FREIGHTOS

Freightos Air Index™ (FAX) Guide

June 2024

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Introduction

This is the official guide according to which Freightos calculates and publishes the Freightos Air Index (FAX). Note that the FAX indexes are not currently certified as compliant with IOSCO, the UK Benchmark Regulation (BMR) or any other third-party regulations or standards.

About the Freightos Air Index (FAX)

Freightos Air Index (FAX) is the leading pricing index of the air cargo industry. Air cargo is transitioning to real time prices, and FAX is recognized as a critical industry resource allowing airlines, freight forwarders, importers/ exporters and others to track the industry price in real time. Doing so can help them improve their business efficiency.

In this respect, FAX is like the Dow Jones index of air cargo, and along with FBX container index, it is an important part of Freightos' mission to bring modern efficiency and agility to international shipping. FAX, FBX and more are available on Freightos Terminal.

All FAX data is sourced from actual booked digital rates and/or real offered digital rates on WebCargo by Freightos. WebCargo is by far the largest digital booking platform for air cargo, serving dozens of airlines, 3,500+ freight forwarders across 10,000+ offices and accounting for thousands of bookings per day. This makes FAX the most comprehensive and reliable index of air cargo market pricing.

FAX is published each day giving an indicative all-in spot rate for general cargo in US$ per kilogram for the previous 7 days on a rolling basis in three weight breaks of 100-300 and 300-1,000 and 1,000-3,000 kilograms. FAX is provided for:

- Global (one number, no weight breaks)
- Region to region (available weekly for free)
- Subregion to subregion
- Hub airport to subregion (see the list of hub airports here)
- Hub airport to hub airport

FAX is produced according to expert legal advice as we strive to ensure full compliance with competition law and data licensing requirements. Note that the standard FAX license is for information only, and does not entitle users to use the FAX for index linking, hedge fund use or as an underlying index for any kind of future contracts or derivatives. Expanded licenses can be purchased - if you are interested in using the FAX for any of these purposes, please contact us for additional details and pricing.
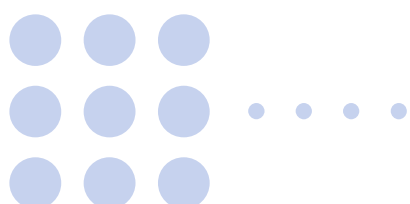
Industry Background

Over the past 20 years, passenger air travel has moved to dynamic and transparent pricing. This has encouraged more competition amongst legacy airlines, new airlines entering the industry, better utilization of assets (aircraft utilization in terms of full seats) and ultimately cheaper prices and a better experience for travelers.

Unfortunately, until recently air cargo was left behind with mostly static, opaque rates resulting in under-utilization of assets, with load factors of below 50% (even as passenger load factors climbed above 80%):
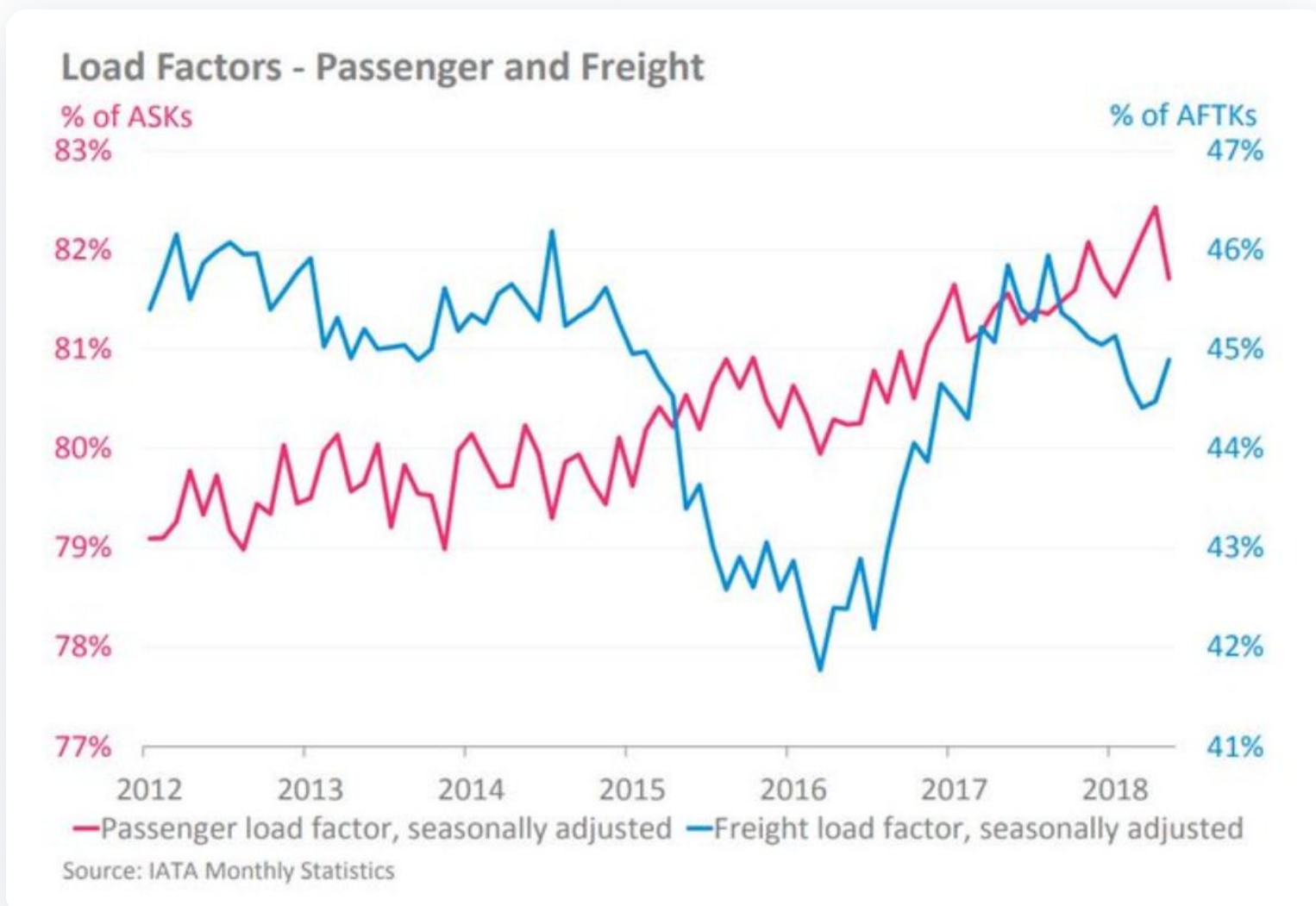
The air cargo industry is **even more competitive and fragmented than passenger travel**. This is because while passengers have a strong preference for non-stop flights, cargo generally doesn't. So if we take the New York-London route as an example, in addition to several direct carriers, carriers could compete to fly the cargo via Frankfurt, Amsterdam, Oslo, Helsinki, Madrid, Tel Aviv, etc. This means there may be 20+ competitors for this route. It is rare for one carrier to have more than 10-20% of the air cargo market in any trade lane.

This highly fragmented market suggests that more transparent data will help to lead to more competitiveness. The FAX is designed to promote competition.

FAX is not the only pricing index for air cargo. However, it is the only one that is updated daily and the only one that relies exclusively on electronic rates and bookings, making it more reliable and far more timely than indexes based on retrospective self reporting.

About WebCargo by Freightos

WebCargo by Freightos has been distributing air cargo rates from airlines to freight forwarders since 2008. In recent years, WebCargo has also partnered with airlines to transmit real-time dynamic rates from airlines to forwarders and electronic bookings from forwarders to airlines. Airlines with such digital capabilities are listed here. WebCargo works with more than 3,500 forwarders across 10,000+ offices.

Here is an example of what a freight forwarder searching for both static and dynamic rates on WebCargo Air would see (rates are not real) :

Freightos uses this dynamic rate data, and especially actual bookings, to calculate the FAX. FAX helps airlines to become more competitive with their dynamic prices and respond more quickly to changes in the industry. By calculating the FAX, Freightos hopes to replicate and encourage some of the positive changes seen over the past 20 years in air passenger travel. Similarly this should allow forwarders and shippers to be able to buy capacity more efficiently and choose more competitive prices.

About Freightos Air Indexes (FAX) - Price Indexes

Freightos Air Index (FAX) includes a set of indexes that reflect the air cargo spot (short term) rates across global trade lanes.

The data sources are:

- **Actual booked rates** from spot eBookings transmitted from air freight buyers to airlines via the WebCargo platform; we consider this data to be of the highest quality, and therefore it is given preference when calculating indexes ("**Booked Rates**").

- **Dynamic rates** are distributed by airlines to air freight buyers by electronic API calls; these rates may only be valid for a few minutes or hours and are bookable rates against confirmed capacity. We only use these dynamic rates in the calculation of the indexes in cases where there are insufficient actual bookings. In such a case, we will use both the actual booked rates and the dynamic rates ("**Dynamic Rates**").

The Indexes

FAX consists of the following indexes:

- Global (one number, no weight breaks) - a global average rate
- Region to region
- Subregion to subregion
- Hub airport to subregion
- Hub airport to hub airport

Naming

Official Region-Region Indexes

Each index is named FAX-[origin region code]-[destination region code][-b if beta]

For example

- **FAX-EU-NA** Europe to North America, all weight breaks, live
- **FAX-EU-AF-B** Europe to Africa, beta

Full list of region codes is below.

What Does the FAX Price Represent

FAX aims to include all compulsory fees paid to the airline by its customer (the air freight buyer). This includes the airfreight fee, fuel and security surcharges, and seasonal surcharges. While we work hard to include all relevant fees, we cannot guarantee that all airlines include all relevant fees in every case.

FAX prices exclude any fee that is not compulsory, for example fees for x-ray screening (in countries where this does not apply to all shipments), fees for paper air waybills (that do not apply for electronic waybills), fees for any value added services that are not compulsory for all shipments. Here too, we cannot guarantee that such fees are never included in the bookings or dynamic rates used to calculate FAX, as some airlines do not define clearly what fees are included in their price quotes and bookings.

All prices and fees are converted into USD at a middle market rate on the day the dynamic rate was quoted or the booking was requested. The exchange rate is obtained from a leading financial data source.

The per kg rate is calculated based on the standard chargeable weight (the greater of the actual gross weight and 166kgs, multiplied by the volume in cubic meters). In some cases airlines may use a different density volumetric ratio, but for consistency, the FAX rate per kg is always based on this chargeable weight calculation.

Compliance

FAX is calculated and published according to expert legal advice as we strive to ensure full compliance with competition law and data licensing requirements.

Every index published for specific airport pairs includes data from at least 5 independent carriers to ensure no one can ever reverse engineer the price of a specific competitor, in line with recognized "safe harbors" of competition law. In a case where a specific index temporarily has less than 5 independent carriers, but still has at least 3 independent carriers, the index will be published, given that users cannot know what airlines are in the mix, and therefore cannot leverage the temporary dip to 3 or 4 carriers to reverse engineer the price of any one specific airline.

For this purpose, carriers in a single company group who are known to coordinate prices will not be counted separately as independent carriers. For example we count the airlines in the IAG group as one independent carrier, and Air France/KLM/Martinair as one independent carrier. Unless we have information to the contrary, we generally assume that each carrier with a separate API is independent.

For region-region trade lanes (including subregions), the data used is an average of dozens of airport pairs and is therefore less sensitive. As a result, for compliance purposes we accept 3 independent carriers for regional indexes (although there are almost always many more than 3).

Custom Reports

Note that IATA forwarders have access to all airline rates, and therefore may legally see lanes that do not include 5 carriers. We have the technical ability to show additional "FAX+" routes privately to such parties including rates on lanes where we don't have 5 independent carriers.

FAX Regions and Subregions

Big regions are denoted by two capital letters. 23 subregions are denoted by two capital letters followed by a lowercase letter. Airports are denoted with their IATA code of three capital letters.

We divide the world into 12 regions, each with a two letter code. For example **FAX-EU-NA** will be rates from Europe to North America. **FAX-USW-IN will be US West to India/South Asia**. The regions are loosely based on United Nations geoscheme regions and subregions with some adjustments to fit the reality of the air cargo industry, as follows:

1. **NA North America** (UN subregion, countries: US, CA)
    a. **CAE Americas, Canada East** (CA > -100° Longitude)
    b. **CAW Americas, Canada West** (CA< -100° Longitude)
    c. **USC Americas, US Central** (US -85° - -110° Longitude)
    d. **USE Americas, US East** (US <85° Longitude)
    e. **USW Americas, US West** (US >110° Longitude)
2. **EU Europe** (UN region)
    a. **EUE Europe, Eastern** (UN subregion less RU)
    b. **EUN Europe, Northern** (UN subregions Northern Europe + Western Europe)
    c. **EUS Europe, Southern** (UN subregion)
    d. **RUS Europe, Russia** (RU)
3. **CN China (Greater)** (CN, HK, TW, MO)
4. **IN India and Southern Asia** (UN subregion Southern Asia)
5. **AC Central Asia** (UN subregion plus MN, KP, IR)
6. **SE Southeast Asia** (UN subregion)
7. **JP Japan** (JP)
8. **KR Korea** (South Korea KR)
9. LA **Americas, Latin & Caribbean** (UN subregion)
    a. **CRN Americas, Caribbean** (UN intermediate region)
    b. **AMC Americas, Central** (UN intermediate region)
    c. **AMS Americas, South** (UN intermediate region)
10. **ME Middle East** (UN subregion Western Asia)
11. **AF Africa** (UN region)
    a. **AFN Africa**, Northern (UN subregion)
    b. **AFS Africa**, Sub-Saharan (UN subregion)
12. **OC Oceania** (UN region)
    a. **AUS Oceania, Australia** (AU)
    b. **NZD Oceania, New Zealand & Pacific Islands** (UN Region Oceania -AU)

Regions are shown below:

Europe

- ■ EU Europe
- ■ NA North America
- ■ CN China
- ■ IN India and Southern Asia
- ■ AC Central Asia
- ■ SE Southeast Asia
- ■ JP Japan
- ■ KR Korea
- ■ LA America, Latin & Caribbean
- ■ ME Middle East
- ■ OC Oceania
- ■ AF Africa
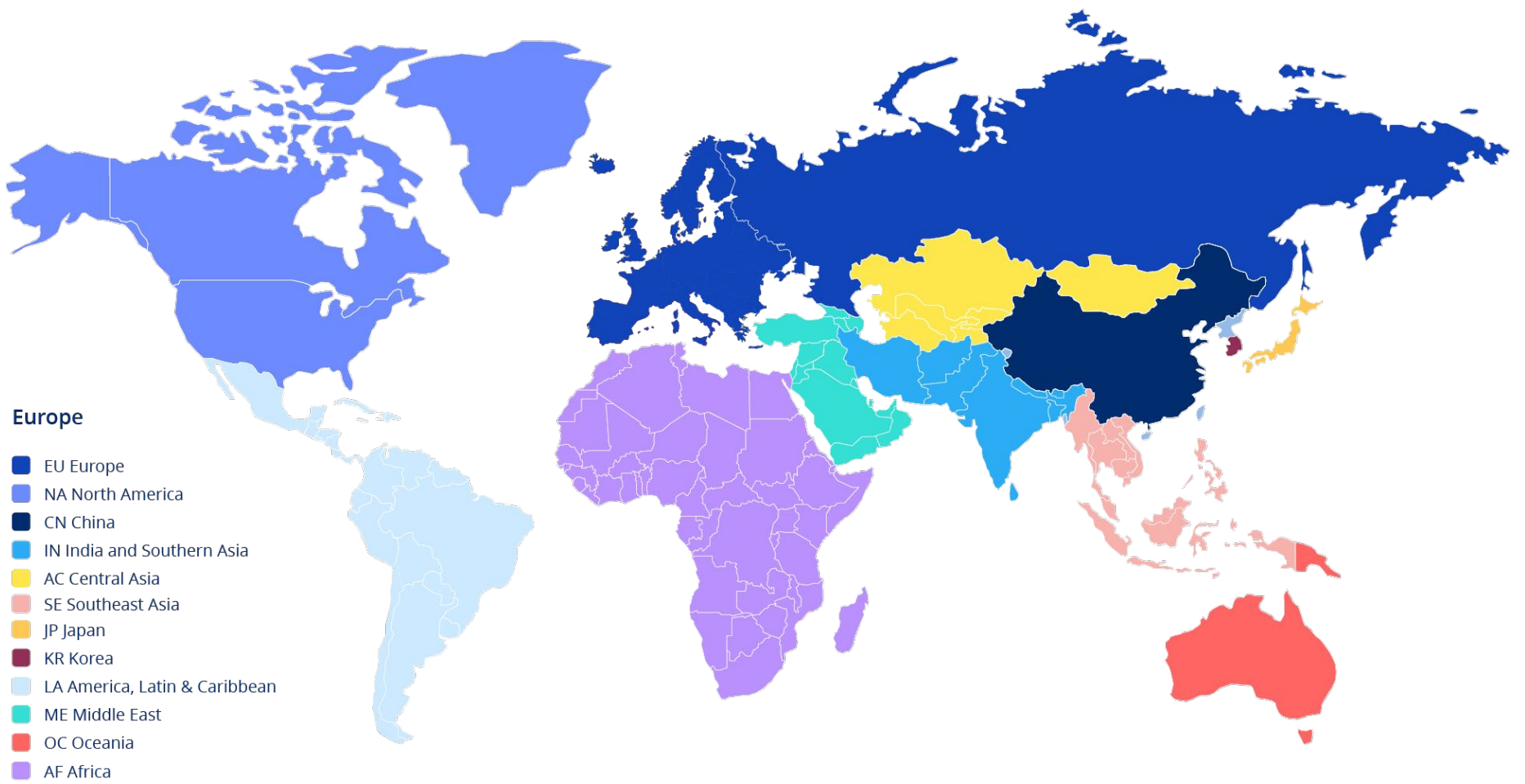
Created with mapchart.net

Weight Breaks

FAX indexes include all bookings of **100-3,000** kilograms. Bookings of less than 100kg are excluded because the price tends to be dominated by flat fees and not price per kilogram. Bookings of over 3000kg are excluded for now because the number of airlines offering eBookings of such large shipments is smaller.

FAX uses three weight breaks, plus groupings of the weight breaks

- **100-300kg** 100kg <= chargeable weight < 300kg
- **300-1,000kg** 300kg <= chargeable weight < 1,000kg
- **1,000-3,000kg** 300kg <= chargeable weight < 1,000kg
- For convenience we also have groups of the above weight breaks **100-1,000, 300-3,000 and 100-3,000**.

The weight breaks reflect the fact that some airlines give discounts for "weight breaks" over 300kg and again at 1,000kg. Additionally, any flat fees contribute less for larger weights, making the overall rate sometimes appear cheaper.

Hub Airports

The following are the hub airports, or in a few cases clusters of airports around the same city (e.g. JFK/EWR). We publish FAX for pairs of hub airports and hub airport to subregion:

Region	Subregion	Country	Airport(s)	Name
AF	AFn	EG	CAI	Cairo International Airport
CN	CN	CN	CAN	Baiyun Airport
CN	CN	CN	HKG	Hong Kong International Airport
CN	CN	CN	PEK	Beijing Capital International Airport
CN	CN	CN	PVG	Pudong Airport
CN	CN	TW	TPE	Chiang Kai-Shek International Airport
EU	EUn	BE	BRU	Brussels International Airport
EU	EUn	DE	FRA	Frankfurt International Airport
EU	EUn	FR	CDG	Charles De Gaulle International Airport
EU	EUn	GB	LHR/LGW	London Heathrow Airport, London Gatwick Airport
EU	EUn	NL	AMS	Schipol Airport
EU	EUs	ES	BCN	Barcelona Airport
EU	EUs	ES	MAD	Barajas International Airport
EU	EUs	GR	ATH	Athens International Airport
EU	EUs	IT	MXP/LIN/SWK	Malpensa International Airport, Linate Airport, Segrate Airport
JP	JP	JP	HND	Tokyo International Airport
JP	JP	JP	ITM	Osaka International Airport

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Region	Subregion	Country	Airport(s)	Name
JP	JP	JP	NRT	Narita International Airport
KR	KR	KR	ICN	Incheon International Airport
LA	AMc	MX	MEX	Benito Juarez International Airport
LA	AMs	AR	EZE	Ministro Pistarini International Airport
LA	AMs	BR	GRU	Guarulhos International Airport
LA	AMs	BR	VCP	Viracopos
LA	AMs	CL	SCL	Benitez International Airport
LA	AMs	CO	BOG	Eldorado International Airport
LA	AMs	EC	UIO	Mariscal Sucre International Airport
LA	AMs	PE	LIM	Jorge Chavez International Airport
ME	ME	AE	DXB	Dubai International Airport
ME	ME	IL	TLV	Ben Gurion International Airport
ME	ME	QA	DOH	Doha International Airport
ME	ME	TR	IST	Ataturk International Airport
NA	CAe	CA	YUL	Montreal Dorval Airport
NA	CAe	CA	YYZ	Lester B Pearson International Airport
NA	CAw	CA	YVR	Vancouver International Airport
NA	CAw	CA	YYC	Calgary International Airport
NA	USc	US	DEN	Denver International Airport
NA	USc	US	DFW	Dallas/Fort Worth International Airport
NA	USc	US	MEM	Memphis International Airport
NA	USc	US	ORD	O'Hare International Airport
NA	USc	US	SDF	Louisville International Airport-SDF
NA	USe	US	ATL	Hartsfield Jackson Atlanta International Airport
NA	USe	US	BOS	Logan International Airport
NA	USe	US	CLT	Charlotte/Douglas International Airport
NA	USe	US	JFK/EWR	Newark Liberty International Airport, John F. Kennedy International Airport
NA	USe	US	MIA	Miami International Airport
NA	USw	US	ANC	Ted Stevens Anchorage International Airport
NA	USw	US	LAS	McCarran International Airport

Region	Subregion	Country	Airport(s)	Name
NA	USw	US	LAX	Los Angeles International Airport
NA	USw	US	SEA	Seattle-Tacoma International Airport
NA	USw	US	SFO	San Francisco International Airport
SE	SE	ID	CGK	Soekarno-Hatta International Airport
SE	SE	MY	KUL	Kuala Lumpur International Airport
SE	SE	SG	SIN	Changi International Airport
SE	SE	TH	BKK	Don Muang International Airport

Note that we cluster together the following airports that serve the same metropolitan area

- New York City: JFK/EWR
- London: LHR/LGW
- Milan: MXP/LIN/SWK

Index Status

Total potential number of FAX indexes:

- 28,987 indexes
  - Airport-airport - 54 * 54 * 6 weight breaks = 17,496 indexes
  - Region-region - 12 * 12 * 6 = 864 indexes
  - Subregion-subregion - 23 * 23 * 6 = 3,174 indexes
 - Airport-subregion - 54 * 23 * 6 = 7,452 indexes
  - Global - 1 index

We have a master list of the potential indexes and the current status for each one - dead/experimental/beta/live/ live under review. The way their status is determined is set out below:

	Airport-Airport	Region-region Subregion-subregion Airport-subregion
"Experimental" quality	Dynamic rates from 5+ carriers	Dynamic rates from 3+ carriers
"Beta" quality	5 Booked Rates from 2+ carriers and Dynamic Rates from 5+ carriers	5 bookings from 2+ carriers and rates from 3+ carriers
"Live" quality	20 Booked Rates from 5+ carriers	20 bookings from 4+ carriers
Initiating experimental index	Experimental quality for 4 consecutive weeks Sun-Sat	
Promoting to beta index	Beta quality for 4 consecutive weeks Sun-Sat	
Promoting to live index	Live quality for 4 consecutive weeks Sun-Sat + human review of the underlying data and calculation.	
Live under review	Fails to meet relevant experimental/beta/live quality for 4 consecutive weeks. For a "live" index, human review of the underlying data and calculation before demoting and notifying the market.	

Index Inclusion

As of June 02, 2024 we have the following indexes live for 100-3000kg region to region

- FAX-AF-EU (Africa > Europe)
- FAX-JP-NA (Asia, Japan > Americas, Northern)
- FAX-EU-AF (Europe > Africa)
- FAX-EU-CN (Europe > Asia, Greater China)
- FAX-EU-EU (Europe > Europe)
- FAX-EU-IN (Europe > Asia, Southern)
- FAX-EU-JP (Europe > Asia, Japan)
- FAX-EU-KR (Europe > Asia, Korea)
- FAX-EU-LA (Europe > Americas, Latin & Caribbean)
- FAX-EU-ME (Europe > Middle East)
- FAX-EU-NA (Europe > Americas, Northern)
- FAX-EU-OC (Europe > Oceania)
- FAX-EU-SE (Europe > Asia, South-eastern)
- FAX-IN-NA (Asia, Southern > Americas, Northern)
- FAX-NA-AF (Americas, Northern > Africa)
- FAX-NA-EU (Americas, Northern > Europe)
- FAX-NA-IN (Americas, Northern > Asia, Southern)
- FAX-NA-LA (Americas, Northern > Americas, Latin & Caribbean)
- FAX-NA-ME (Americas, Northern > Middle East)
- FAX-NA-SE (Americas, Northern > Asia, South-eastern)
- FAX-AF-AF (Africa > Africa)
- FAX-AF-NA (Africa > Americas, Northern)
- FAX-EU-AC (Europe > Asia, Central)
- FAX-IN-AF (Asia, Southern > Africa)
- FAX-IN-EU (Asia, Southern > Europe)
- FAX-IN-LA (Asia, Southern > Americas, Latin & Caribbean)
- FAX-JP-EU (Asia, Japan > Europe)

- FAX-ME-ME (Middle East > Middle East)
- FAX-KR-NA (Asia, Korea > Americas, Northern)
- FAX-SE-NA (Asia, South-eastern > Americas, Northern)
- FAX-CN-EU (Asia, Greater China > Europe)
- FAX-AF-LA (Africa > Americas, Latin & Caribbean)
- FAX-LA-EU (Americas, Latin & Caribbean > Europe)
- FAX-LA-CN (Americas, Latin & Caribbean > Asia, Greater China)
- FAX-NA-OC (Americas, Northern > Oceania)
- FAX-NA-KR (Americas, Northern > Asia, Korea)
- FAX-NA-CN (Americas, Northern > Asia, Greater China)
- FAX-JP-AF (Asia, Japan > Africa)
- FAX-KR-AF (Asia, Korea > Africa)
- FAX-KR-EU (Asia, Korea > Europe)
- FAX-JP-ME (Asia, Japan > Middle East)
- FAX-KR-ME (Asia, Korea > Middle East)
- FAX-JP-IN (Asia, Japan > Asia, Southern)
- FAX-KR-IN (Asia, Korea > Asia, Southern)
- FAX-SE-AF (Asia, South-eastern > Africa)
- FAX-SE-EU (Asia, South-eastern > Europe)
- FAX-SE-ME (Asia, South-eastern > Middle East)
- FAX-SE-IN (Asia, South-eastern > Asia, Southern)
- FAX-LA-KR (Americas, Latin & Caribbean > Asia, Korea)
- FAX-LA-ME (Americas, Latin & Caribbean > Middle East)
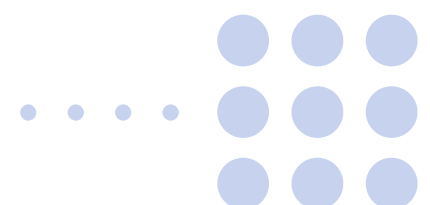
Calculation

As noted above, our data is collected from both Booked Rates and Dynamic Rates.

Booked Rates are of the highest quality. We use the **median** $/kg across all relevant Booked Rates as the FAX price. For live FAX indexes we use Booked Rates data only.

We consider Dynamic Rates as lower quality data. We use the **5th percentile**, which, based on our assessment of the rates, correlates closely to the median Booked Rate.

For "beta" indexes we may use a combination of Booked Rates and Dynamic Rates.

In the very rare case where we see rates (either Dynamic Rates or Booked Rates) exceeding $200/kg, they are excluded as outliers. We plan to review this policy in January 2025, with the aim to implement an enhanced outlier detection and exclusion mechanism grounded in statistical data.

The index value is calculated for each specific airline for the week, airport pairs and weight breaks as:

 W * B + (1 - W) * R

Where

- **B is the index of Booked Rates, specifically the median $/kg of all Booked Rates**
- **R is the index of Dynamic Rates**, specifically 5th percentile of Dynamic Rates electronically quoted by airline
- **W is the weighting we give to Booked Rates versus Dynamic Rates**, specifically the lesser of #bookings * 5% and #distinct carriers booking * 20%, (capped at 100%)
  - For example, if we have 5 Booked Rates from 2 carriers, W is min(20%*2, 5%*5) = 25%
  - If we have at least 20 Booked Rates from 5 distinct carriers, FAX is based on Booked Rates only

Here again, we count the airlines in the IAG group as one independent carrier, and Air France/KLM/Martinair as one independent carrier.

FAX Global Index Calculation

FAX Global Index is a single top-level headline index reflecting global trends in air cargo prices. It is a weighted average; the weighting for each origin Region being very roughly based on that origin's share of the air cargo across the world.

Origin Region	Weighting
Asia	30
Europe	30
North America	30
All other regions	5

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