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# Maximizing Economic Benefits of Aviation in the Region

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**Georgetown, Guyana**

**21 November 2018**





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Doc 7300/9



**Convention on  
International Civil Aviation**

**Convention relative à  
l'aviation civile internationale**

**Convenio sobre  
Aviación Civil Internacional**

**Конвенция о международной  
гражданской авиации**

This document supersedes Doc 7300/8.  
Le présent document annule et remplace le Doc 7300/8.  
Este documento reemplaza el Doc 7300/8.  
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International Civil Aviation Organization  
Organisation de l'aviation civile internationale  
Organización de Aviación Civil Internacional  
Международная организация гражданской авиации

## Preamble

.....

THEREFORE, the undersigned governments having agreed on certain principles and arrangements in order that international civil aviation may be developed in a safe and orderly manner and that international air transport services may be established on the basis of equality of opportunity and operated soundly and economically;



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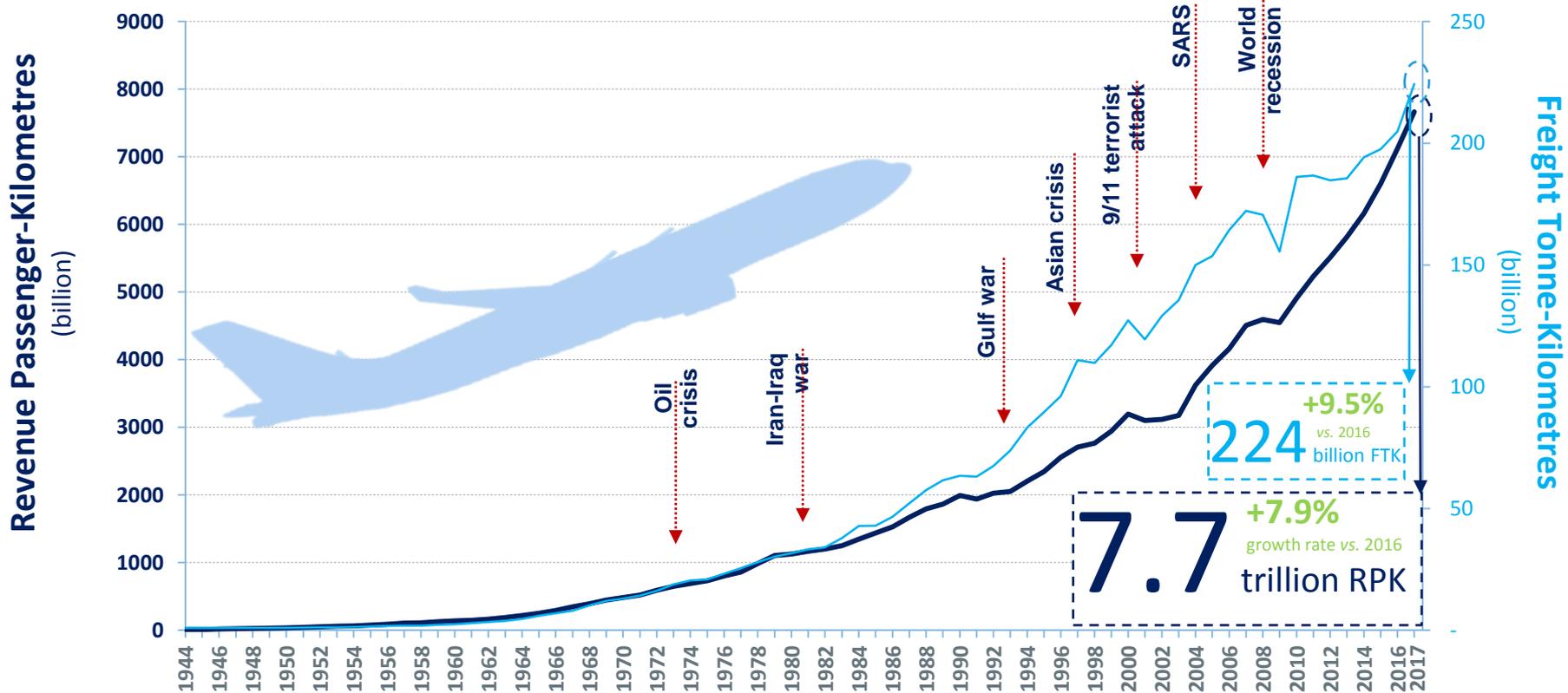


# STATE OF THE INDUSTRY





# Growth of air transport in 2017



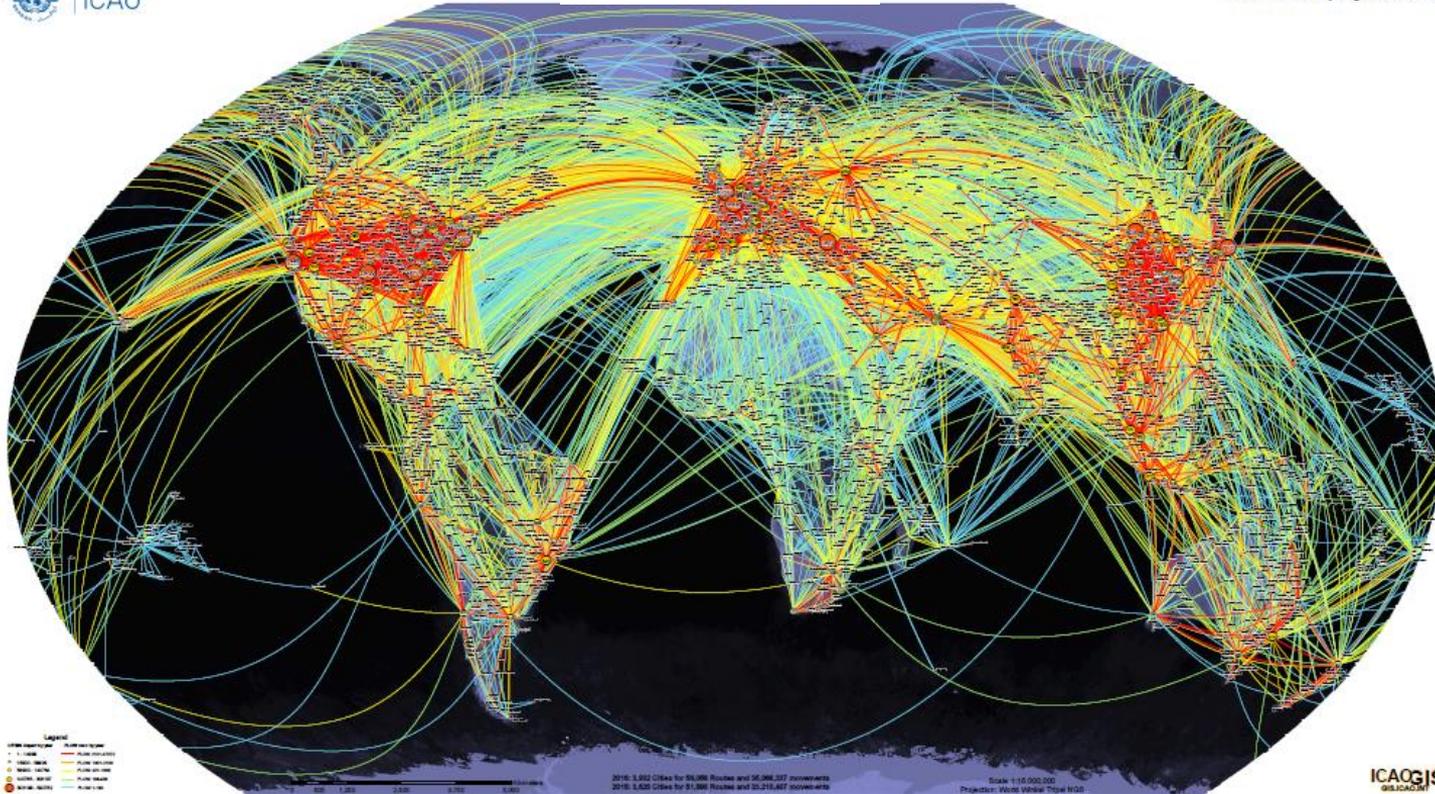


# The size of the industry in 2017

- **4.1 billion passengers** *[4 billion mark]*
- **37 million aircraft departures**
- **56 million freight tonnes carried**
- **Over 1 400 scheduled airlines**
- **More than 26 000 aircraft**
- **More than 3 900 airports**
- **173 air navigation centres**
- **290,000 pilots\*** and **82,000 air traffic controllers**

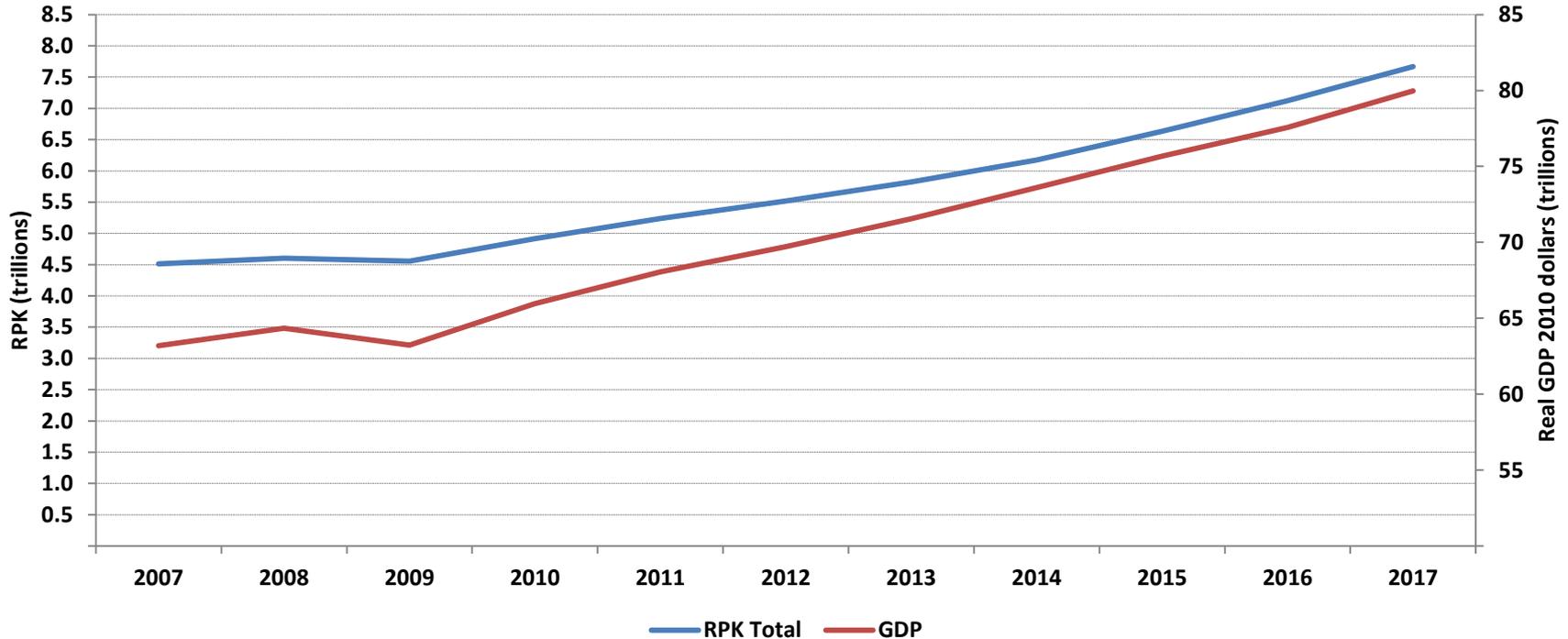


More Info: <http://gis.icao.int>



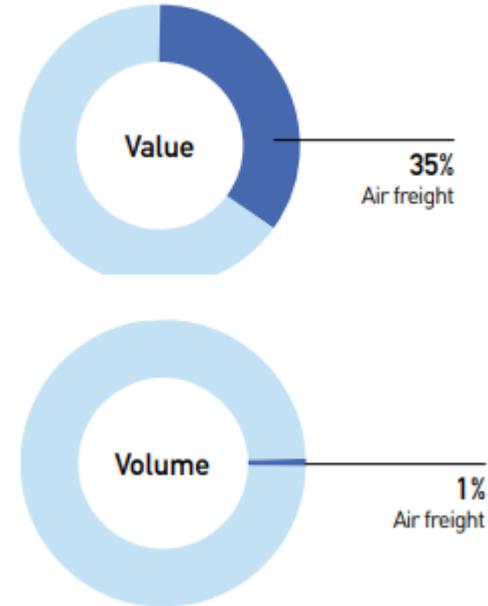


## Total Revenue Passenger Kilometres and Real GDP



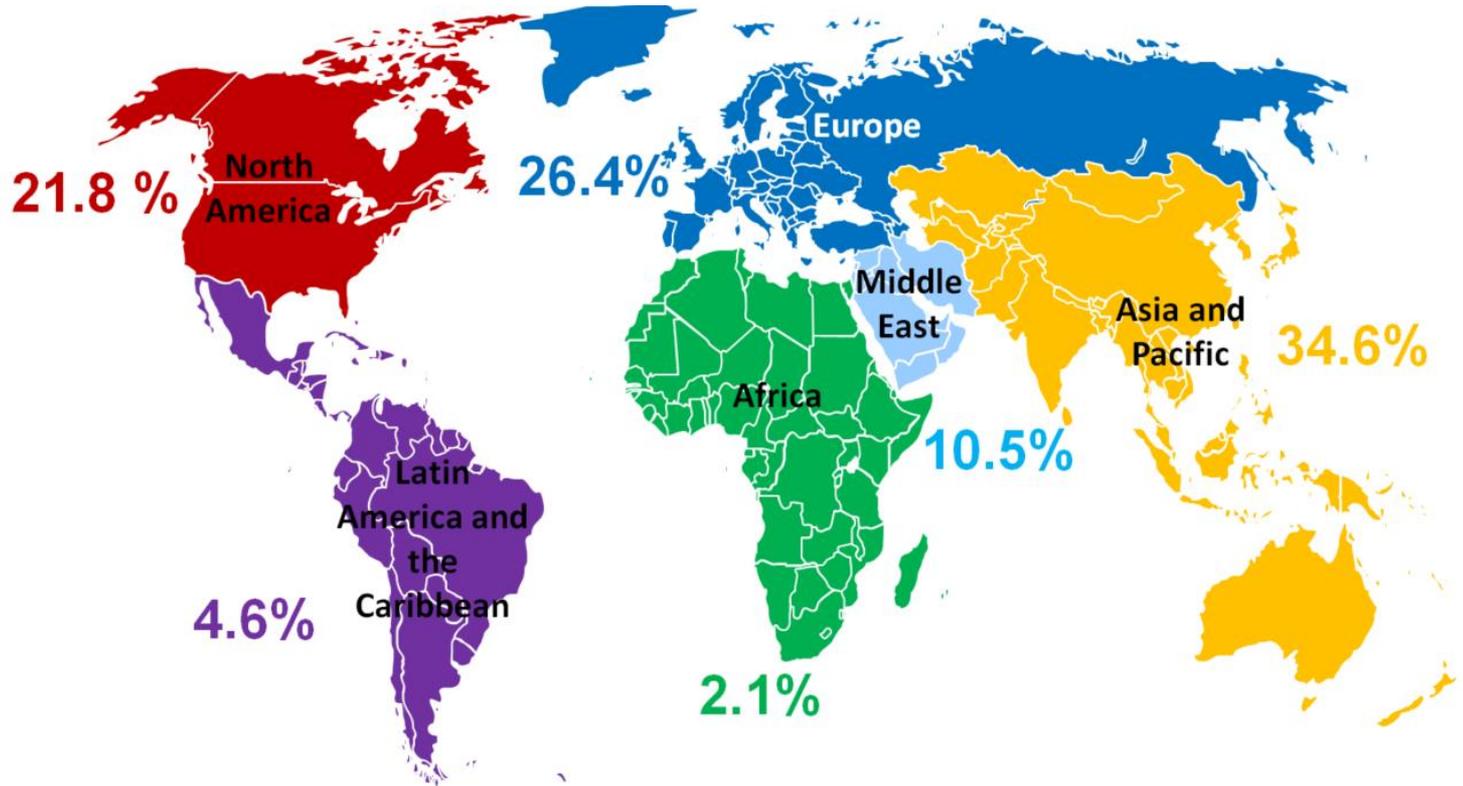
- Cargo load factor (in terms of combination of belly and freighter capacity) reached 51.1% in 2017 after 3 years at 47%
- 61% of the FTK are carried in the belly of passenger aircraft in 2017
- Belly hold of a 777-300ER passenger aircraft carries more cargo than traditional freighters

## Air Cargo represents

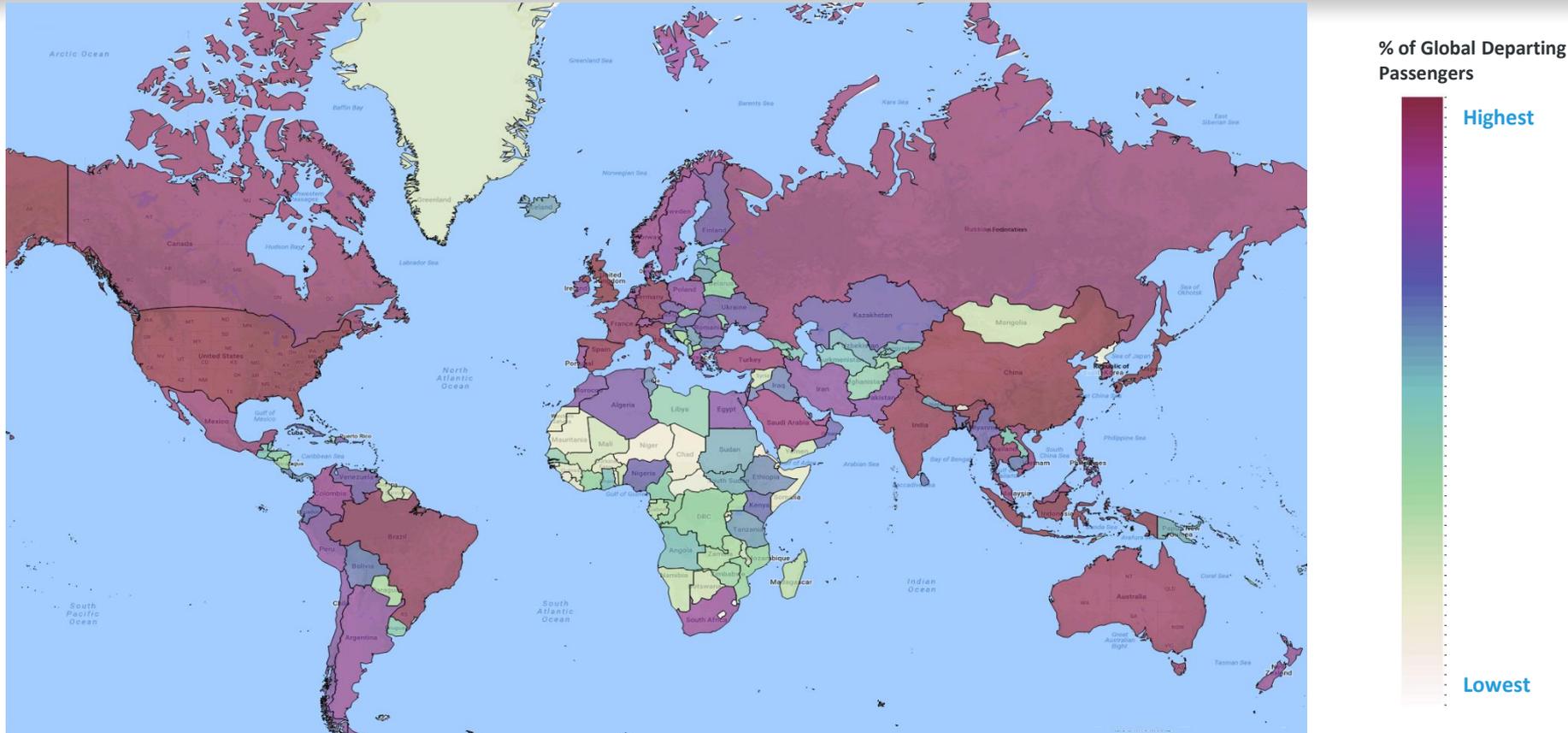




# Share of Total Revenue Tonne-Kilometres by region in 2017



# Global Passenger Traffic by Country of Departure in 2017



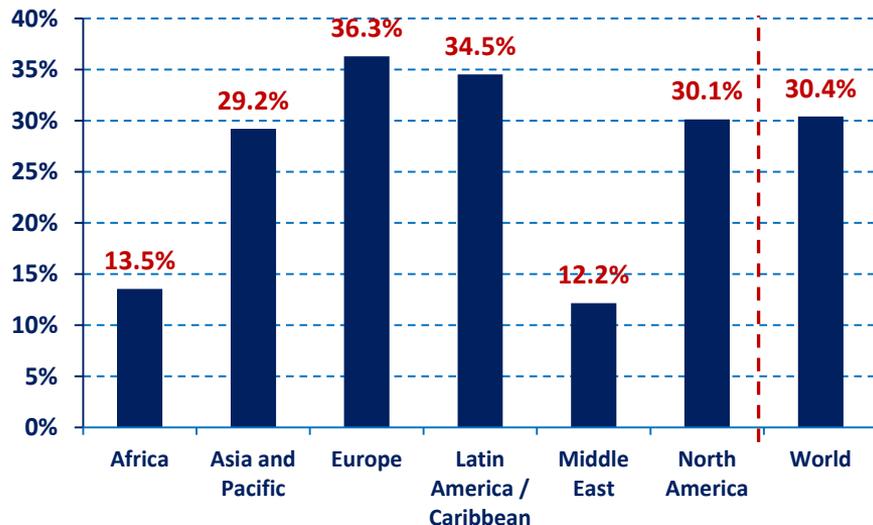
## International Scheduled Revenue Tonne-Kilometres (RTK)

Rank	State of AOC	RTK 2017 (million)	RTK share (%)	Cumulative (%)
1	China (1)	84,412	12.8318%	12.8318%
2	United States	66,425	10.0975%	22.9292%
3	United Arab Emirates	55,863	8.4919%	31.4212%
4	United Kingdom	35,192	5.3497%	36.7708%
5	Germany	31,789	4.8323%	41.6032%
6	Qatar	24,077	3.6600%	45.2632%
7	Republic of Korea	23,650	3.5952%	48.8584%
8	Turkey	19,669	2.9900%	51.8484%
9	Singapore	19,601	2.9796%	54.8281%
10	France	19,001	2.8885%	57.7165%
11	Japan	18,992	2.8870%	60.6035%
12	Ireland	18,667	2.8376%	63.4411%
13	Netherlands	18,056	2.7448%	66.1859%
14	Canada	16,820	2.5569%	68.7428%
15	Russian Federation	14,824	2.2534%	70.9962%
16	Thailand	11,746	1.7856%	72.7817%
17	Spain	10,772	1.6375%	74.4193%
18	Australia	10,272	1.5614%	75.9807%
19	Malaysia	9,376	1.4253%	77.4060%
20	India	8,940	1.3590%	78.7650%

Rank	State of AOC	RTK 2016 (million)	RTK share (%)	Cumulative (%)
1	China (1)	76,578	12.7123%	12.7123%
2	United States	63,072	10.4703%	23.1826%
3	United Arab Emirates	53,797	8.9306%	32.1132%
4	United Kingdom	33,427	5.5491%	37.6623%
5	Germany	31,027	5.1506%	42.8128%
6	Republic of Korea	22,297	3.7015%	46.5143%
7	Qatar	21,672	3.5977%	50.1120%
8	Singapore	18,671	3.0995%	53.2115%
9	France	18,128	3.0094%	56.2209%
10	Turkey	17,167	2.8498%	59.0707%
11	Japan	16,995	2.8212%	61.8919%
12	Netherlands	16,326	2.7101%	64.6021%
13	Ireland	15,921	2.6429%	67.2450%
14	Canada	14,757	2.4497%	69.6947%
15	Russian Federation	12,202	2.0255%	71.7202%
16	Thailand	10,154	1.6856%	73.4058%
17	Spain	9,865	1.6376%	75.0434%
18	Australia	9,684	1.6076%	76.6510%
19	Malaysia	8,245	1.3687%	78.0197%
20	India	7,566	1.2561%	79.2758%

# Low-cost carriers (LCCs) stimulating traffic

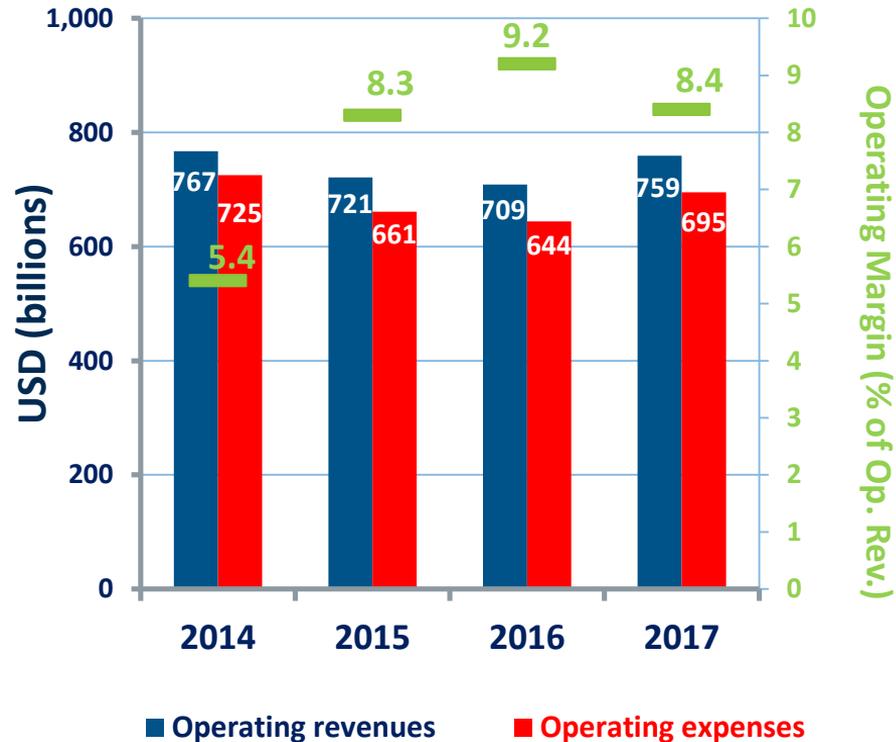
Share of passengers carried by LCCs in each region in 2017



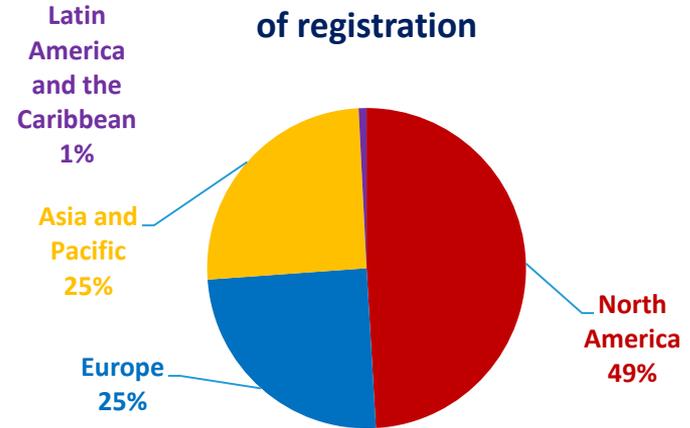
Passenger number growth for LCCs and other carriers

	2016	2017
LCCs	10.2%	11.4%
Others	5.3%	5.5%
Total	6.7%	7.2%

LCCs growth has been consistently twice as much as other carriers' growth

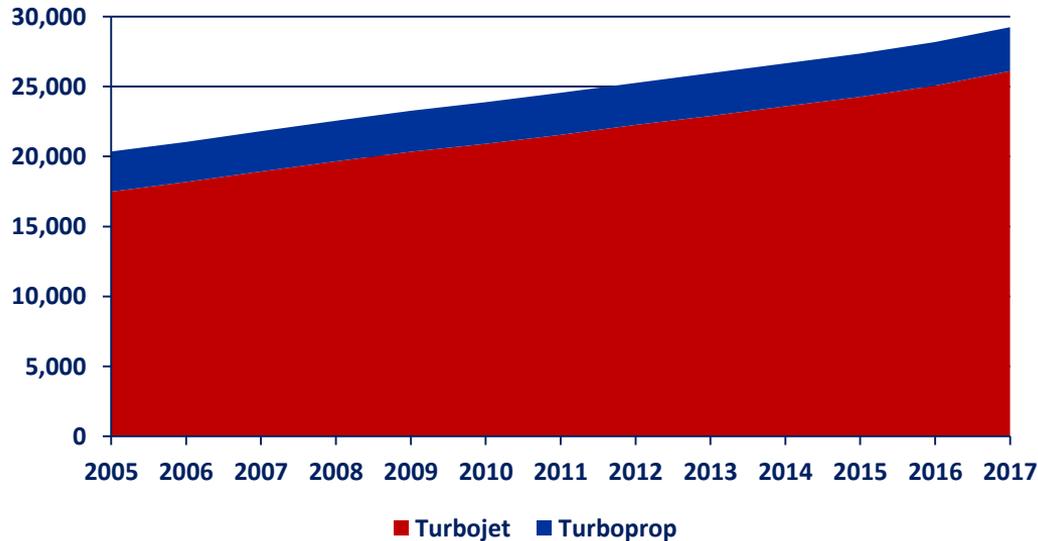


Distribution of net profit by region of registration



Operating margin decreased because of the rising fuel costs

## Commercial fleet evolution



**In 2017:** 26,100 turbojet aircraft  
3,136 turboprop aircraft

For the 2 largest aircraft manufacturers (Airbus and Boeing) in 2017:

- **1481** new aircraft **delivered**
- **Net orders** for **2021** aircraft

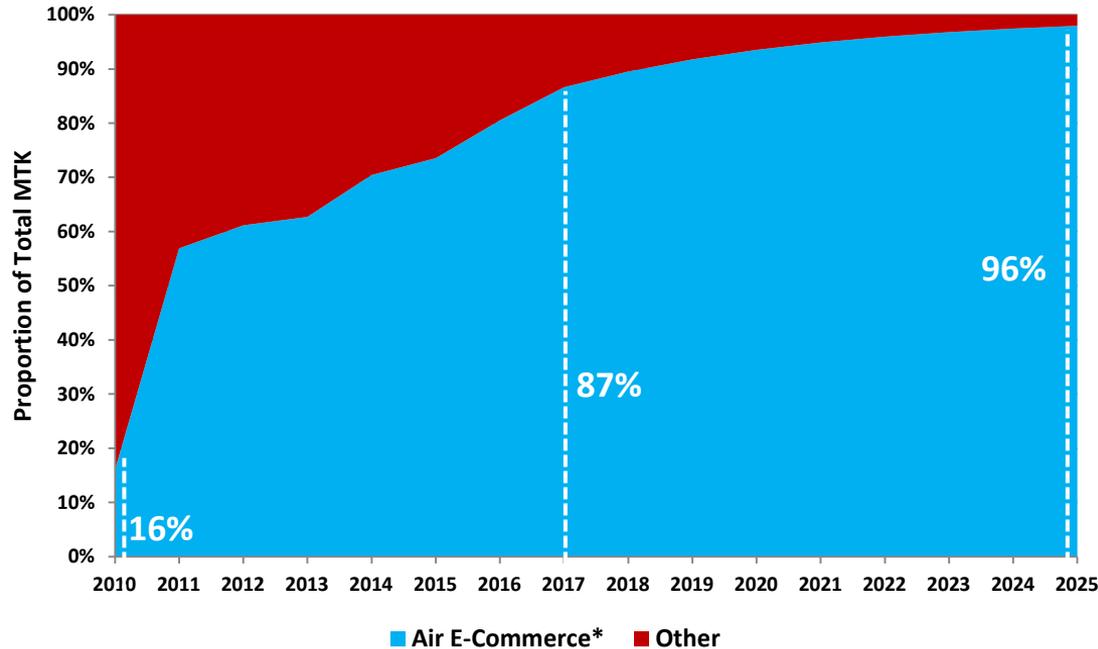
Book to bill ratio\* sharply increased from **1 : 1** in 2016 to **1.4 : 1** in 2017, reflecting an increasing number of orders to deliveries

\* Book to bill ratio: orders / deliveries

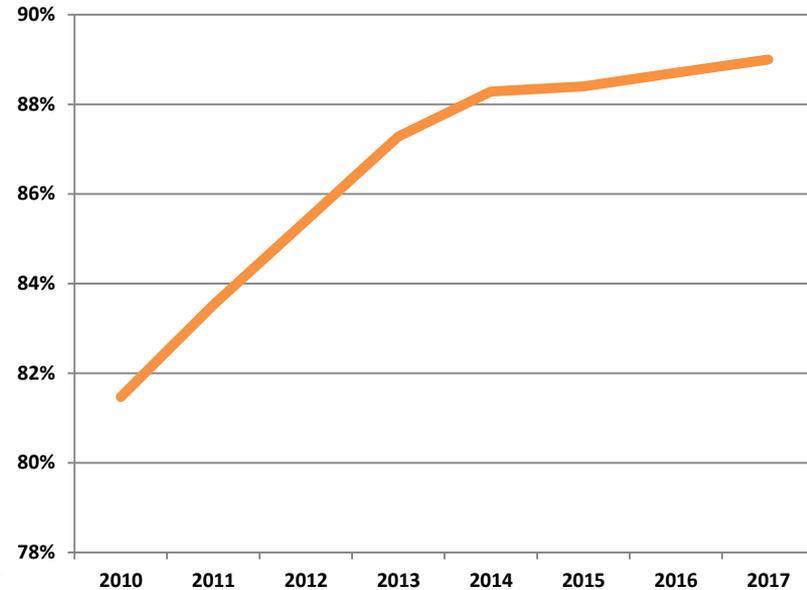


# E-commerce development continued in 2017

### International Mail Tonnes Kilometres (MTK) breakdown



### Percentage of E-Commerce Parcels by Air (Two Ways, Percentage Carried by Air)



- E-commerce share of MTKs grew from 16% to 87% between 2010 and 2017 and is estimated to grow to 96% by 2025



## Projected\* Annual Growth of Passenger Traffic (in RPK)

RouteGroup	2015-2035 CAGR**	RouteGroup	2015-2035 CAGR
Africa Domestic	5.8%	Europe - Sub Saharan Africa	2.9%
Africa - Asia/Pacific	5.0%	Intra Africa	5.8%
Africa - Middle East	4.5%	Intra Central America/Caribbean	4.3%
Africa - North America	2.9%	<b>Intra China &amp; South West Asia</b>	<b>6.9%</b>
Africa & Middle East - Central America/Caribbean	4.3%	Intra Europe	2.7%
Africa & Middle East - South America	3.8%	Intra Middle East	3.6%
Central America/Caribbean Domestic	4.3%	Intra North America	2.6%
Central America/Caribbean - Europe	4.4%	Intra North Asia	1.7%
Central America/Caribbean - North America	4.0%	Intra Pacific South East Asia	5.4%
Central America/Caribbean - South America	3.6%	Intra South America	3.1%
Central South West Asia Domestic	6.7%	Latin America/Caribbean - Central South West Asia	5.4%
Central South West Asia - Europe	5.5%	Latin America/Caribbean - North Asia & Pacific South East Asia	4.2%
<b>Central South West Asia - Middle East</b>	<b>6.8%</b>	Middle East Domestic	3.6%
Central South West Asia - North America	5.9%	Middle East - North America	3.8%
<b>Central South West Asia - North Asia</b>	<b>7.2%</b>	Middle East - North Asia & Pacific South East Asia	4.0%
Central South West Asia - Pacific South East Asia	6.6%	North America Domestic	2.6%
Europe Domestic	2.7%	North America - North Asia	2.4%
Europe - Middle East	4.2%	North America - Pacific South East Asia	4.4%
Europe - North Africa	4.3%	North America - South America	4.0%
Europe - North America	2.8%	North Asia Domestic	1.7%
Europe - North Asia	2.5%	North Asia - Pacific South East Asia	4.0%
Europe - Pacific South East Asia	4.5%	Pacific South East Asia Domestic	5.3%
Europe - South America	4.2%	South America Domestic	3.1%

## Projected\* Annual Growth of Cargo Traffic (in FTK)

LTF Region	2015-2035 CAGR
Africa	3.8%
Asia and Pacific	4.3%
Europe	2.7%
Latin America and Caribbean	1.6%
Middle East	5.7%
North America	2.8%

### 2015-2035 CAGR

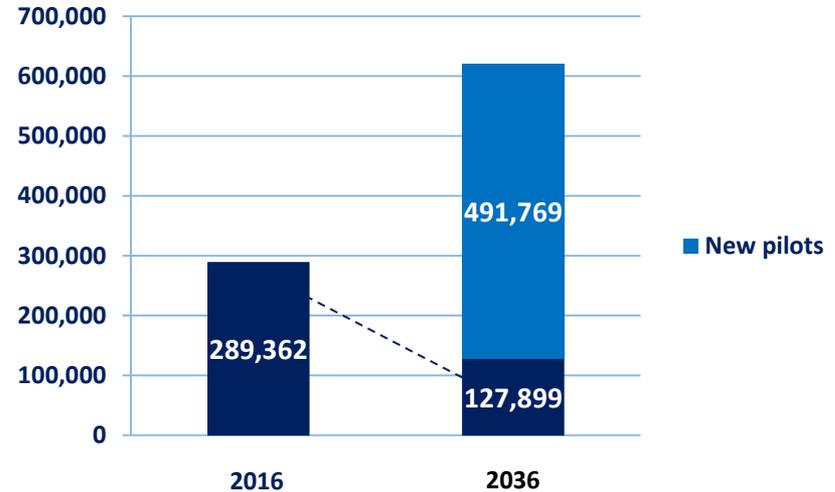
Global Passenger traffic (RPK): +4.3 %  
Global Cargo traffic (FTK): +3.9%

3 fastest growing route groups in red



# Pilot forecasts for 2036

Region	Pilots 2016*	Pilots 2036*
Africa	7,251	18,533
Asia-Pacific	84,211	306,268
Europe	66,542	114,299
Latin America	24,965	32,827
Middle East	18,816	45,776
North America	87,577	101,966
World	289,362	619,668

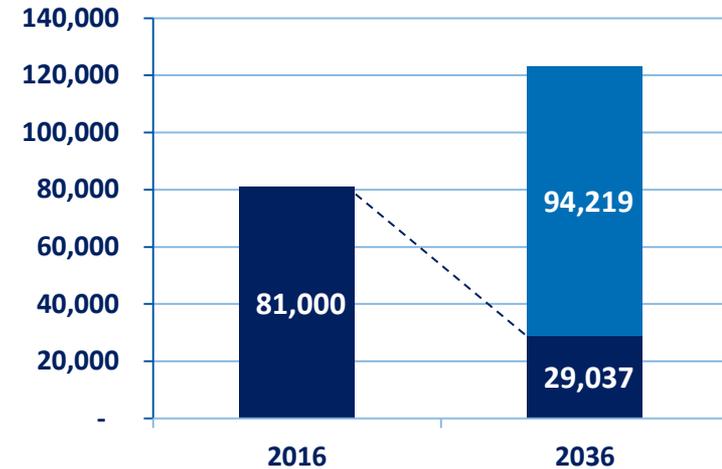


**67 new pilots need to be trained per day on average to meet the demand for pilots**



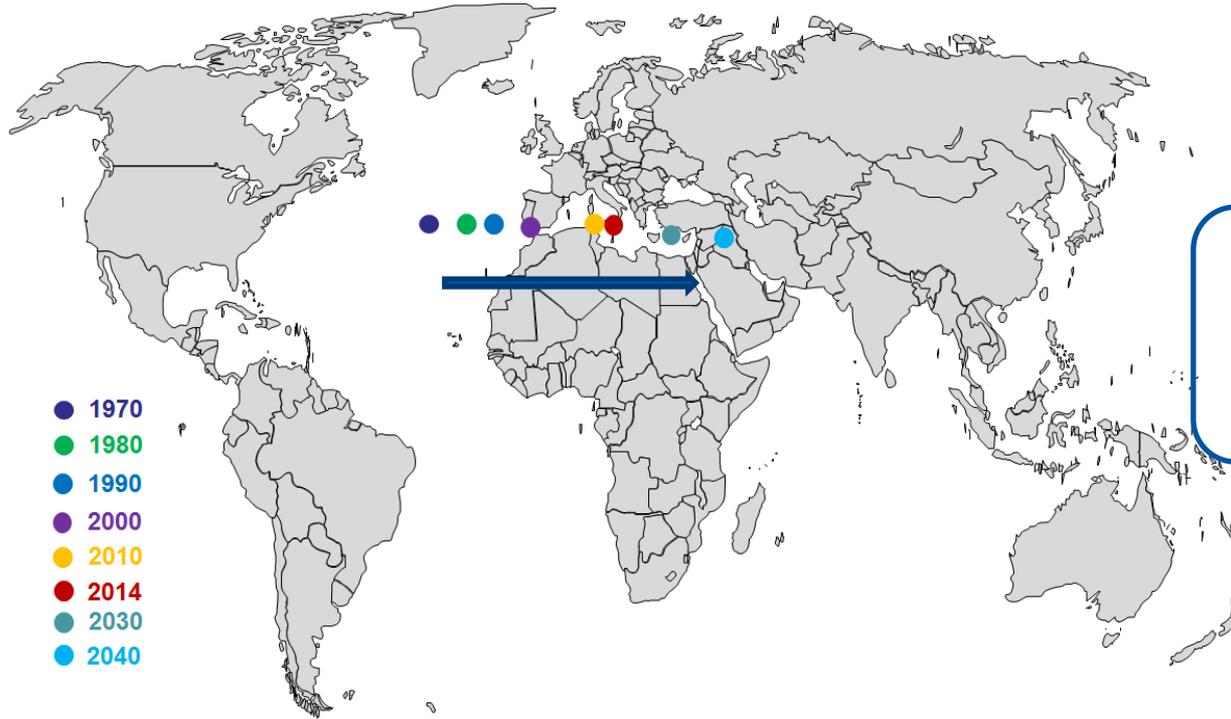
# Air traffic controllers forecasts for 2036

	Air Traffic controllers 2016	Air Traffic controllers 2036
Africa	4,860	7,050
Asia/Pacific	25,110	48,993
Europe	23,490	29,589
Latin America	6,480	8,878
Middle East	5,670	8,434
North America	15,390	20,313
World	81,000	123,256



**13 new air traffic controllers (ATC) need to be trained per day on average to meet the demand for ATC personnel**

# Movement of centre of gravity



The centre of gravity has been steadily moving from the middle of North Atlantic to the middle of the Mediterranean sea in the last four decades. It is expected to move further east by 2040.

Geographical centre of gravity of departing/arriving passengers



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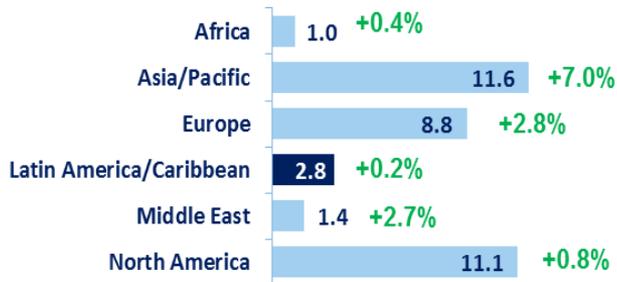
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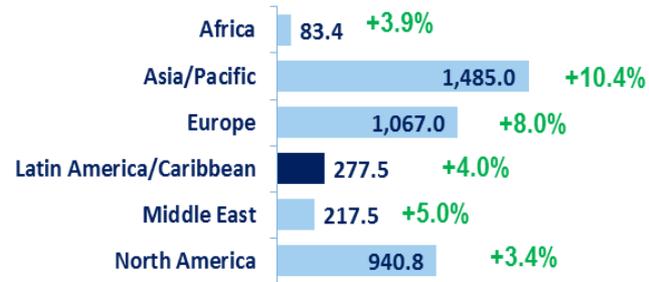
# AVIATION IN LATIN AMERICA/CARIBBEAN



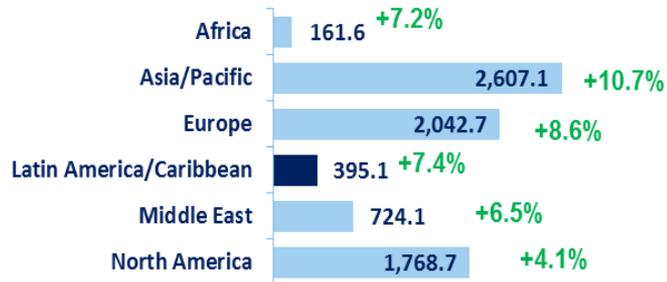
## Aircraft departures (million)



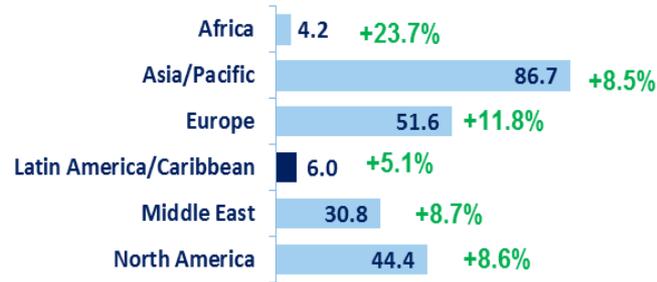
## Passengers carried (million)



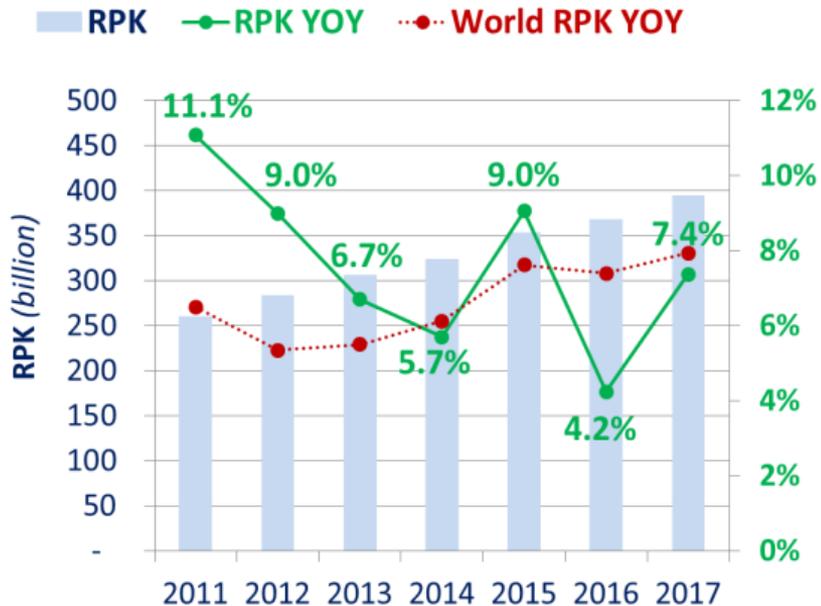
## Revenue Passenger-Kilometres (billion)



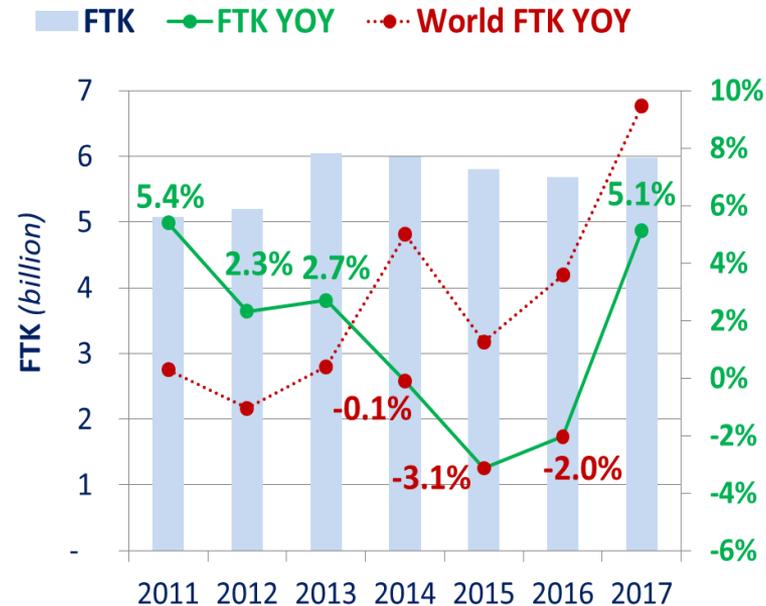
## Freight Tonne-Kilometres (billion)



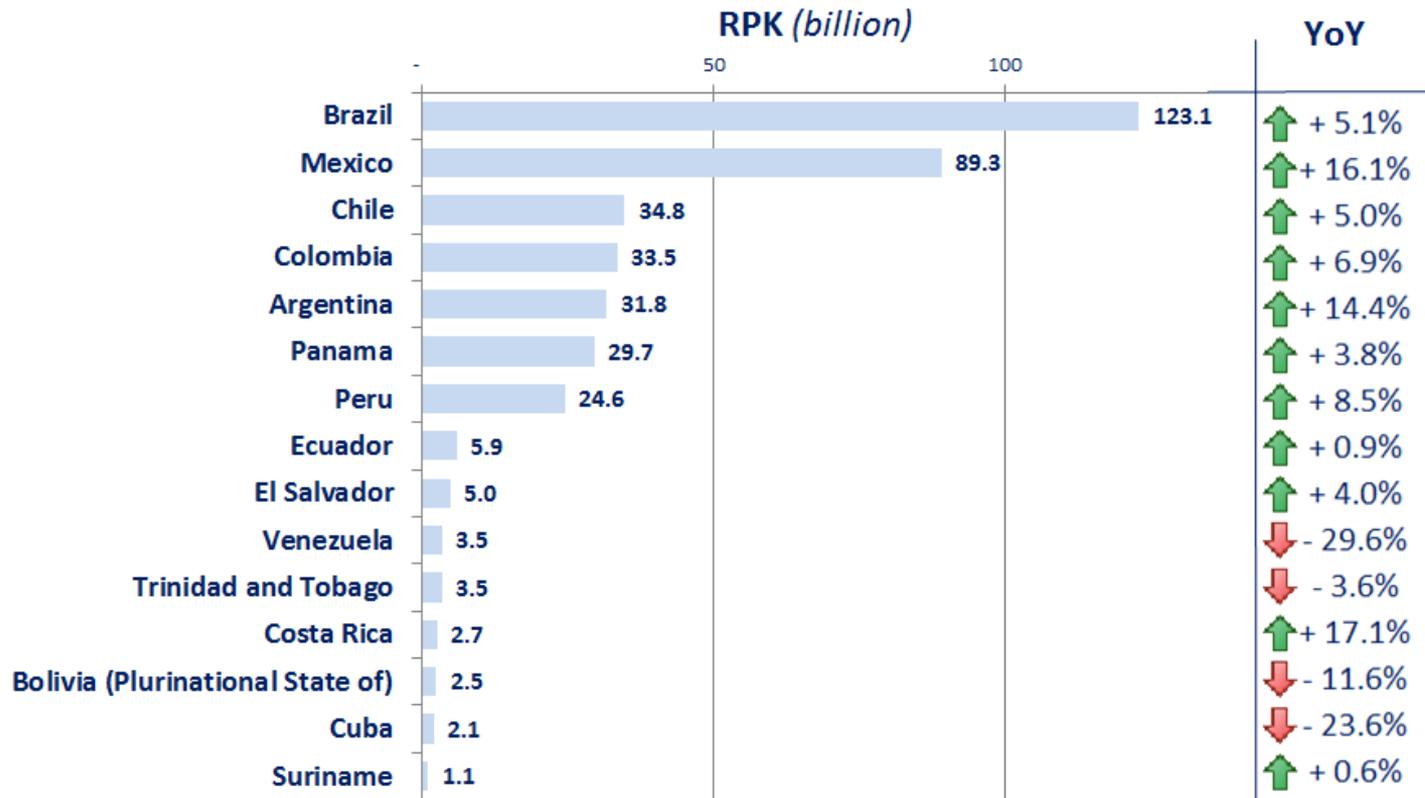
## Growth of Passenger Traffic (in RPK)



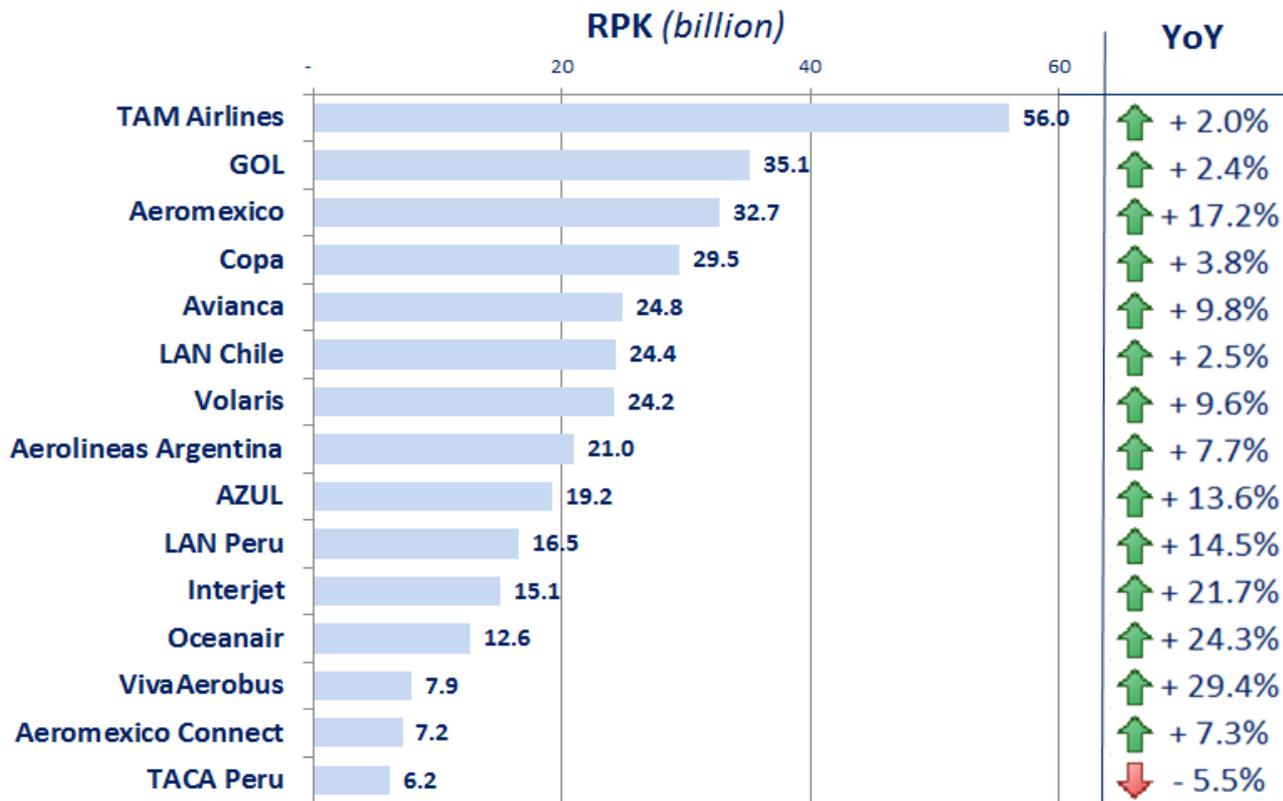
## Growth of Freight Traffic (in FTK)



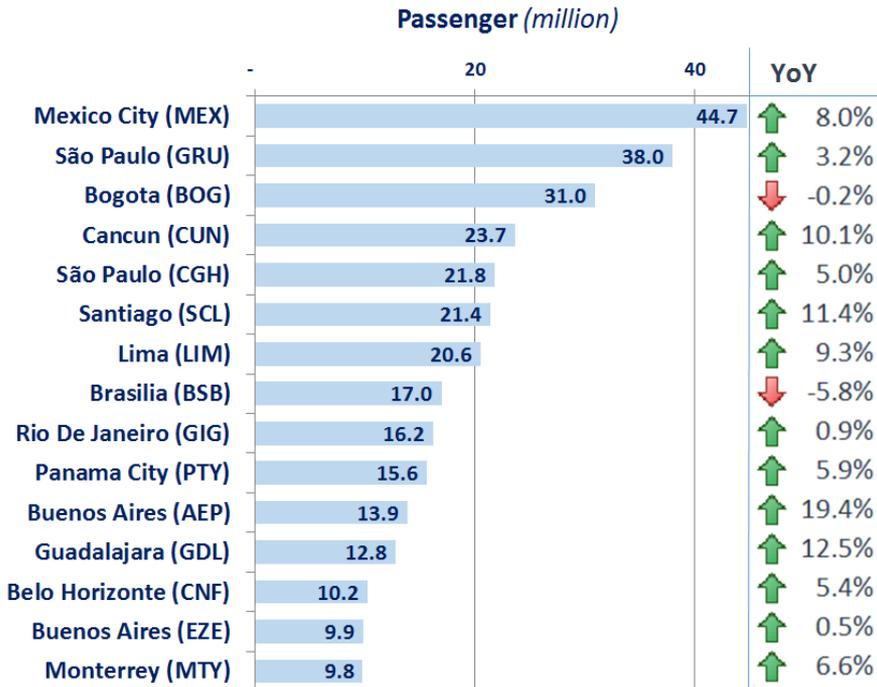
# Top 15 States in the region in RPK 2017



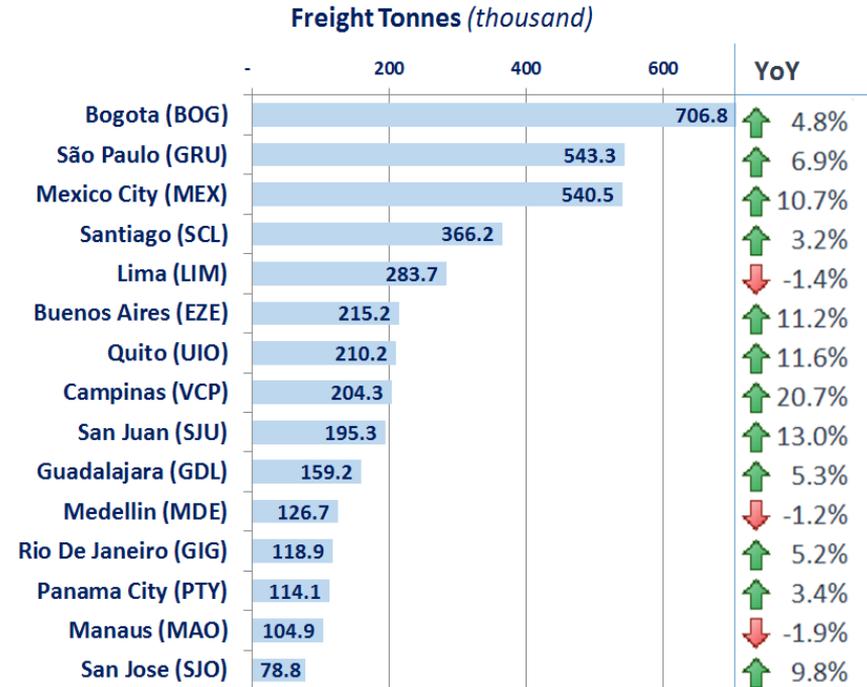
# Top 15 carriers in the region in RPK 2017



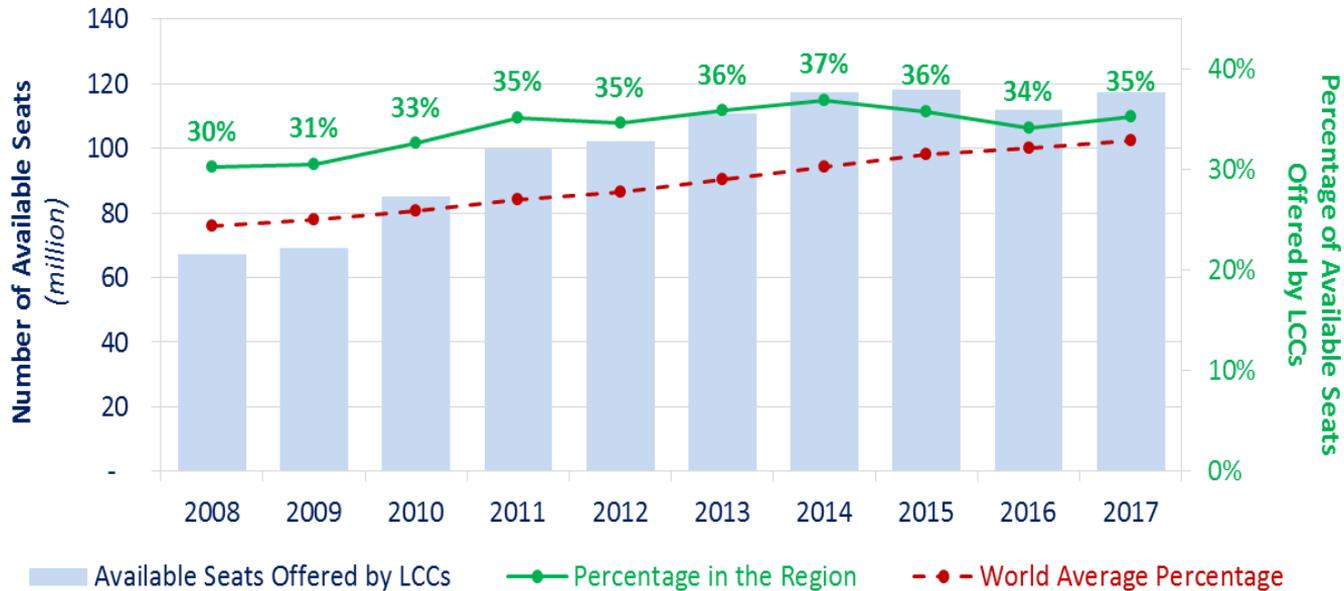
## Top 15 Airports in Passenger



## Top 15 Airports in Freight



## LCC Traffic Intra Latin America/Caribbean





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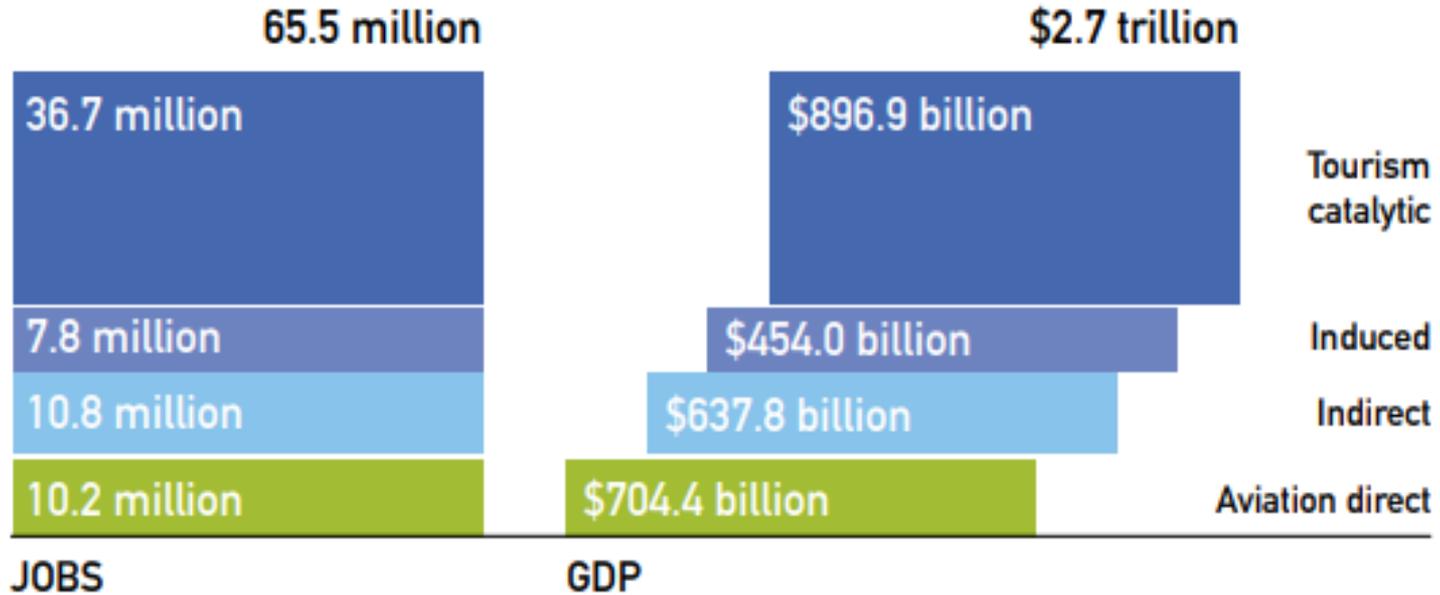


# AVIATION BENEFITS





## Aviation's global employment and GDP impact, 2016



# Value of aviation: Social benefits

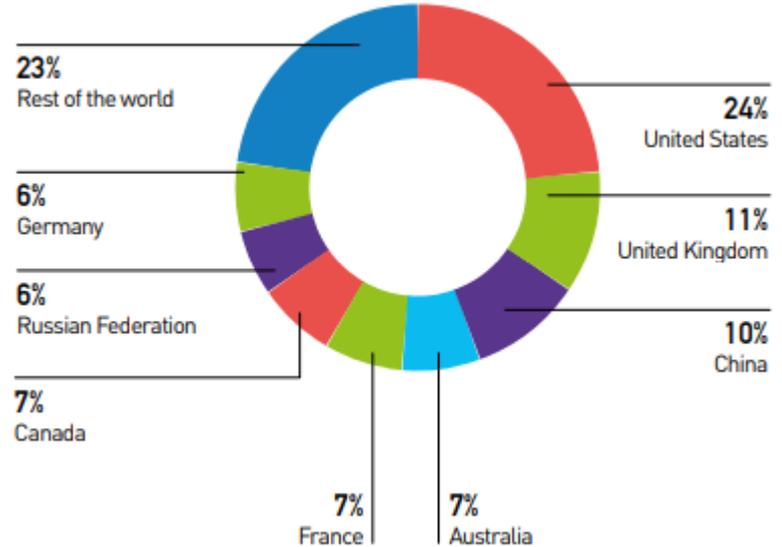
SAFELY  
CONNECTING  
PEOPLE AND  
BUSINESS

HEALTH AND  
HUMANITARIAN  
AID

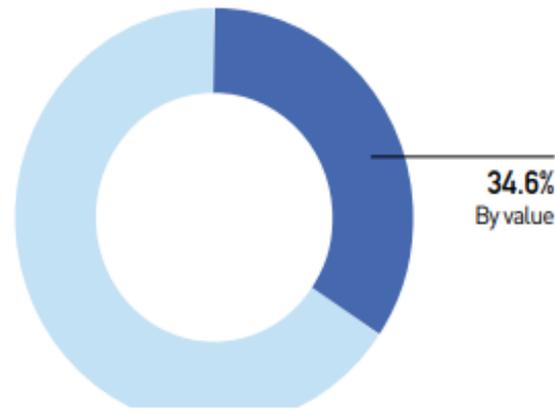
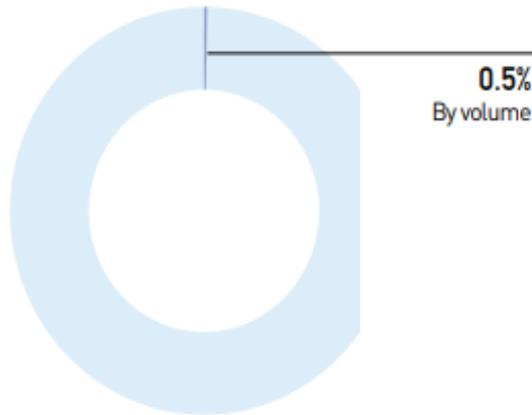
EDUCATIONAL  
OPPORTUNITIES

IMPROVING  
QUALITY  
OF LIFE

### Top destinations for international students, 2017



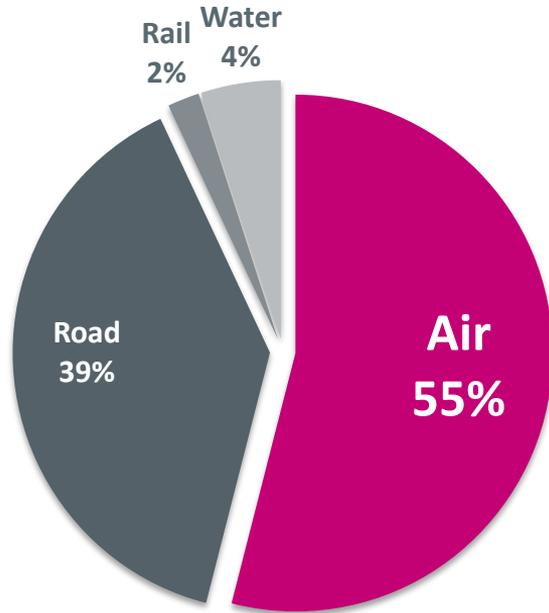
## Air freight, as a proportion of global trade, by volume and by value, 2017



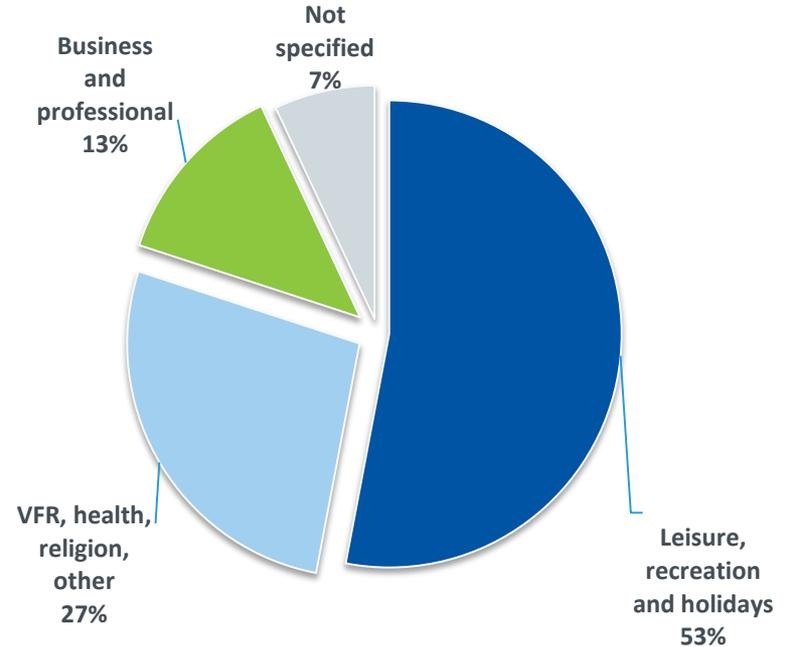
# 35%

**Air transport carries around 35% of world trade by value and less than 1% by volume<sup>25</sup>**

**\$6 trillion** worth of goods was transported internationally by air in 2017



Inbound tourism by mode of transport 2017

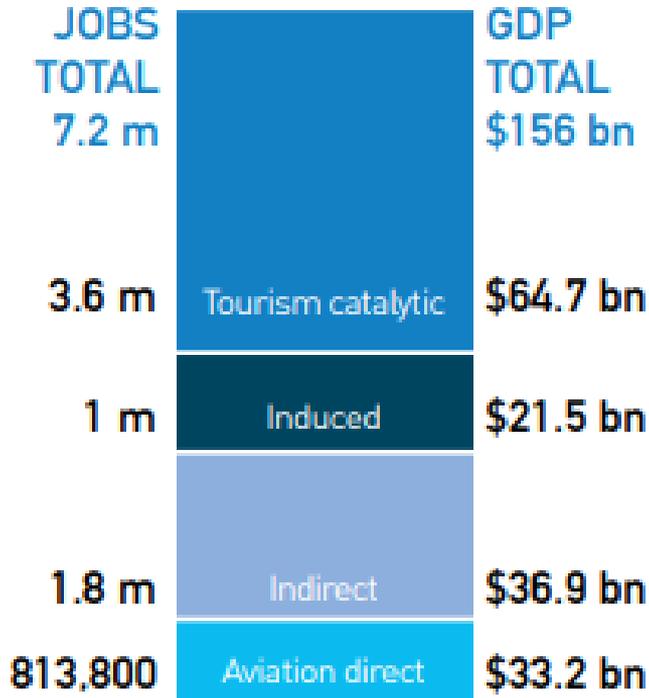


Inbound tourism by purpose of visit 2017



# Aviation economic benefits to Latin America/Caribbean

## Total jobs and GDP supported by aviation in Latin America/Caribbean, 2016



Air transport supports **7.2 million** jobs and **USD 156 billion** in GDP in Latin America and the Caribbean

That is **2.8%** of all employment and **3.3%** of all GDP in the region in 2016



The check list below provides a guide for maximizing aviation benefits in a sustainable manner. The implementation of this check list will require leadership and concerted, coordinated actions from public authorities at all levels, together with aviation stakeholders, financial sectors, and international and regional organizations.

**Economic Development Planning** – Mainstream the priorities of the aviation sector in States' economic development planning so that aviation can be used as an economic development driver.

**Air Transport Regulatory Framework** – Establish and apply good governance for air transport, i.e. the institutional, regulatory, and policy frameworks, in which air transport is designed, implemented and managed.

**Aviation Infrastructure** – Develop quality aviation infrastructure (including air navigation systems and airports) commensurate with the level of predicted traffic growth and based on ICAO's global plans.

**Resource Mobilization** – Promote diversified funding and financing sources in partnership with States, international and regional organizations, the industry, as well as multi-lateral development banks and other financial institutions.

**Safety and Security** – Comply with ICAO's global standards and policies, as well as the industry standards to continue enhancing civil aviation safety and security.

**Environmental Protection** – Reinforce efforts toward minimizing the environmental effects from civil aviation activities, especially the achievement of the aspirational goals of carbon neutral growth from 2020.

**Public Engagement** – Foster an informed and engaged public as a crucial partner to advance sustainable air transport solutions.



## Focus Areas for Economic Development of Air Transport

Lower impediments to air transport operations

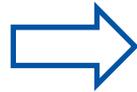
Increased use of aviation as a development tool

Improved data, analysis and forecasting



# Maximizing aviation benefits: Economic development of Air Transport

**Lower impediments  
to air transport  
operations**



## **Aspirational Goal 1**

**Access to air transport for all people, to move at  
minimum time, with maximum satisfaction and  
minimum costs**

### **Enablers:**

- Globally harmonized air transport regulatory framework in line with the ICAO Long-Term Vision for International Air Transport Liberalization
- Good regulatory practices and governance, i.e. the institutional, regulatory, and policy frameworks in which air transport is designed, implemented and managed



# Maximizing aviation benefits: Economic development of Air Transport

Increased use of  
aviation as a  
development tool



## Aspirational Goal 2

No constraints of infrastructure, capacity,  
technology and financial resources for aviation  
development

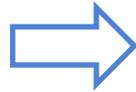
### Enablers:

- National and/or regional economic development programmes and plans incorporating the development and modernization of quality aviation infrastructure
- Pragmatic measures to build a transparent, stable and predictable investment climate



# Maximizing aviation benefits: Economic development of Air Transport

Improved data,  
analysis and  
forecasting



## Aspirational Goal 3

Full transparency in air transport with the  
availability of necessary information for data-  
driven decision- and policy-making

### Enablers:

- Framework to enhance regulatory transparency and openness
- Data science to extract knowledge and insights from big data (an umbrella term for the explosion in the quantity and diversity of high frequency digital data)



2017



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**谢谢 Xie Xie**  
**Thank You**  
**شكرا, Shukran**  
**Merci**  
**Gracias**  
**Спасибо, Spasiba**

