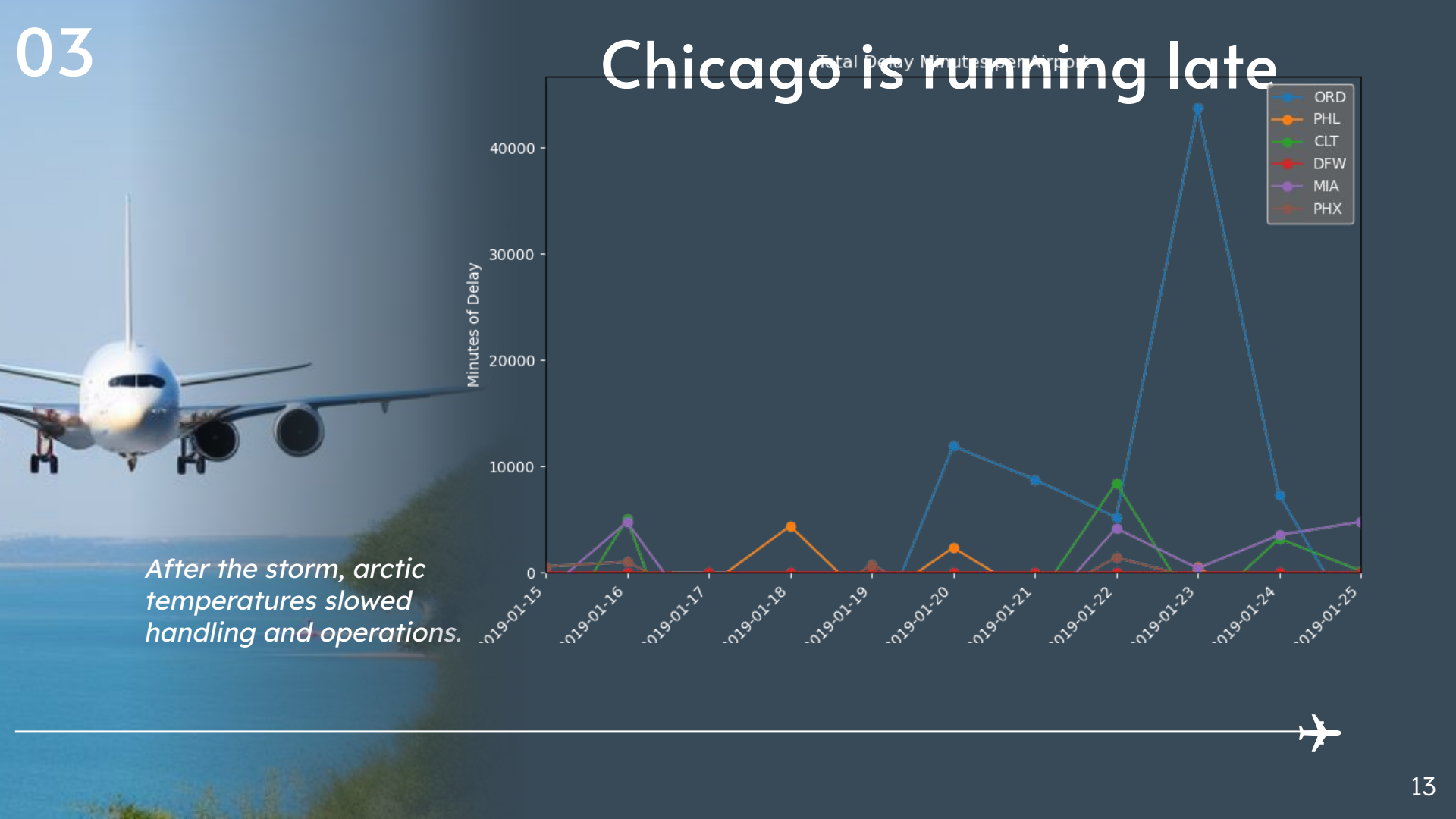
Good Days, Bad Days 2



Airlines for America:
“US Passenger Delay Costs =
\$102 per minute”

Date	Minutes of Delay Total	Average Delay per Flight operated
15-01-2019	-13.468	-4,10
16-01-2019	-1.173	-0,33
17-01-2019	-31.911	-8,58
18-01-2019	-5.111	-1,40
19-01-2019	-3.612	-1,25
20-01-2019	-11.191	-3,65
21-01-2019	1.149	0,32
22-01-2019	14.366	4,76
23-01-2019	39.109	11,52
24-01-2019	13.348	3,62
25-01-2019	0.62%	-0,65

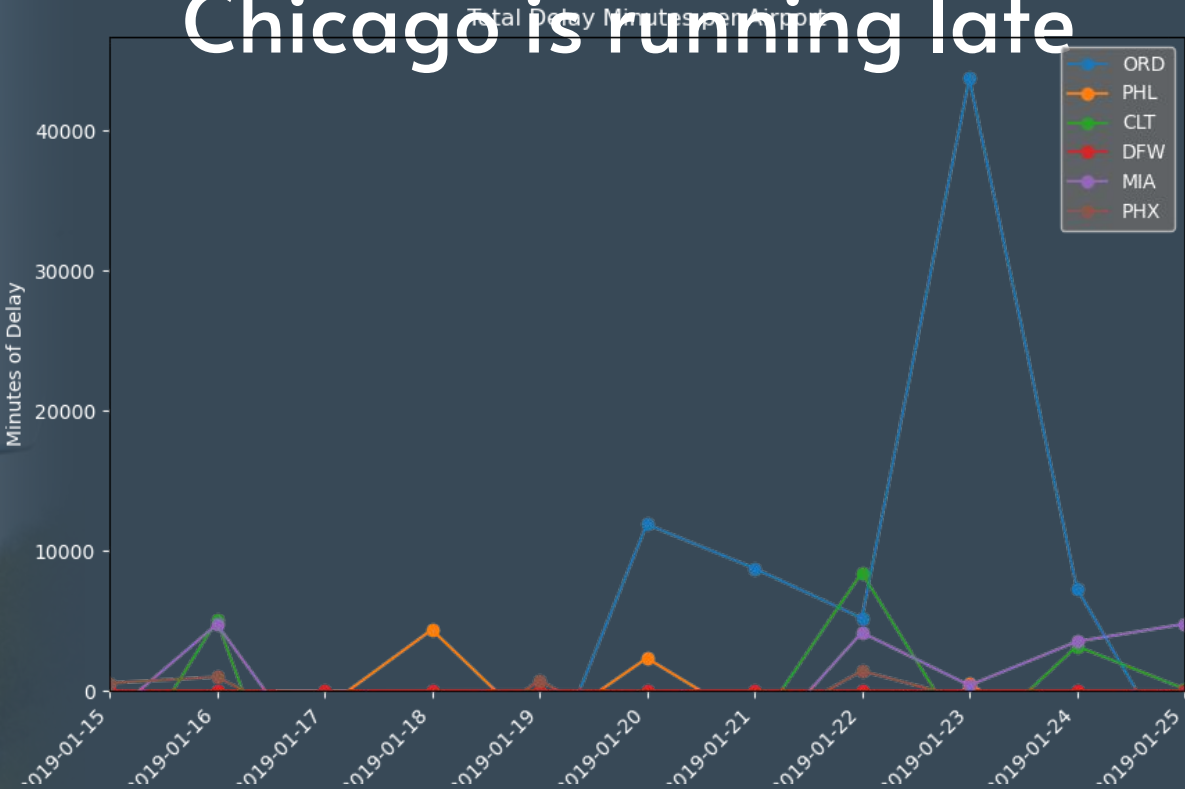


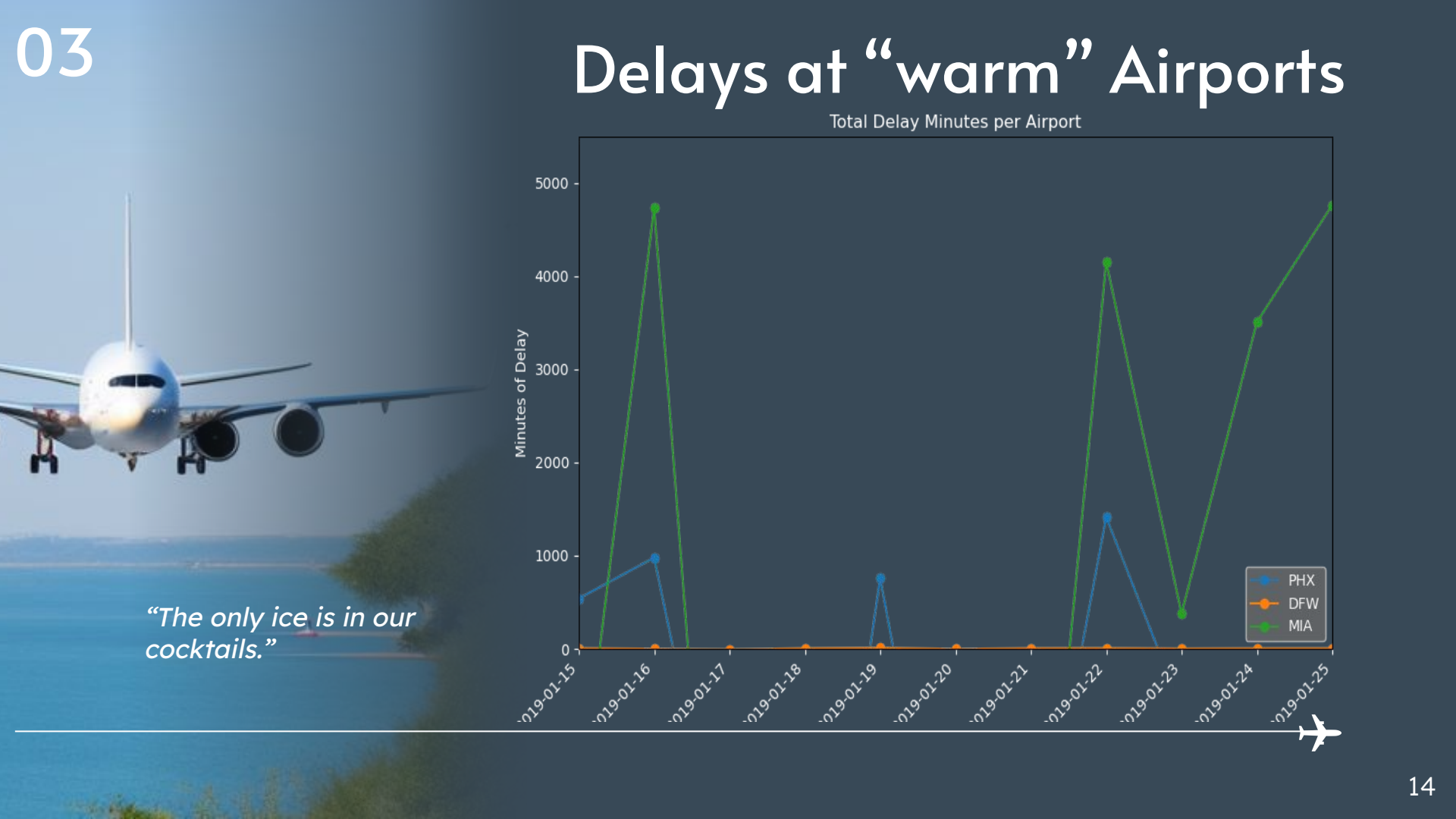


03

Chicago is running late

After the storm, arctic temperatures slowed handling and operations.

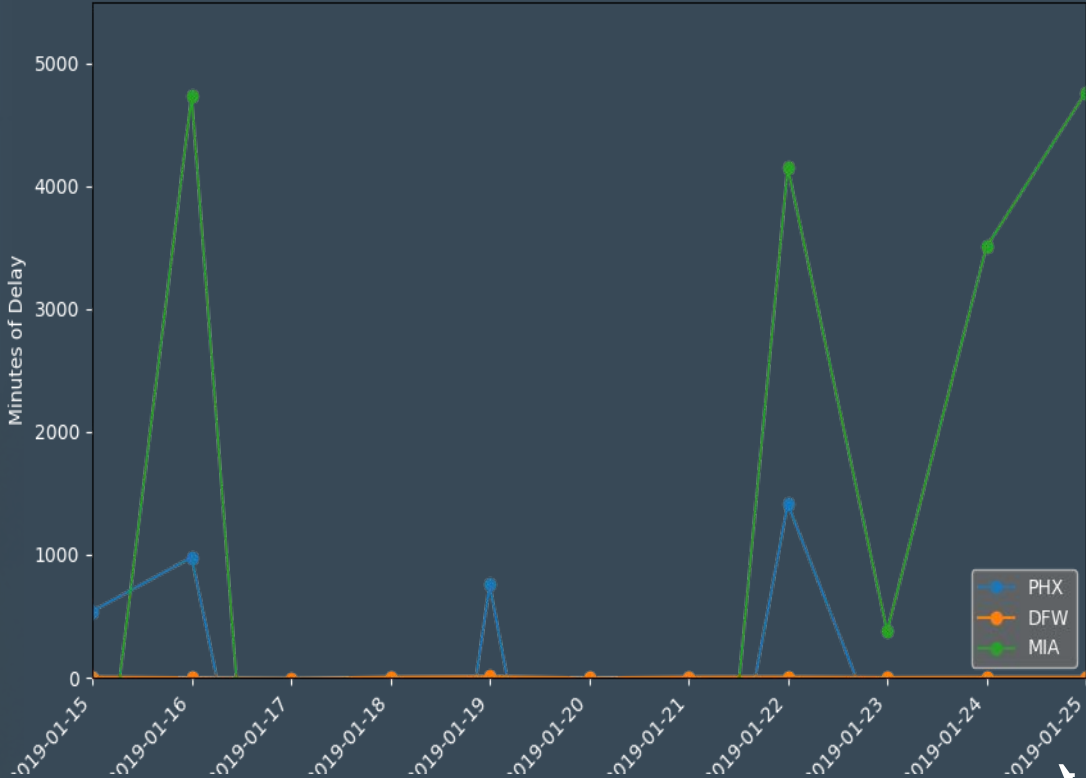




03

Delays at “warm” Airports

Total Delay Minutes per Airport



“The only ice is in our cocktails.”





CONCLUSIONS



HYPOTHESES

All correlations were positive, yet rather weak (0,15 - 0,23).



IMPACT

The nationwide impact was less than expected.

Chicago was hit the hardest.



FLAWS

No international flights were observed.

US Government Shutdown during the same timeframe, affecting air traffic control and airport security.

