

PRESS RELEASE

August 3, 2022

New Kansai International Airport Company

Kansai Airports

Report of KIX Air Traffic Demand Study Committee meeting

New Kansai International Airport Company and Kansai Airports announced that report was made at a meeting of the KIX Air Traffic Demand Study Committee held on Wednesday, August 3, 2022, as attached

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Interim Report on KIX Future Air Traffic Demand Study Committee

August 3, 2022

Purpose of establishment of KIX Future Air Traffic Demand Study Committee

Background

- The Japanese government is driving a concerted effort with the private sector to meet the govt's inbound goal (40 million visitors by 2020, 60 million by 2030). It is a pressing need for the govts and businesses in Kansai to fully capture **inbound tourism demand driven by the 2025 Osaka Kansai Expo and IR for the regional economic development**.
- Welcoming one-fourth of the total foreign visitors to Japan as an international gateway airport, KIX is **getting closer to its environmental cap** as evidenced by the FY2018 annual ATMs that topped 190,000 (environmental assessment cap of 230,000 ATMs/year established in 1998).

Purpose

- The purpose of the committee is to **study and analyze future air traffic demand for KIX** so that examination regarding the possibility of increasing slot capacity according to air traffic demand can be proceeded in order for KIX to **appropriately fulfill the role of meeting ever-growing air traffic demand in the future**.

* The above background and purpose were laid out when the committee was established in January 2020.

Meetings of KIX Future Air Traffic Demand Study Committee

Date		Agenda
1st	January 14, 2020	<ul style="list-style-type: none"> - Purpose of establishment of KIX Future Air Traffic Demand Study Committee - How to develop future air traffic demand forecast - Future steps
2nd	January 28, 2020	Presentations by committee members and stakeholders <ul style="list-style-type: none"> - Regional initiatives for local industries and businesses - Regional efforts to boost tourism, etc. - Prospects of the Kansai market
COVID-19 pandemic		
3rd	October 28, 2020	How to develop future air traffic demand forecast amid COVID-19 * Examine the impact of the pandemic which is deemed to significantly affect the committee's study and analysis
Reference: 11th meeting of Kansai Three Airport Council (January 13, 2022) As the committee finds it difficult to forecast future air traffic demand due to uncertainty over developments of the pandemic, it was decided to carry on the study toward the report at the next (12th) council meeting.		
4th	August 3, 2022	<ul style="list-style-type: none"> - Impact of COVID-19 - Draft interim report * Review of preconditions including the effect of the Expo 2025

1. Overview of study and analysis



1-1. Scope of study and analysis

Scope

- KIX int'l and dom pax and ATMs (incl. cargo)
- Estimate ATMs by time slot during the period of the 2025 Osaka Kansai Expo (April to October)

Method

- Apply 4-step model, a common method for transportation forecasting, by the following 3 categories
 - Int'l passenger flights (Int'l pax and ATMs)
 - Dom passenger flights (Dom pax and ATMs)
 - Cargo flights (Int'l and dom cargo volume and ATMs)

Time

- Base year* FY2018
- Forecast year FY2025
- Simulation FY2030 (simulate demand for a longer time span based on scenario cases)

* Year for which the gaps between forecast value of 4-step model and actual value were corrected

* Set at FY2018 considering the impact of the COVID-19 pandemic

* This compensated for the significant decrease in air demand due to the impact of Typhoon Jebi (No. 21)

1-1. Overview of study and analysis

Demand forecast for FY2025

Forecast annual pax and ATMs based on the case which estimates future macro demand (GDP, etc.) from actual air traffic demand in the past (base case scenario)

➤ Reflect demand growth due to the Expo

* Estimate the forecast value using a single scenario as the forecast year is the near future (3 years later)

Estimate of ATMs by time slot during the Expo 2025

Considering that hourly slot capacity was tight in FY2019, we estimate ATMs by time slot during peak hours to see if we can meet the demand during the Expo

Simulation for FY2030

In addition to the base case scenario, we estimate annual pax and ATMs based on the scenario cases (medium and upper) assuming the possible expansion of air traffic demand backed by economic growth and the govt's tourism policy

1-2. Int'l passenger flight demand forecasting model

Model structure

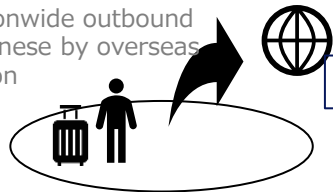
4-step model: (1) Trip generation -> (2) Trip distribution
-> (3) Route (airport) assignment

(1) Trip generation

Trips between Japan and overseas regions

Outbound Japanese

Nationwide outbound Japanese by overseas region



Nationwide trip generation model

- Projected based on population/GDP

Inbound foreigners

Outbound travelers by overseas region



Inbound foreigners by overseas region



Outbound travelers generation model

- Projected based on middle-/high-income population, per-capita real GDP, currency exchange, # of routes, LCC share, etc.

National economic growth (GDP)

Destination country assignment model

- Projected based on currency exchange, # of routes, airfare, LCC share, visa, price level, inter-state distance, tourism index, etc.

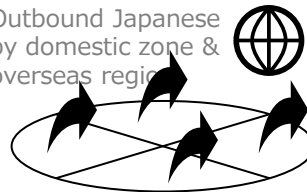
Japan selection rate (# of foreign visitors to Japan)

(2) Trip distribution

Trips between domestic zones and overseas regions

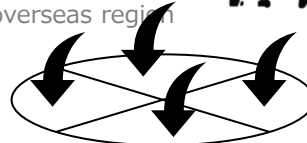
Outbound Japanese

Outbound Japanese by domestic zone & overseas region



Inbound foreigners

Inbound foreigners by domestic zone & overseas region



Destination assignment share model

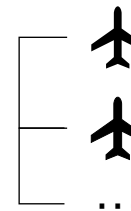
- Projected based on visitor attractiveness by domestic zone (GRP, etc.)

(3) Route (airport) assignment

Trips by route (airport)

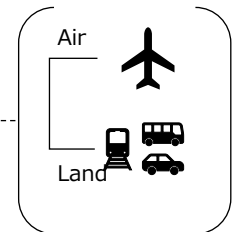
Outbound Japanese Inbound foreigners

By flight route



Airport accessibility

By airport access mode



Flight route assignment model

- Projected based on travel time, cost, service frequency and airport accessibility by route for each OD

Kansai network expansion (Routes, frequencies)

Airport accessibility estimation model

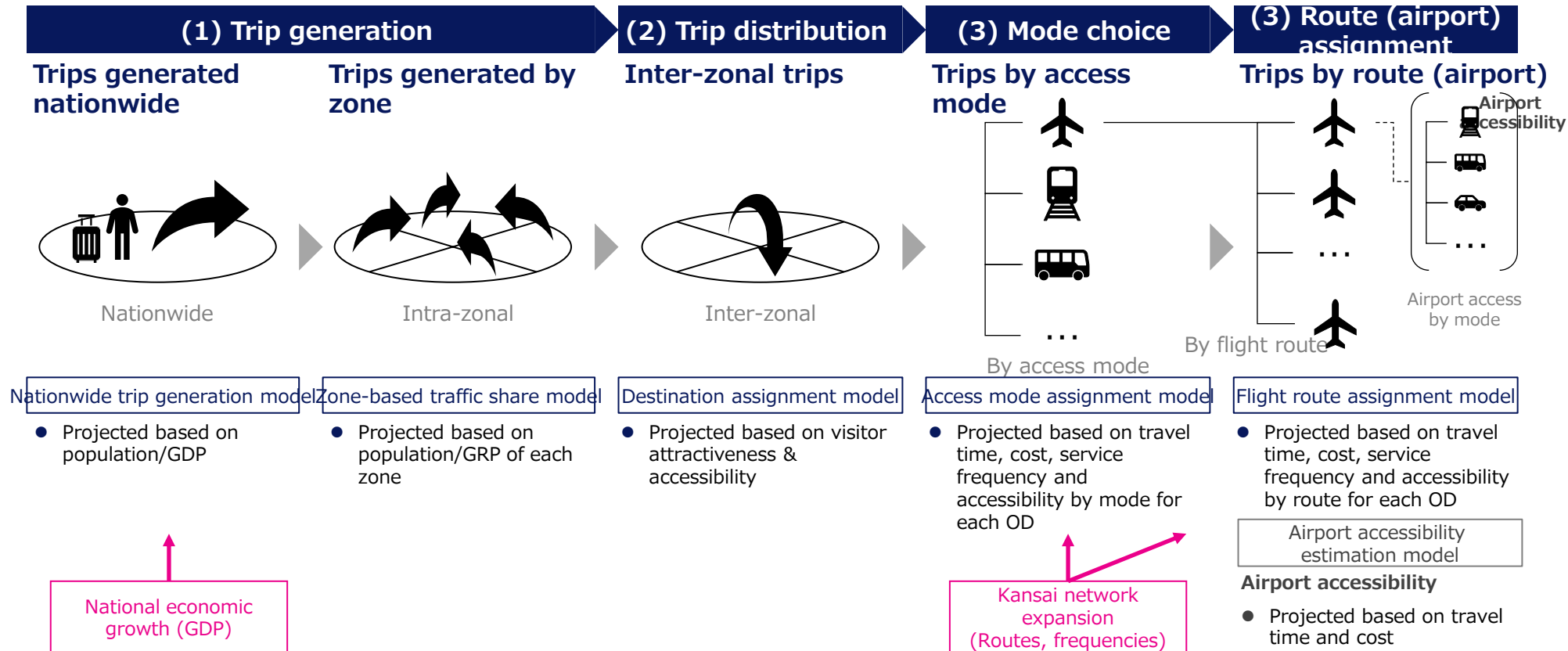
Airport accessibility

- Projected based on travel time and cost

1-2. Dom passenger flight demand forecasting model

Model structure

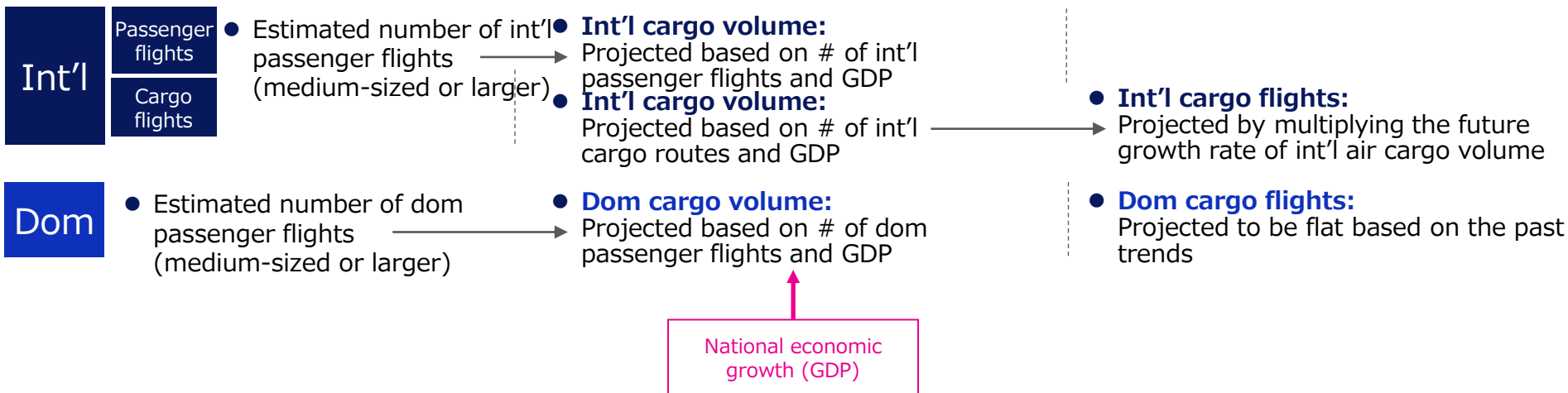
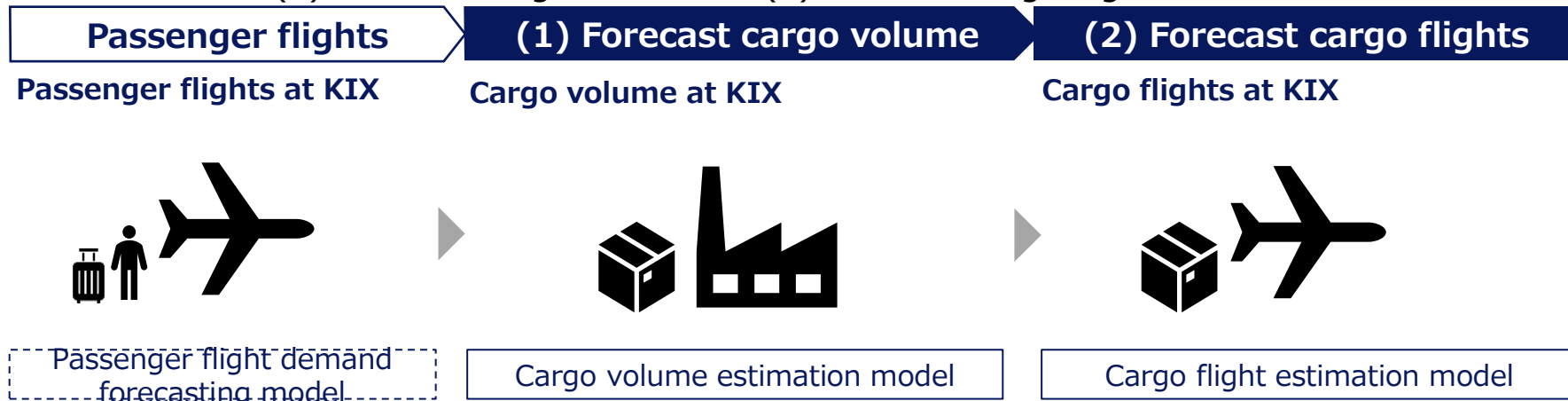
4-step model: (1) Trip generation -> (2) Trip distribution -> (3) Mode choice -> (4) Route (airport) assignment



1-2. Cargo flight demand forecasting model

Model structure

Reflect estimated number of passenger flights
 (1) Forecast cargo volume -> (2) Forecast cargo flights



1-3. Overview of preconditions: Demand forecast for FY2025

Trip generation	Int'l	Global population	United Nations' World Population Prospects 2019 (Medium fertility variant, 2020-2100)
		Economic growth	IMF's World Economic Outlook Database, October 2021 (April 2022)
		Exchange rate	IMF's World Economic Outlook Database, April 2022 (April 2022)
	Dom	Domestic population	Medium-Fertility (Medium-Mortality) Assumption in National Institute of Population and Social Security Research's Population Projections for Japan (2017)
Economic growth		Baseline Case in the Cabinet Office's Economic and Fiscal Projections for Medium to Long Term Analysis (submitted to the Economic Advisory Council in January 2022)	
Trip distribution	Int'l	Prefectures' real GRP	<p>Calculated as follows:</p> <ul style="list-style-type: none"> - Add the average change in real GRP over the past 10 years (FY2008 to FY2018) to the latest real GRP (FY2018) - Multiply the above by a proportional constant so that the sum of all prefectures' future real GRP equals to future real GDP
Mode choice Route (airport) assignment	Int'l	Int'l flight	<ul style="list-style-type: none"> • Flight routes: Based on routes as of October 2019 • Travel time: Based on levels as of October 2019 • Airfare: Based on carriers' average fare + fuel surcharge as of 2019 • Composition of aircraft models: Based on actual of FY2018
		Dom flight	<ul style="list-style-type: none"> • Flight routes: Based on levels as of October 2019 • Travel time: Based on levels as of October 2019 • Airfare: Based on average fare (estimate) as of FY2019 • Composition of aircraft models: Based on actual of FY2018
	Int'l Dom	Airport capacity	Dom demand forecast: Itami, Kobe, and Komaki airports are set within the limit of arrival/departure quotas of 2022 Int'l demand forecast: No cap
		Railway	<ul style="list-style-type: none"> • Shinkansen routes to be developed: <ul style="list-style-type: none"> - Assuming that Kyushu Shinkansen's route between Takeo-Onsen Station and Nagasaki Station will open on September 23, 2022 - Assuming that Hokuriku Shinkansen's route between Kanazawa Station and Tsuruga Station will open by end-FY2023 • Railway to airport <p>Reflecting the opening of New Umekita Station and JR's KIX Express Haruka making a stop at New Umekita Station from spring 2023</p>
		Automobile	Based on the routes of arterial high-standard highways opening in FY2019 + reflecting the development plan up to early FY2025 (Not reflecting the launch of arterial high-standard highways from FY2025 onward as the timing has yet to be determined)
		Bus	Based on fares as of October 2019 (estimate)

1-3. Overview of preconditions: Simulation for FY2030

		Base case	Medium case	Upper case
National economic growth (GDP)		0.8% (Baseline Case in the Cabinet Office's Economic and Fiscal Projections for Medium to Long Term Analysis submitted in January 2022)	1.8% (Economic Growth Achieved Case in the Cabinet Office's Economic and Fiscal Projections for Medium to Long Term Analysis submitted in January 2022)	
Foreigners' Japan selection rate		- (Projected based on destination country assignment model)	Refer to trends of past results* * Vary by country	Assume 60 million* inbound visitors * Govt's goal
Of all foreigners visiting Japan, Kansai visit rate		- (Projected based on destination assignment share model)	Set at 42.6%* (a record high achieved in FY2016) * Kansai visit rate in the Japan Tourism Agency's Consumption Trend Survey for Foreigners Visiting Japan	
Aviation network expansion	Int'l	- (Set at 2019 actual based on flight route assignment model)	Assume the launch of new routes	
	Dom	- (Set at 2019 actual based on flight route assignment model)	Assume the launch of new routes	

1-4. Impact of COVID-19 pandemic

- Reflect the impact of COVID-19 by factoring in the future economic outlook at home and abroad after the pandemic broke out
- Consider other factors that may affect air traffic demand as items not requiring action

Factor	Impact on air traffic demand	Impact on demand forecast	Action related to this study and analysis
Avoidance and restriction of travel	Forced decline in demand <ul style="list-style-type: none"> ➤ Avoidance and restriction of outing and travel ➤ Countries' entry restrictions 	Temporary event; no impact	No action required
Economic slowdown	Decline in demand due to reduced economic activities <ul style="list-style-type: none"> ➤ Companies' financial difficulties and bankruptcies ➤ Increased unemployment and decreased income 	Demand drop due to economic slowdown (worsening of companies' performance, decline in household income, etc.)	Reflecting forecasts released by IMF and Cabinet Office
Behavioral change	Decreased needs for travel <ul style="list-style-type: none"> ➤ Shift to work-from-home and remote meetings ➤ Virtual reality experience using VR technology 	Changes in behavior and sense of value related to travel; have impact	No action possible*
Decline in supply	Demand drop due to supply decline <ul style="list-style-type: none"> ➤ Airlines ➤ Tourism industry (hotels, etc.) 	If the impact of COVID-19 is prolonged, demand may be affected by the company's bankruptcy, etc.	Assuming that supply will be secured in response to demand in 2025

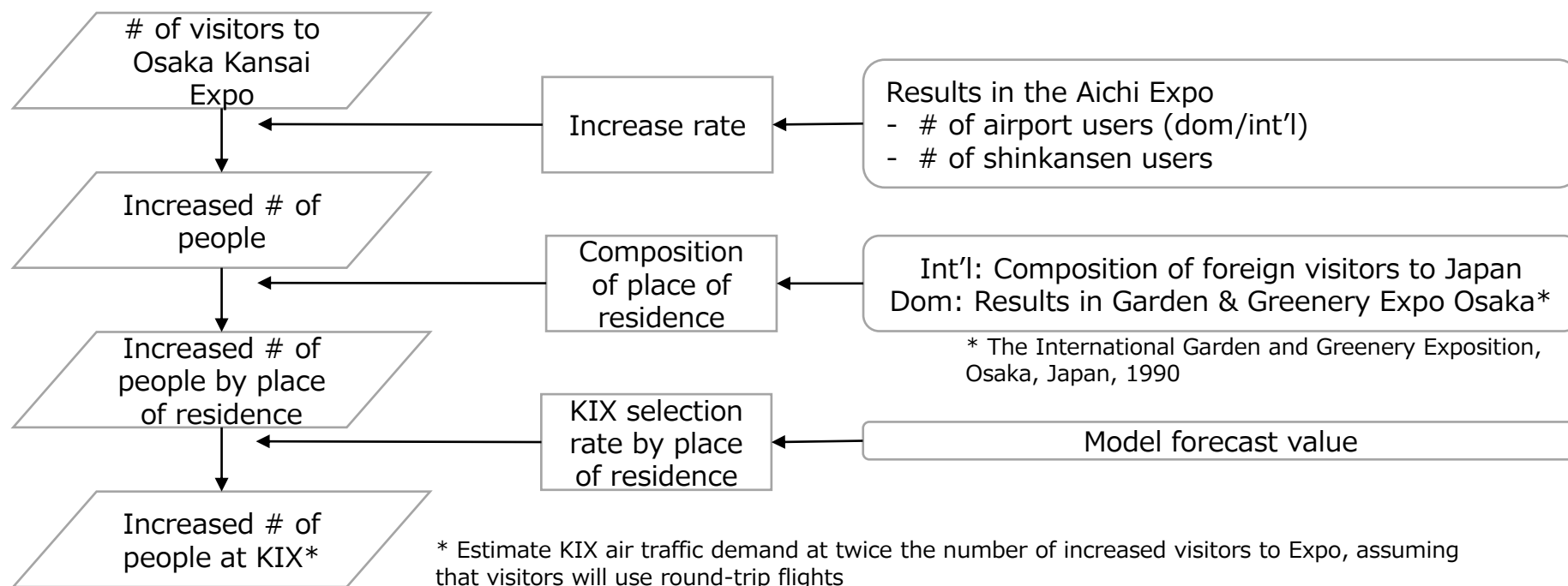
* It is difficult to indicate behavioral change in quantitative form since a model needs to be established using actual values after the change. It may be an idea to make a rough estimate through survey, etc., but we will not do so as such an estimate is not accurate enough.

1-5. Impact of 2025 Osaka Kansai Expo: Estimation method

Assume demand growth due to Expo (change of domestic travel destinations to Kinki region)

- Assume an increase rate based on trend analysis of Expo 2005 Aichi
- Align with the estimate by the Japan Association for the 2025 World Exposition (# of visitors, composition of place of residence, KIX selection rate by place of residence)

Estimation flow



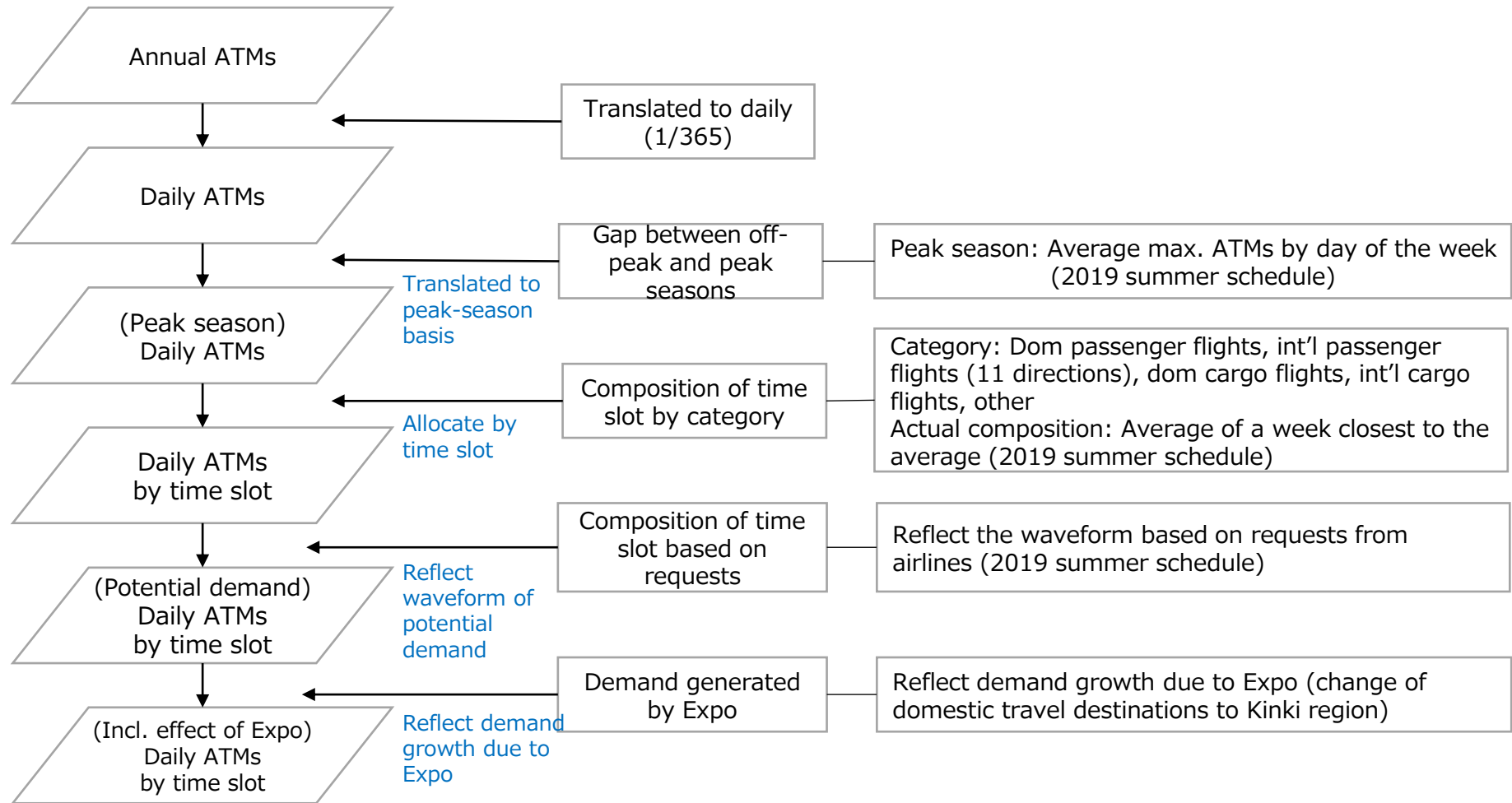
1-5. Impact of 2025 Osaka Kansai Expo: Results

Assume demand growth due to Expo
(change of domestic travel destinations to Kinki region)

		Demand growth due to Expo (Pax: K people, ATMs: K times)
Int'l passenger flights	Pax	698
	ATMs	4
Dom passenger flights	Pax	206
	ATMs	1
Total	Total pax	904
	Total ATMs	5

1-5. Estimate of ATMs by time slot during 2025 Osaka Kansai Expo: Estimation model

Estimation flow

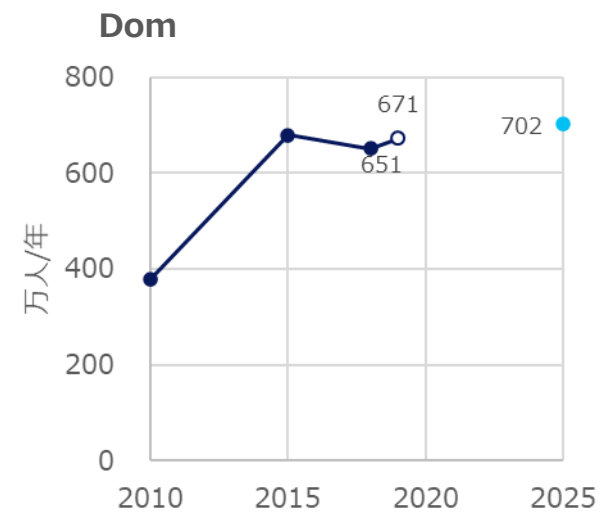
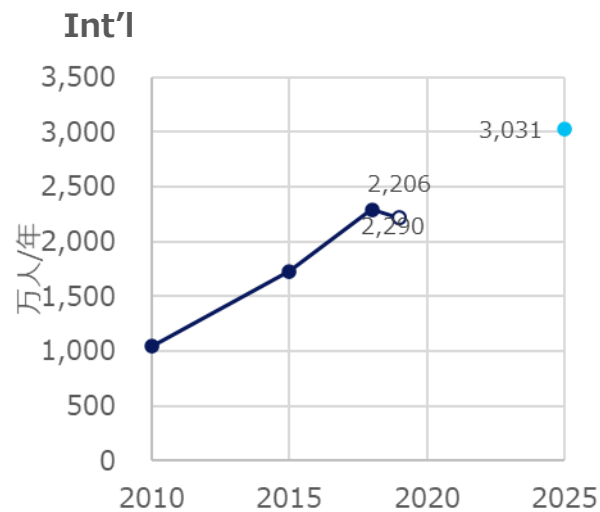
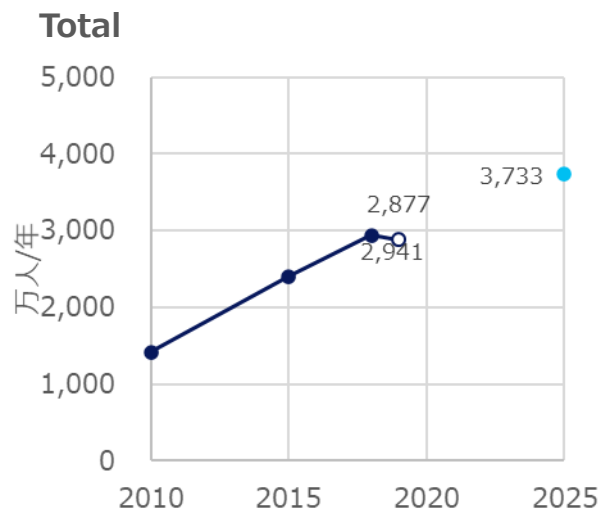


2. Results of study and analysis



2-1. Air traffic demand forecast for FY2025: Pax

- Int'l pax increase significantly backed by rising air travel demand due to economic growth in Asian countries
- Dom pax slightly increase due the effect of the Expo
 - Total pax increase from 29.41 million people in FY2018 to 37.33 million people in FY2025 (1.269 times vs FY2018)



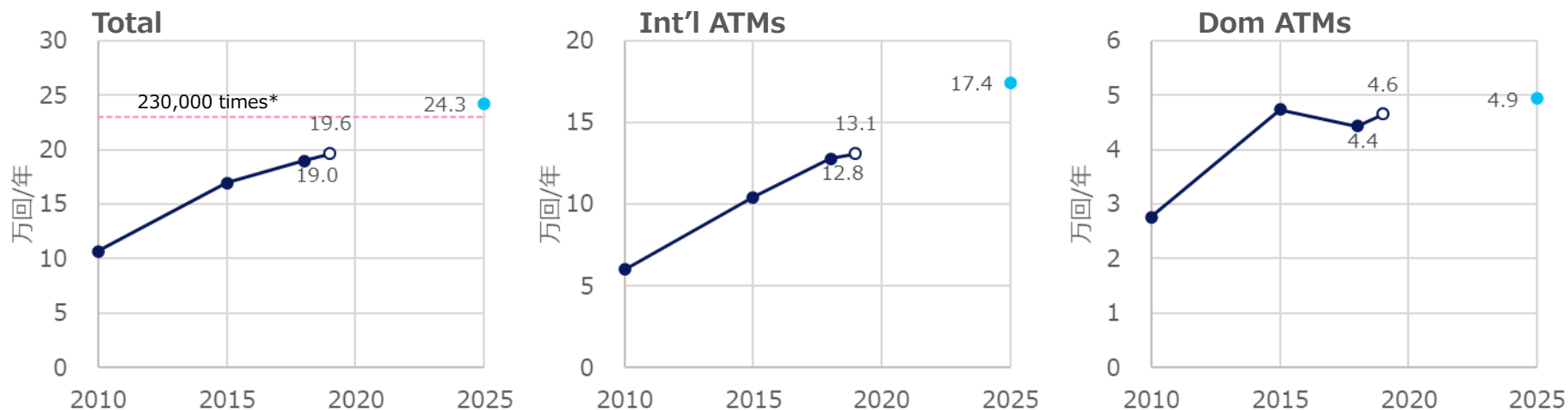
* Factor in the effect of the Expo 2025 (April to October)

* September 2018: Decrease due to Typhoon Jebi

February to March 2020: Significant decrease due to the spread of COVID-19 infections

2-1. Air traffic demand forecast for FY2025: Annual ATMs

- Both int'l and dom ATMs increase in proportion to pax increase
- Total ATMs exceed the environmental assessment cap of 230,000 times/year established in 1998
- Total ATMs increase from 190,000 times in FY2018 to 243,000 times in FY2025 (1.279 times vs FY2018)



* Environmental assessment cap established in 1998

* Total ATMs include int'l & dom passenger flights, cargo flights and others

* Factor in the effect of the Expo 2025 (April to October)

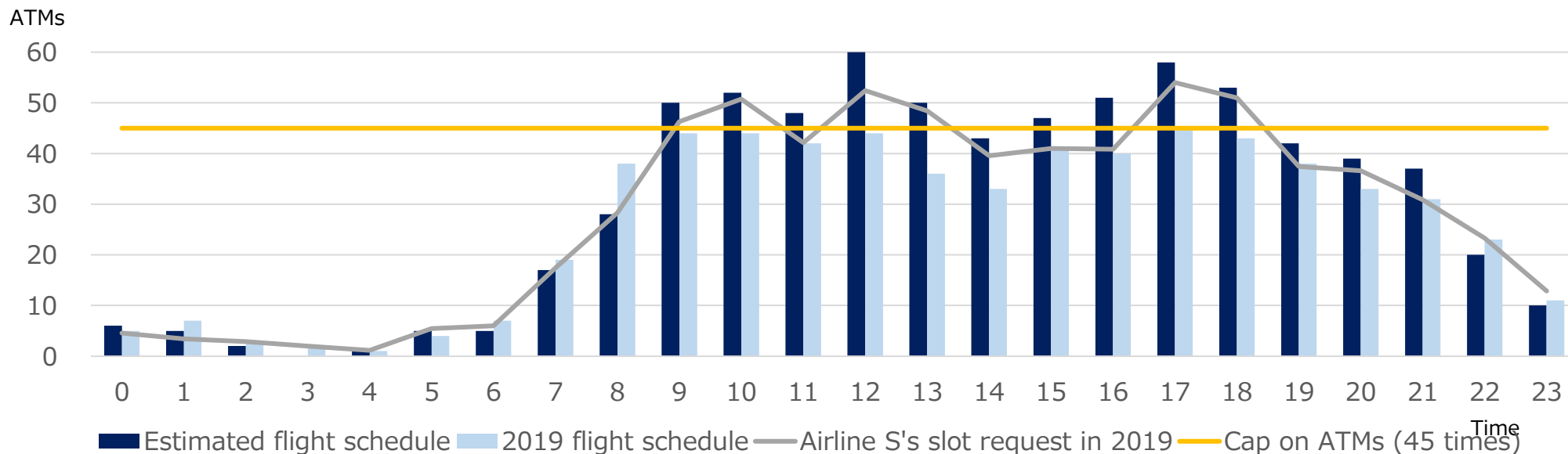
* September 2018: Decrease due to Typhoon Jebi

February to March 2020: Significant decrease due to the spread of COVID-19 infections

2-2. Estimate of ATMs by time slot during 2025 Osaka Kansai Expo*

* April to October 2025

- In FY2019, annual ATMs were 196,000 times, already reaching the cap of 45 times per time slot for some time slots. Therefore, in the air traffic demand forecast for FY2025 (including the effect of the Expo), we estimate ATMs by time slot based on annual ATMs of 243,000 times.
- In estimating ATMs by time slot based on annual ATMs in the FY2025 demand forecast (including the effect of the Expo), we take into account results in 2019, airlines' slot requests in 2019, and the needs by time slot
- As a result, hourly ATMs exceed the **cap of 45 times** for many time slots during the day, and those between 12:00 and 12:59 reach **60 times**



* Airline S's slot request in 2019 and 2019 flight schedule illustrate each airline's slot request and flight schedule after adjusting slots, respectively, in 2019 summer schedule. Therefore, they are different from actual flights operated. Also, the numbers include scheduled flights only, not charter flights, etc. (The same applies to the estimated flight schedule.)

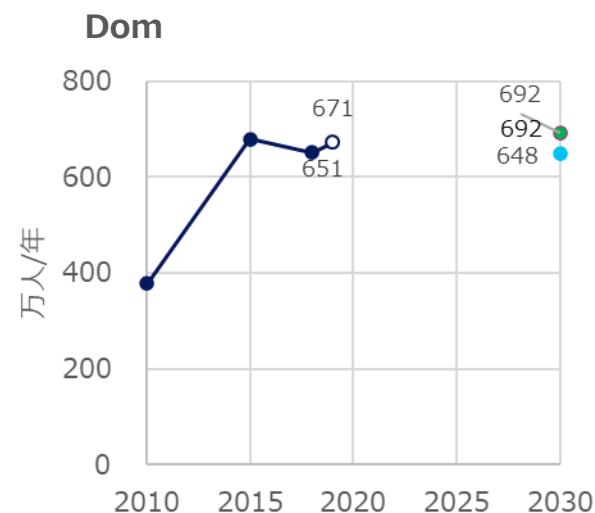
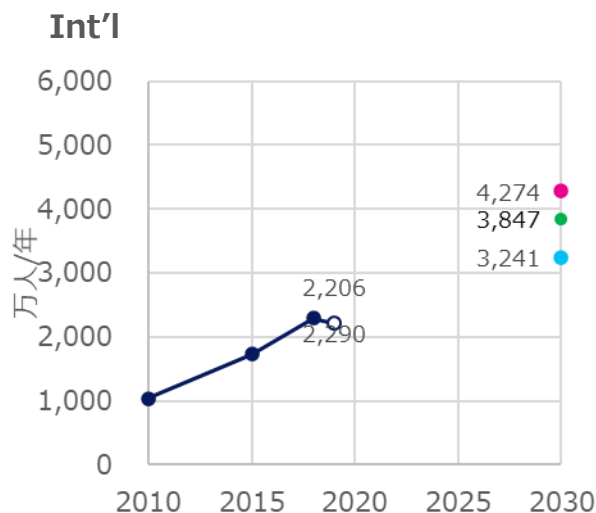
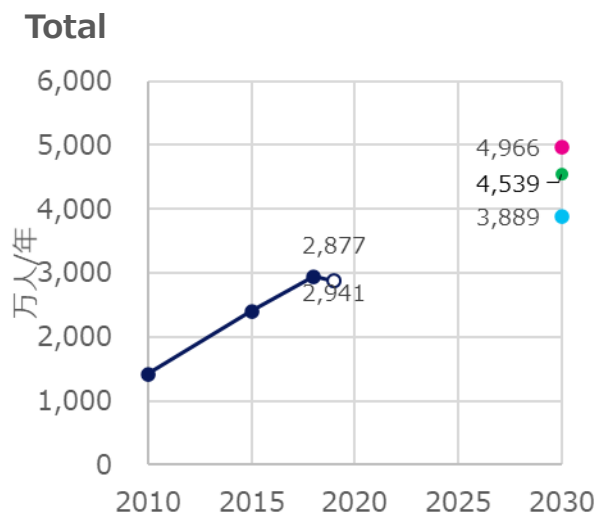
* The estimated flight schedule shows assumption of ATMs by time slot during peak hours, in order to estimate the max. ATMs.

* The 2019 flight schedule is based on a day with the highest ATMs (April 27, 2019).

* The 2019 flight schedule has time slots with reduced ATMs in order to absorb congestion caused by flight delays.

2-3. Simulation for FY2030: Pax

- Int'l pax increase significantly driven by inbound demand from Asian countries
- Meanwhile, dom pax remain about the same due to population decline and other factors
- Total pax increase from 29.41 million people in FY2018 to:
 - Base case: 38.89 million (1.322 times vs FY2018)
 - Medium case: 45.39 million (1.544 times vs FY2018)
 - Upper case: 49.66 million (1.689 times vs FY2018)

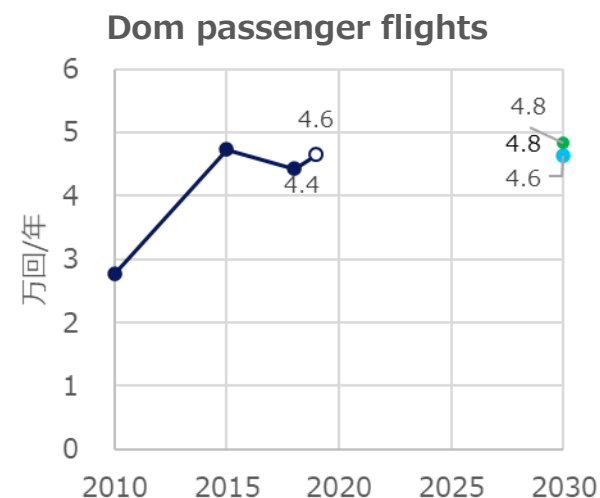
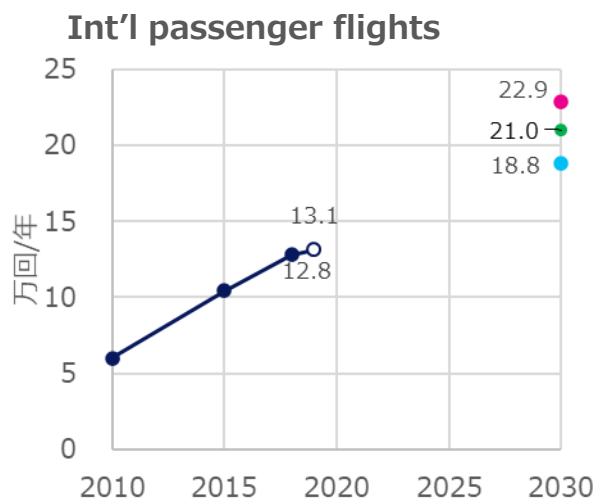
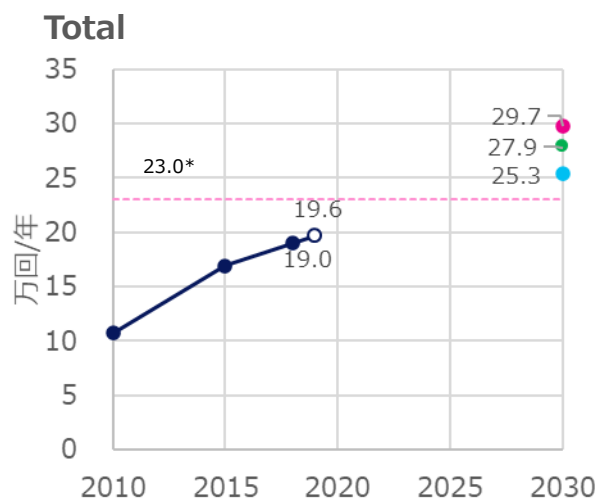


* September 2018: Decrease due to Typhoon Jebi

February to March 2020: Significant decrease due to the spread of COVID-19 infections

2-3. Simulation for FY2030: ATMs

- Int'l ATMs increase significantly driven by inbound demand from Asian countries
- Meanwhile, dom ATMs remain about the same, as in the case of dom pax
 - Total ATMs increase from 190,000 times in FY2018 to:
 Base case: 253,000 times (1.337 times vs FY2018)
 Medium case: 279,000 times (1.471 times vs FY2018)
 Upper case: 297,000 times (1.568 times vs FY2018)



* Environmental assessment cap established in 1998

* Total ATMs include int'l & dom passenger flights, cargo flights and others

* September 2018: Decrease due to Typhoon Jebi

February to March 2020: Significant decrease due to the spread of COVID-19 infections

Key points of study and analysis

Overview

- The spread of the COVID-19 pandemic caused a sharp decline in global air traffic demand. At present, int'l travel is restarting across the globe, and air traffic demand is recovering to pre-COVID levels.
- Border measures are relaxed in phases in Japan, too, and the govt reopened borders to a limited scope of tourists from June 10, 2022, and full-scale recovery in air traffic demand, including int'l travel, is expected in the future.
- Under these circumstances, the committee confirmed that air traffic demand is expected to grow in the future, despite the impact of COVID-19.

Demand forecast for FY2025

Driven by economic growth in Asian countries and rising demand due to the Expo 2025, total pax and total ATMs are expected to increase to 37.33 million people (1.269 times vs FY2018) and 243,000 times (1.279 times vs FY2018), respectively. Total ATMs are estimated to exceed the environmental assessment cap of 230,000 times/year established in 1998.

Estimate of ATMs by time slot during the Expo 2025

According to the study and analysis of ATMs by time slot during the Expo 2025 based on the results of demand forecast, ATMs per hour are estimated to exceed the cap of 45 times for many time slots during peak hours, and those between 12:00 and 12:59 to reach 60 times

Simulation for FY2030

Driven by inbound demand from Asian countries whose economy is rapidly growing, total pax is estimated to reach 38.89 to 49.66 million people, and total ATMs to hit 253,000 to 297,000 times

* Future air traffic demand is subject to scrutiny in case of unexpected changes in the future
