



Assessment of the impact of the recent typhoon activity in Asia

- We estimate that the two category 5 typhoons that hit Asia in September, Jebi and Mangkhut, disrupted around 0.5% of global air passenger activity.
- While much of the disrupted activity seems to have been made up in the following days and weeks, year-on-year passenger growth for Asia-Pacific airlines in September is likely to be around 0.3-0.6 percentage points slower than it would have been without the typhoons.
- Overall, the disruption is likely to have resulted in a net revenue loss of US\$60-100m for the industry.
- Except for agricultural areas in the Philippines, the impact of the two typhoons on aviation activity is expected to be mostly temporary, with many airports and important business centers having rapidly reopened.

Introduction

September was a busy month of hurricane and typhoon activity around the world, including hurricane Florence in the US and numerous typhoons in East Asia.

Given their high-profile impacts on aviation – particularly the complete closure of KIX for a large part of the month -- this note focuses on the impact that typhoons Jebi and Mangkhut had on air passenger and freight activity.

Two category 5 typhoons in East Asia in September

Typhoon Jebi landed in Japan's southern coast on September 4, near Osaka, before reaching Kyoto in the following hours. While not at peak intensity when it hit land, it was the strongest typhoon in Japan since 1993's Yancy.

Figure 1 – Trajectory and strength of typhoon Jebi
(Source: <https://en.wikipedia.org>)



Typhoon Mangkhut hit the Philippines at peak intensity on September 15, mostly affecting Luzon island, and subsequently reached south east China (Guangdong province and Hong Kong, SAR) on September 16. The storm dissipated over China the next day. It was the most powerful typhoon to hit the Philippines since 2013's Haiyan, and the strongest to hit Hong Kong, SAR since typhoon Hope in 1979.

Figure 2 – Trajectory and strength of typhoon Mangkhut
(Source: [nytimes.com](https://www.nytimes.com))



Many regional and international airports were affected to various degrees by the typhoon activity in September, including MFM (Macau), HKG (Hong Kong) as well as CAN (Guangzhou) and SZX (Shenzhen) in China for Mangkhut, and KIX (Kansai) and ITM (Itami) for Jebi. While Mangkhut impacted the Philippines, the disruption at the major airport of MNL (Manila) was minimal.

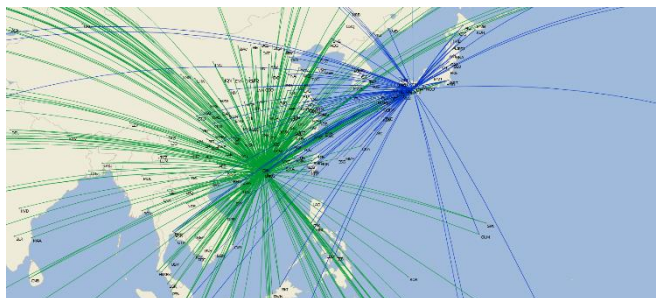
In Japan, following flooding and damage to infrastructure, Kansai Airport was completely shut from September 4 to September 7. It remained mostly closed until September 14, and only went back to full capacity on September 21, totaling more than two weeks of disruption. Only a limited share of flights could be operated or reallocated to nearby airports such as Itami.

In Hong Kong, it is reported that 889 flights were cancelled, mostly on Sunday the 16 September. Flights operations in general were still being affected in the following days. Guangzhou and Shenzhen airports were closed on Sunday and until Monday morning. With additional international flights cancelled throughout Luzon island and southern China, the total number of affected flights was significant, reaching at least 1,400 according to reports.

The potential for disruption in this part of Asia is high

The areas affected by typhoons Jebi and Mangkhut are important for aviation and the global economy more generally. Osaka, Shenzhen, Guangzhou and Hong Kong form one of the most dynamic regions in the world for manufactured goods production and services. Hong Kong in particular is a key hub for connecting traffic and the largest airport in the world by freight traffic. Osaka is a crucial center for trade and business in Japan and for the broader region.

Figure 3 - Scheduled flights at affected airports for Mangkhut (Green) and Jebi (blue) (Source: SRS Analyzer)



Moreover, the affected airports are also a highly important source of revenues for some of the largest Asia Pacific airlines, such as Cathay Pacific and China Southern Airlines, respectively based in HKG and CAN. In addition, Peach Airlines is mostly based in KIX, hence it also suffered from the disruption.

Tables 1 and 2 compare the magnitude of passenger and freight activity at the main affected airports. Airports affected by Mangkhut account for around 5% of global O-D (origin-destination) passenger traffic, and 9% of the world's freight tonne kilometers. Note that HKG sees a large number of passengers stopping as part of long-distance travels, hence the high amount of connecting

Table 1 – Comparison of passenger metrics by airport (Year-ended July 2018). Source: PaxIS

| | Passengers from and to | % world total passengers | Flights from and to | % world total flights | Revenues (O-D traffic) | Passengers connecting | Revenues (connecting traffic) |
|-----|------------------------|--------------------------|---------------------|-----------------------|------------------------|-----------------------|-------------------------------|
| HKG | 53.6m | 1.4% | 360,000 | 1.0% | US\$16.2bn | 9.6 m | US\$4.8bn |
| MFM | 7.5m | 0.2% | 58,000 | 0.2% | US\$1bn | 0.1 m | US\$27m |
| CAN | 60.3m | 1.7% | 456,000 | 1.2% | US\$10.8bn | 4 m | US\$ 1.4bn |
| SZX | 47.2m | 1.3% | 329,000 | 0.9% | US\$7.7bn | 0.5 m | US\$114m |
| KIX | 26.8m | 0.7% | 174,000 | 0.5% | US\$6.9bn | 0.5 m | US\$137m |
| ITM | 12.7m | 0.3% | 143,000 | 0.4% | US\$2.7bn | 1.1 m | US\$242m |

Table 2 – Comparison of freight metrics by airport (Year-ended July 2018). Source: CargoIS

| | Market FTKs | % world total FTKs | Market revenues | % world total revenues |
|-----|-------------|--------------------|-----------------|------------------------|
| HKG | 11.2bn | 8.1% | US\$3.9bn | 11.2% |
| CAN | 1.2bn | 0.9% | US\$373m | 1.1% |
| SZX | 276m | 0.2% | US\$74m | 0.2% |
| KIX | 1.9bn | 1.4% | US\$668m | 1.9% |

traffic and revenue figures. Airports affected by Jebi amounts to around 1% of world's O-D passenger traffic, and 1.5% of world's freight tonne kilometers.

Mangkhut and Jebi had a significant impact on air transport activity...

Airports affected by Mangkhut were closed for roughly one day, and so was Itami during typhoon Jebi. Kansai was fully closed for 4 days, and only gradually got back to full operations over the next few weeks.

We estimate that around 0.5% of global passenger activity was disrupted by both category 5 typhoons, with around 0.2% attributed to Mangkhut and 0.3% attributed to Jebi. Even though Jebi affected fewer and smaller airports compared to Mangkhut, the disruption was longer, resulting in a higher impact on activity.

Much of this activity is likely to have been made up in the days after the disruption. All told, we estimate there will be an effective decrease of 0.1-0.2 percentage points in September's global passenger growth rate. This is driven primarily by the effect of the typhoon on Kansai, since Itami and the Japanese transportation network in general may have not absorbed all the cancelled traffic.

With Asian airlines accounting for more than 90% of the passenger traffic in affected airports, and because those airlines represent around one-third of the global passenger traffic, the impact of the typhoons is likely to be the most visible on regional performance in Asia Pacific. All told, we estimate that the year-on-year growth rate in Asia Pacific RPKs in September may be 0.3-0.6 percentage points lower than it would have been without the typhoons.

Regarding lost growth, the most affected airlines were those operating disrupted airports as their main hubs. A small percentage of non-Asian carriers may have been affected as well, due to loss in revenues for long-distance connecting traffic, especially in HKG and KIX.

Global freight activity was also disrupted, but this market is more flexible. In HKG, the disruption in freight is likely to have been planned around, and the impact should be relatively limited. Similarly, the affected volumes in KIX may have been diverted to other locations by train or ship, possibly at the price of higher costs.

...and an important net impact on financial performances

In terms of passenger revenue, we estimate that a total of US\$60-100m in net revenues was lost during the disruption. This is a small number at the industry-wide level, yet it may weigh on some of the affected airlines' financials in the short term.

In addition to lost revenues, airlines are likely to have incurred higher costs, including from passengers' re-accommodation as well as the cost of diverting flights. Costs imposed on passengers in term of lost time and opportunities are also significant.

On the other hand, airlines which cancelled flights will have saved on variable costs such as fuel, due to planes being grounded. Those costs may have offset part of the lost revenues for airlines.

Another potential indirect impact of the typhoons on airlines' operations is through jet fuel prices; reports

suggested that refineries in Southern China and bunkering operations in Hong Kong were temporarily halted. However, any impact did not last long, and there is little evidence of any marked impact on jet fuel prices in the region over the period.

Impact on overall economy is temporary

On the whole, we expect the impacts of Jebi and Mangkhut on aviation to have been temporary.

For example, the business sector in Hong Kong and Osaka has not been too strongly hit. Most offices were opened quickly after the passage of the storms, and the most common reaction seems to have been "business as usual". Most regional and international airports have reopened rapidly, and touristic centers such as Macau and Hong Kong have returned to their normal activities.

One possible exception to this short-lived impact is in the Philippines, where Mangkhut particularly hit the agricultural sector. Net wages and jobs will fall in the middle run due to damaged infrastructures, landslides and flooding. The country's agricultural secretary explained that the cost to this sector would reach US\$0.5bn. However, the effect on tourism is predicted to remain low, with key tourism areas in the south of the Philippine archipelago being mostly unaffected.

You can read additional analysis of the impact of shock events on aviation by IATA Economics [here](#).

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