

## Chapter 6

## Building Competitive Economy and Society

## Section 1 Constructing Traffic Networks

## 1 Developing trunk road networks

## (1) Developing trunk road networks

Since the First Five-Year Road Construction Plan formulated in 1954, Japanese highways have been continually constructed. For example, the construction of national highway networks, including expressways, has provided a major impetus in the rejuvenation of regional economies by encouraging plant locations near expressway interchanges. Additionally, it has helped enhance the quality and safety of national life by making broad-area medical services accessible to rural areas and allowing broad rerouting to avoid highway disruption by natural disasters.

For example, all sections of the Metropolitan Intercity Expressway in Saitama Prefecture were opened to traffic in FY 2015. The Metropolitan Intercity Expressway (Ken-O Expressway) is the outermost expressway in the Three Ring Roads that are under development in the Tokyo Metropolitan Area and connects Tomei Expressway and Tohoku Expressway, which allows drivers to reach their destinations avoiding traffic congestion in the center of Tokyo, promotes tourism and improves productivity for companies located along the expressway.

In the meantime, the speed of interurban transportation, an indicator of the speediness of interurban travel, tends to lag in the areas in which trunk road networks are underdeveloped. While European and U.S. freeways each have at least four lanes on average, freeways that have only one lane in either direction account for 30% or more of all freeways in Japan.

Freeways are less vulnerable to accidents involving human casualties than general highways with a probability of about 1 in 10. In addition, they have about two-thirds of the carbon dioxide emissions and about seven times more cars running per lane. Freeways are not only “safe and clean” but serve as a “path to life” in times of disaster. The MLIT is committed to firmly linking freeway networks together and promoting a framework to use them wisely.

Figure II-6-1-1 Speeds of Interurban Transportation

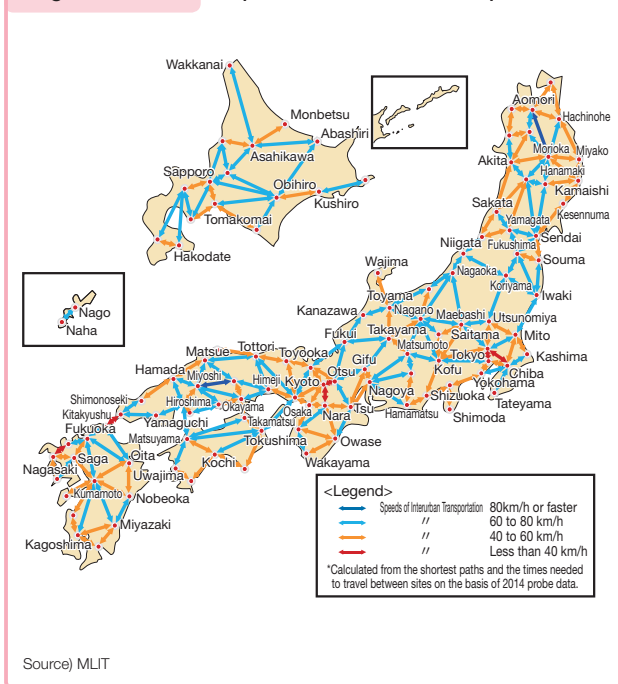
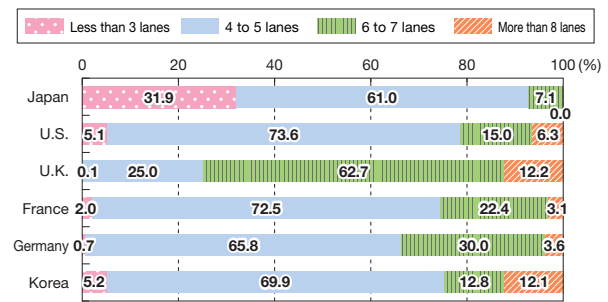


Figure II-6-1-2 Composition Ratio of Expressway Extensions by the number of lanes



Sources)

Japan : Road Traffic Census (Year 2010)

U.S. : National Transportation Atlas Database

U.K., France, Germany : TOMTOM MultiNet

Korea: Statistical Yearbook of MLTM (End of 2012)

Definition of expressway)

Japan : National High-Grade

Trunk Highways

Urban Expressways

Regional

High-Standard

Highways

U.S. : Interstate

U.K. : Motorway

France : Autoroute

Germany : Autobahn

Korea: Expressway

Source) MLIT

## (2) Promoting smart use of the roads

In order to achieve road traffic service that is smooth, safe, comfortable and contributes to increasing area vitality, MLIT is moving forward with efforts to further improve the functionality of existing roads by developing necessary networks, as well as improving operations and small-scale enhancements. Electronic toll collection (ETC) 2.0 is one of these efforts, which started full service in August 2015.

### (i) ETC 2.0 that supports smart use

With data communication in both ways between about 1,600 communication spots on roads across Japan and vehicles on road, ETC 2.0 compared to the previous version of ETC is capable of:

- Sending and receiving a large volume of data
- Capturing route information, in addition to IC entry/exit data

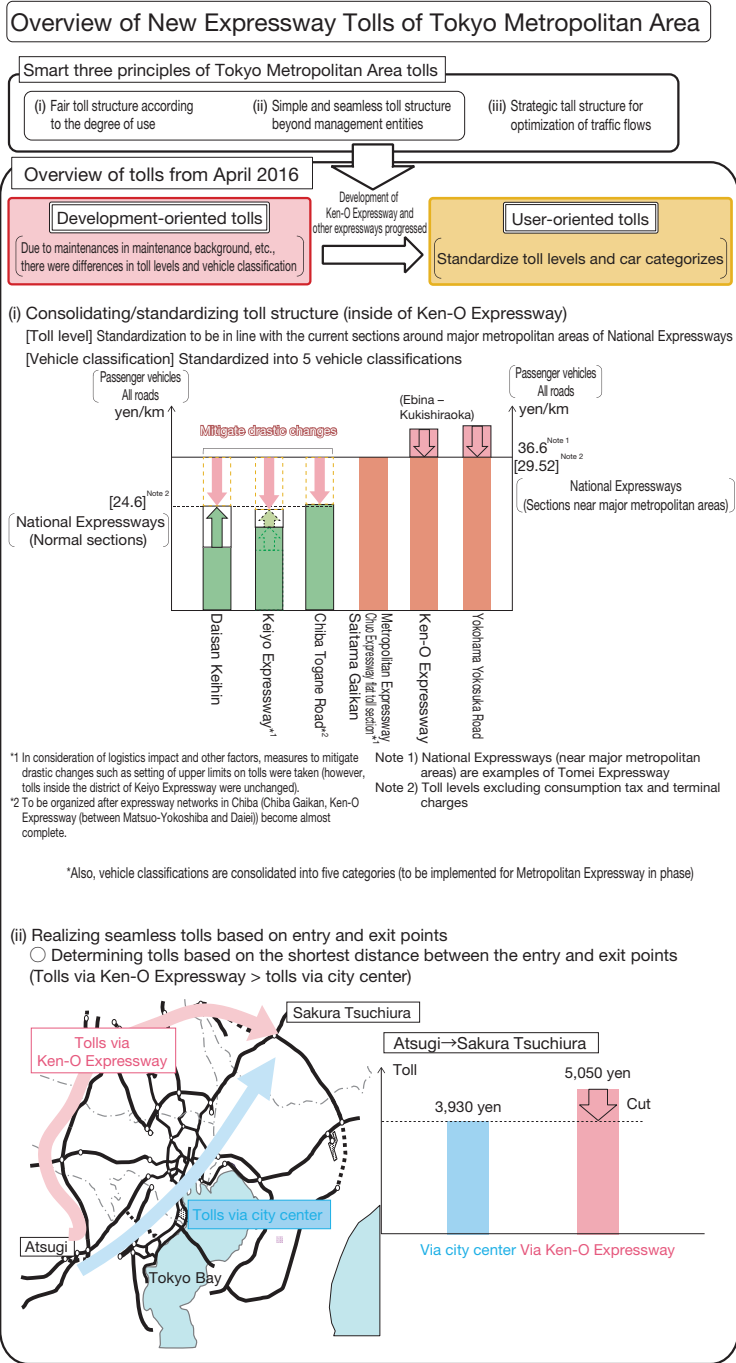
With these much more advanced functionalities, ETC 2.0 greatly contributes to the promotion of ITS.

(ii) Smart toll system

In response to recommendations in the interim report of the MLIT's Arterial Road Committee of the Panel on Infrastructure Development, a new toll system was introduced to expressways in the Tokyo Metropolitan Area in April 2016, which involved re-organizing and standardizing toll levels among all expressways based on the origin and destination. The Committee is now reviewing the toll system for the Kinki Area.

In Japan, there are 83 sections that have no gas station at an interval of 100 km on the expressways, which need improvements on the service levels. This prompted to conduct a pilot program starting in April 2015 where terminal charges are exempted for drivers who exit at Muikaichi IC or Yoshiwa IC on the Chugoku Expressway for refuel. This experiment was made possible by an ETC2.0 feature that provides area-wide route information including general roads.

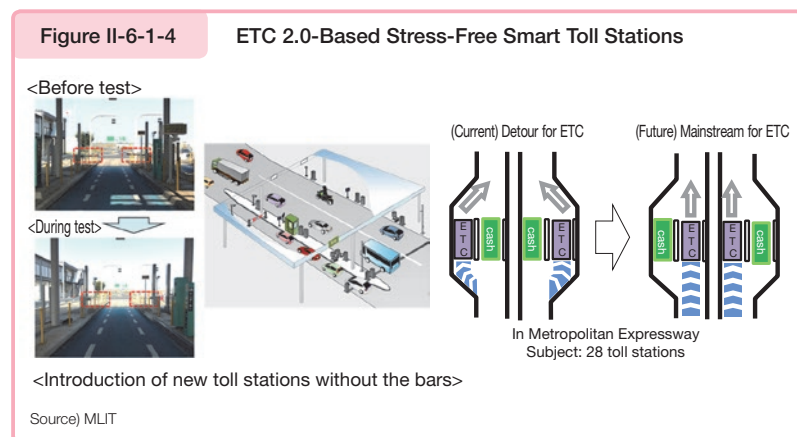
Figure II-6-1-3 Overview of New Expressway Tolls of Tokyo Metropolitan Area



Source) MLIT

## (iii) Smart toll stations

Towards introduction of stress-free smart toll stations based on ETC, we are experimenting with the operation of keeping ETC bars open at the toll stations of Ken-O Expressway (Okegawa-Kitamoto IC, Sayama Hidaka IC) and mainstream use of ETC lanes at the Sangenjaya and other entries ahead of full implementation for Metropolitan Expressway.



## (iv) Smart investments

As part of efforts to achieve maximum effect with the existing networks at minimum cost, we are implementing an initiative to identify places where deceleration or traffic congestion occurs from structural factors, such as uphill sections and tunnels, by using detailed deceleration, acceleration, and other big data collected through ETC 2.0 and other means for effective measures. Around Chofu on the inbound lane of Chuo Expressway, an additional lane was established within the existing road width at the Chofu IC junction, a slow zone/rising slope around Jindai Temple BS and other sections, and started operation of three lanes from December 2015. In addition, for the Ebina junction of Tomei Expressway, two-lane operation on the existing road width began in October 2015 at the ramp junction area, where one-lane operation had caused congestion.

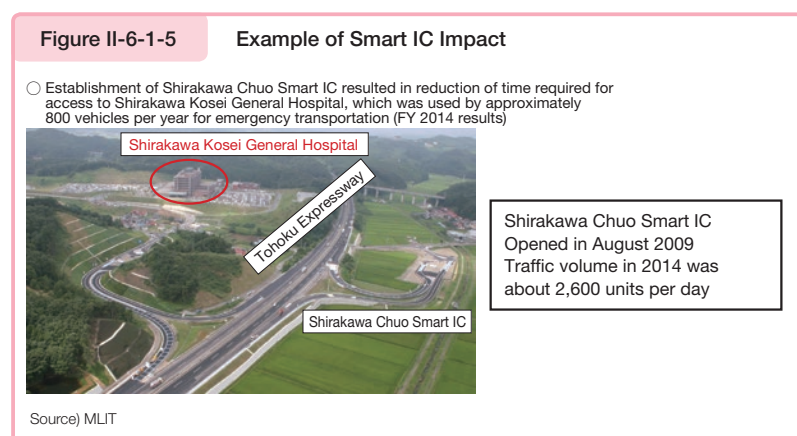
## (v) Enhancement of smart functions

About 30% of expressways in Japan have only two lanes as a tentative provision, which create issues of two way traffic safety and travel performance, and large-scale disaster response. Therefore, in light of enhancing the safety and comfort of drivers and driving performance, a Cabinet Order to Partially Amend the Enforcement Order for the National Expressway Act was decided by the Cabinet on November 13, 2015. The amendment enables flexible action when changing tentative two lanes to four lanes without going through discussions at the MLIT Arterial Road Development Council, on the condition of having discussions at a third party committee and meeting other requirements.

## (vi) Other initiatives

In order to promote cooperation among local areas, the MLIT is improving accessibility, including direct connections between expressways and facilities. By being flexible in building additional Smart ICs, we are increasing accessibility to the distribution centers and tourism hubs from expressways through the consolidation and sophistication of measures based on the concept of “compact” and “networked” roads and reducing traffic congestion around the existing ICs. In view of

promoting the use of expressways and improving usability, the MLIT is organizing new rules, such as directly connecting expressways and large-scale distribution centers, industrial complexes, and commercial facilities near the expressways by using Smart ICs and other means with appropriate assumption of burden. In this fiscal year, the national government newly instituted preparation phase surveys for Smart ICs in places where necessity is found and is implementing the preparation and examination of Smart ICs in systematic and efficient manner.



## Column Inspection of business of expressway organizations and companies

On the 10th anniversary of the privatization of expressway organizations and companies in October, 2005, the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) conducted inspections of the past performance and issues of Japan Expressway Holding and Debt Repayment Agency and other Expressway Companies, and the measures necessary for their futures, and then put together the results as the inspection of business of expressway organizations and companies.

The document summarized the major performance and issues of the past 10 years, such as (i) reliable redemption of debt, (ii) attainment of operation ahead of the schedule or reduction of costs by exercising the flexibility and mobility, and (iii) improvement and diversification of the services by use of knowhow from the private sector.

As for tasks that the Agency and Companies should tackle from now on, it has been confirmed that, while steadily achieving results according to the purposes of privatization, they need to make tireless efforts to address new issues, such as prevention and mitigation of disasters, and take measures against deterioration in order to provide safe and secure services.

They are also required to actively promote measures for smarter use of expressways, aiming to maximize the stock effects of the expressways and to grow the Japanese economy through enhancement of international competitiveness, and regional revitalization.

### Inspections on Operation of Japan Expressway Holding and Debt Repayment Agency/Companies—Major Achievements and Issues after Privatization

| Purpose of Privatization   | (i) Ensuring repayment of interest-bearing debts                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | (ii) Early maintenance with minimal burden of the public                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | (iii) Provision of various services by leveraging private-sector know-how                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Major achievements         | <p><u>Steady repayment of interest-bearing debts</u></p> <p>37.4 trillion yen (At the time of privatization)</p> <p>29.3 trillion yen (Beginning of FY 2014)</p>                                                                                                                                                                                                                                                                                                                                                                          | <p><u>Companies demonstrated agility and flexibility, achieving early opening to traffic and cost reductions</u></p> <p>[Opening] ⇒ pushed forward by 4 months on average</p> <ul style="list-style-type: none"> <li>- New Tomei Expressway (between Gotenba JCT and Hamamatsu Inasa JCT) ⇒ advanced by about 12 months</li> <li>- Kita-Kanto Expressway (between Mooka IC and Sakuragawa-Chikusai IC) ⇒ advanced by about 11.5 months</li> </ul> <p>[Cost reduction] ⇒ cut by about 740 billion yen</p> <ul style="list-style-type: none"> <li>- Higashi Kyushu Expressway (Hyuga IC to Tsuno IC) ⇒ cut by about 25 billion yen</li> <li>- Metropolitan Expressway Central Circular Shinagawa Route (between Oij JCT and Ohashi JCT) ⇒ cut by about 34 billion yen</li> </ul> | <p><u>Better services at SAs/PAs with diversified shops and enhanced facilities</u></p> <p>[Diversification of shops]</p> <ul style="list-style-type: none"> <li>- Convenience store</li> <li>- Café</li> <li>- Food court</li> </ul> <p>[Enhanced facilities]</p> <ul style="list-style-type: none"> <li>- Washlet toilet</li> <li>- Accommodation facilities</li> <li>- Dog run</li> </ul> <p>[Sales of SAs/PAs]</p> <ul style="list-style-type: none"> <li>- About 400 billion yen (at the time of privatization) → about 490 billion yen (2014)</li> </ul> |
|                            | Major issues                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <p>■ <u>Major disasters (e.g., Great East Japan Earthquake, heavy snow) and accidents (e.g., falling of Sasako Tunnel ceiling, reverse run by elderly drivers) happened during the 10 years after privatization.</u></p> <p>Enhanced countermeasures against aging infrastructures, increasingly frequent large-scale disasters and accidents should be taken in order to provide safe and secure services.</p> <p>➢ Driving forward systematic countermeasures against aging infrastructure based on regular inspections that became mandatory under the revised Road Act, and other regulations, and implementation of large-scale renovation works projects (for Metropolitan Expressway from 2014)</p>                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Opinions of review meeting | <p>■ Basic frameworks which steadily made positive results so far should be continued in the immediate future.</p> <p>■ Based on heightened awareness of the public about safe and secure passages due to major disasters and accidents occurred after privatization, express institutions/companies need to take active roles in society more than ever.</p> <p>■ Going forward, these roles, which were not stipulated at the time of privatization, need to be handled appropriately, in addition to the privatization objectives.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

Source) MLIT



## 2 Constructing arterial railway networks

### (1) Development of Shinkansen railways

A rapid transit system of vital value to Japan, Shinkansen [bullet train] Lines significantly cut the time spent moving from region to region and help greatly boost regional activities and rejuvenate local economies. Shinkansen Lines feature safety (no record of passenger death accidents since opening of the Tokaido Shinkansen Line in 1964) and eco-friendliness (the railway CO<sub>2</sub> emissions per unit of energy (g-CO<sub>2</sub>/passenger-kilometer) being one fifth of aircraft and one eighth of automobiles). As New Shinkansen <sup>Note</sup>, Tohoku Shinkansen (between Hachinohe and Shin-Aomori) opened in December 2010 and the Kagoshima Route (between Hakata and Shin-Yatsushiro) of Kyushu Shinkansen opened in March 2011, and Hokuriku Shinkansen (between Nagano and Kanazawa) in March 2015 and Hokkaido Shinkansen (between Shin-Aomori and Shin-Hakodate Hokuto) in March 2016.

For those sections of the Shinkansen whose construction started in June 2012 (between Shin-Hakodate Hokuto and Sapporo on the Hokkaido Shinkansen line, between Kanazawa and Tsuruga on the Hokuriku Shinkansen line and between Takeo Spa and Nagasaki on the Kyushu Shinkansen line), their opening schedules have been accelerated in accordance with “Handling of New Shinkansen Lines” (agreed upon between the government and the ruling party on January 14, 2015). More specifically, the Hokkaido Shinkansen line (between Shin-Hakodate Hokuto and Sapporo) is scheduled to complete and open at the end of FY 2030 five years ahead of the end of FY 2035 as originally scheduled, the Hokuriku Shinkansen line (between Kanazawa and Turuga) at the end of FY 2022 three years ahead of the end of FY 2025 as originally scheduled. In the meantime, the completion and opening schedules of the Kyushu Shinkansen line (between Takeo Spa and Nagasaki) will be moved up from FY 2022 to the extent possible as works are underway at a steady pace.

The Transport Policy Council, which had debated Chuo Shinkansen since March 2010, came up with recommendations in May 2011 to affirm the appropriateness of Central Japan Railway Company as an entity of its operation and construction, the superconducting maglev method of train operation and the Southern Alps of Japan route. The MLIT responded to name Central Japan Railway Company as an entity of operation and construction for Chuo Shinkansen in accordance with the Nationwide Shinkansen Railway Development Act, and decided on the Development Plan and directed Central Japan Railway Company to embark on construction. Central Japan Railway Company, which expects to open its Shinkansen routes between Tokyo and Nagoya in 2027 and between Nagoya and Osaka in 2045, publicized and made available for public inspection an environmental assessment report edited and finalized under the he Environmental Impact Assessment Act in August 2014 and, at the same time, filed an application for Plan for Constructing the Chuo Shinkansen Line Section between Shinagawa and Nagoya Stations (No. 1) to the MLIT, which was approved by the Minister of Land, Infrastructure, Transport and Tourism in October of the same year. Currently, construction of the Shinagawa Station and of the tunnels of the Southern Alps is ongoing.

Running tests for superconducting maglev trains had been carried out on the Yamanashi Test Line since 1997. The

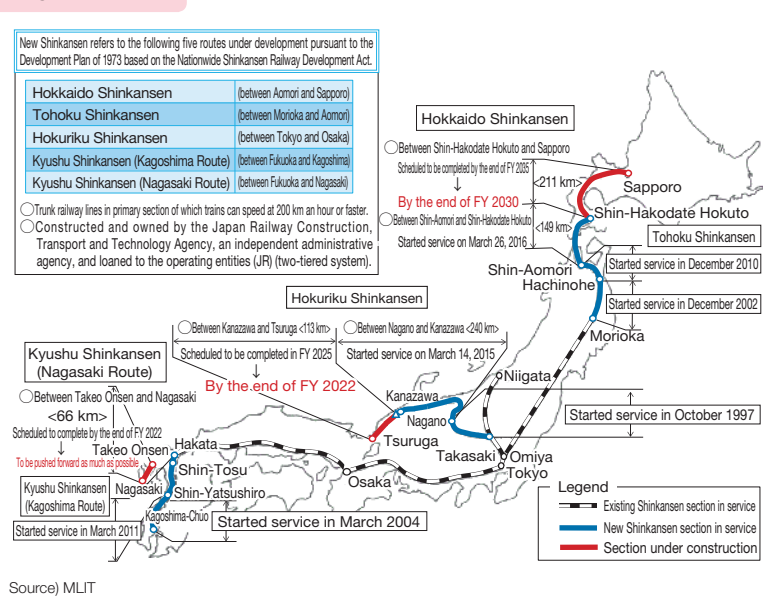
### (2) Driving technical development

#### (i) Superconducting maglev trains

Running tests for superconducting maglev trains had been carried out on the Yamanashi Test Line since 1997. The

**Note** Five routes that are stipulated in the Development Plan approved in 1973 pursuant to the Nationwide Shinkansen Railway Development Act.

Figure II-6-1-6 Present Status of New Shinkansen Development



Superconducting Magnetic Levitation Technological Practicality Evaluation Committee that met in July 2009 concluded that the “development of the technologies prerequisite to driving superconducting maglev trains to the stage of practical usefulness, including their operation as super-fast mass transit system, are in sight.” Since August 2013, a running test has been in progress on the entire Yamanashi Maglev Test Line to make a final verification of the practical specifications of the cars, propulsion coils and more.

(ii) Free Gauge trains

Technological development of free gauge trains capable of through operation from Shinkansen railway line to conventional railway line and vice versa is underway for completion scheduled for service on Kyushu Shinkansen and Hokuriku Shinkansen. Building on the efforts made in FY 2015, we will continue carrying out technological development for contributing to the durability of gauge change trains toward their introduction to the Kyushu Shinkansen (Nagasaki route). In addition, we will drive forward technological development activity meant to address snow hazards (snow and cold resistance) for running on the Hokuriku Shinkansen.

**3 Constructing aviation networks**

The Basic Policy Committee, Aviation Group, Transport Policy Council had explored the future directions of Japan’s aviation in recurring sessions of discussions since October 2012 and finally came up with a report in June 2014. The report sets forth mid- and long-term directions in the three areas of aviation: laying a firm ground for building an aviation network, building an enhanced aviation network and developing aviation demand, and providing quality aviation and airport services.

(1) Expanding aviation networks

(i) Enhancing metropolitan airports functionalities

To beef up Japan’s competitiveness in the global arenas of business and tourism, enhancements to the functions of the metropolitan airports were made, thereby achieving the annual total number of arrival and departure slots at Tokyo International Airport and Narita International Airport of 750,000 in March 2015.

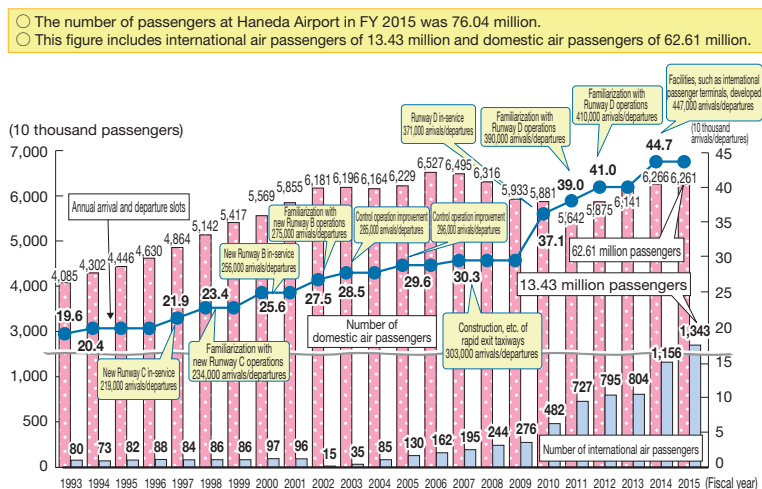
Additions to the international air passenger terminal building at Tokyo International Airport (Haneda) elevated the number of boarding/alighting slots on the international lines by 30,000 to 450,000 a year from March 2014. We will continue developing functions such as tunnels that connect domestic and international flights and parking areas, aiming to enhance airport functions further.

Figure II-6-1-7 Overview of Tokyo International Airport



(Source) MLIT

Figure II-6-1-8 Trend in Number of Passengers and Number of Arrivals and Departures at Tokyo International Airport



Narita International Airport realized 300 thousand arrival and departure slots a year in March 2015 thanks to the development, etc. of an LCC terminal. Efforts will continue to consolidate its position as a hub airport in Asia by making further enhancements to the network of international and domestic airlines, including LCCs.

Having achieved the number 750,000, in view of smoothly holding 2020 Tokyo Olympic and Paralympic Games and looking further ahead, we are working to expand airport capacities of both Haneda and Narita Airports by 2020 to create stronger metropolitan airport functionalities to increase international competitiveness of the area, receive the increasing number of inbound foreign tourists and revitalize local communities.

Specifically, a council composed of representatives of the local public entities concerned, airlines and the like was set up in August of the same year to develop specific measures to enhance the functionalities, such as revision of flight routes at Haneda Airport, and the discussions are ongoing.

Especially, for Haneda Airport, briefing sessions were held to gain broad understanding of residents. Going forward, we expect to develop measures that pay attention to environmental and other impacts by summer 2016, also taking into consideration the opinions received.

With regards to initiatives after 2020, we are working with relevant municipalities to examine specific measures to enhance functionalities, including drastic expansion of capacities of Narita Airport.

## (ii) Driving the Open Skies strategically

The Ministry has strategically pursued the Open Skies <sup>Note 1</sup>, including metropolitan airports, to respond to changes in the competitive climate resulting from global trends towards air services liberalization while accommodating vigorous economic leaps in Asian and other overseas nations. Open Skies with a total of 27 nations and regions <sup>Note 2</sup> were realized by March 2016. Also, discussions with ASEAN are ongoing with a view to concluding an air service agreement between Japan and ASEAN.

Regarding the second increase in the number of arrival and departure slots at Haneda Airport <sup>Note 3</sup>, in February 2016,

**Note 1** An agreement on mutually removing bilateral constraints on the number of operators, that of routes and that of flights in international air transportation to enhance the quality of services, such as cutting airfares by encouraging the entry of new airlines, increasing the number of flights and stimulating competition between airlines. In recent years, many countries in the world pursue its implementation.

**Note 2** The number of passengers flying to and from the 27 nations and regions accounts for about 94% of the total number of passengers departing from and arriving at Japan.

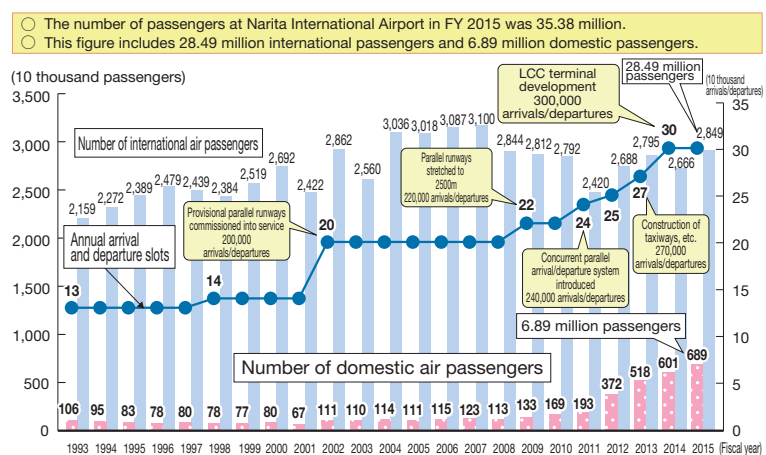
**Note 3** From March 2014, the number of arrival and departure slots during the daytime was increased from annual 30,000 slots (40 flights per day) to annual 60,000 slots (80 flights per day).

Figure II-6-1-9 Overview of Narita International Airport



(Source) MLIT

Figure II-6-1-10 Trend in Number of Passengers and Number of Arrivals and Departures at Narita International Airport



(Source) MLIT



Japan and the United States reached an agreement on a framework that enables Japanese and US airlines to operate five flights during the daytime and one flight during the nighttime per day both ways, aiming to start the flight operation on the end of October 2016.

(iii) Realizing concessions related to Kansai International Airport and Osaka International Airport

On July 2012, Kansai International Airport and Osaka International Airport merged into New Kansai International Airport Co., Ltd. with a view to rejuvenating and reinforcing Kansai International Airport as an international core airport and expanding the demand for air transportation in the Kansai district through appropriate and effective utilization of the two airports. The New Kansai International Airport Co., Ltd., is now operating in an integrated manner.

This company has moved ahead with positive measures, such as expanding passenger networks, including LCCs, and turning into a cargo hub airport, in its bid to increase business values of both airports. Also, since the formulation and publication of The Implementation Policy based on the “PFI Act” on July 25, 2014, the company proceeded with concession procedures targeting transfer of business in FY 2015, selected the ORIX-VINCI Airports Consortium as the Preferred Negotiation Right Holder on November 10, 2015, and executed the Project Agreement with an SPC established by the Consortium (Kansai Airports) on December 15, 2015.

(iv) Present status of airport development

For further revitalization of Okinawa at Naha Airport, which plays critical roles as a travel and logistics base connecting Okinawa and mainland Japan/overseas, the project to increase runways was carried out in FY 2015. At Fukuoka Airport, the implementation of environmental assessment procedures on the construction of the new runway continued with the aim of fundamentally resolving the issue of chronic airport congestion at peak times, and a new runway construction project started. Also, the MLIT has been implementing countermeasures against aging airport facilities based on strategic maintenance to ensure safe flights of airplanes, while pushing forward with quake-resistant technologies and structures at airports so that airports can maintain their operations in the event of an earthquake. Furthermore, it has been promoting relocations or changes to the internal layout of the airport terminal area in order to enhance Japan’s international competitiveness and regional competitiveness in the hinterlands of the airports.

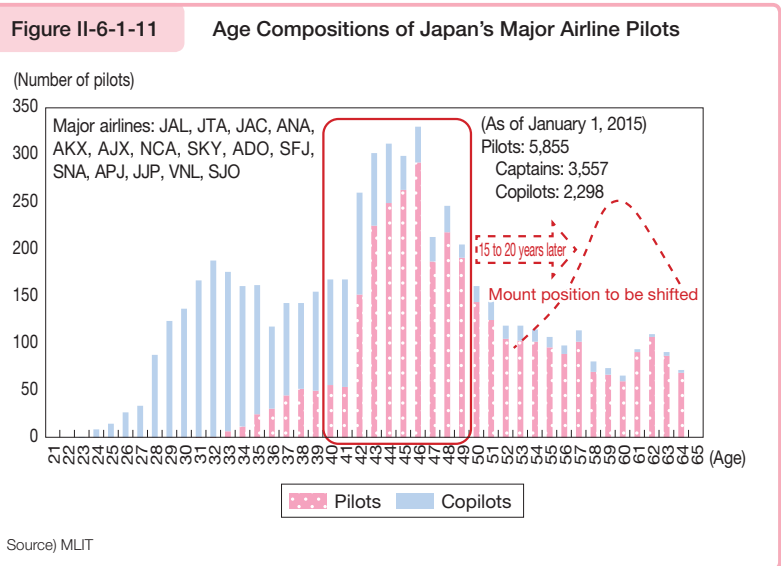
(v) Fostering and securing aircraft pilots, etc.

In the Japanese aviation industry, while drastic leaps in the demand for aviation focusing on international lines and massive retirement of pilots in their 40s, who form a primary workforce at present, are predicted in the future, it would be difficult to fully fill the future demand for pilots with the present yearly supply of new pilots. Hence, a solution to middle- and long-term shortages of pilots is sought.

To this end, the Joint Subcommittee for Studying Crew Policies was formed under the Basic Policy Taskforce and Technology and Safety Taskforce, Aviation Group, Transport Policy Council in December 2013 to explore directions in the specific

measures to address shortages of pilots, and a report was put together in July 2014. Subsequently, the following initiatives have been taken in accordance with the report. The Aircraft Pilot Training Liaison Conference consisting of relevant stakeholders including airlines and training organizations was launched in August 2014, and various challenges in training and securing pilots are being examined utilizing such a conference.

In order to secure pilots ready for work, we are promoting such efforts as using Self-Defense Force pilots or foreign pilots by relaxing residency status requirements or hiring active pilots under enhanced health management by raising the



age limit for airline pilots.

Also, a unified website Skyworks (<http://www.skyworks.info>) that shows the appeal of aviation related jobs was launched in December 2015 while we promote efforts in such areas as efficient pilot training by airlines, expanding the supply capacity of private sector training institutions including private universities, and further utilization of Civil Aviation College.

Furthermore, under increasing demand for pilots for ambulance, firefighting, and disaster prevention helicopters and other helicopters of highly public nature, securing helicopter pilots is an important issue. Therefore, a liaison meeting of relevant ministries was set up to discuss ideal ways of training and securing helicopter pilots, which was put together in July 2015. Based on this, the Helicopter Taskforce set up under the Aircraft Pilot Training Liaison Conference is examining specific measures including development of training programs for ambulance and other helicopter pilots with private-public sector collaboration.

## (2) Enhancement and optimization of airport operations

### (i) Driving airport management reforms

Using the Act on Operation of National Airports Utilizing Skills of the Private Sector (Private Utilizing Airport Operation Act), the MLIT is committed to driving airport management reforms at national airports and the like to suit specific local conditions through utilization of private-sector capabilities, integrated management of airline and non-airline businesses and so on in order to expand the amount of population who are engaging in domestic and international interactions, etc. on the support of the airports and thus to encourage regional revitalization.

An implementation agreement with the holder of the right to operate public facilities was concluded in December 2015 for Sendai Airport, the first project for government-managed airports, and preparation is ongoing toward the start of operation in July 2016.

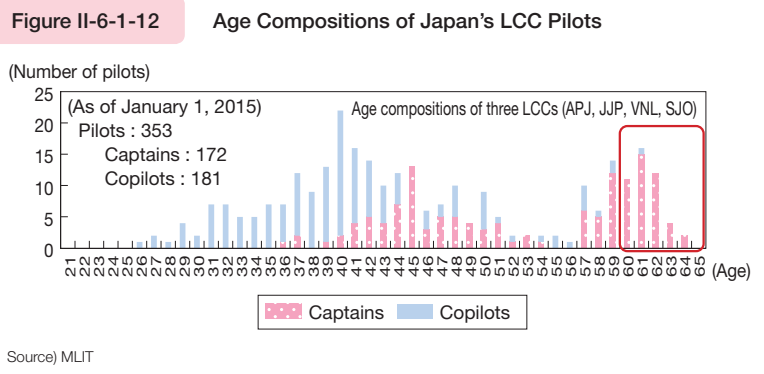
### (ii) Encouraging LCC entry

An LCC originating from Japan went into service in March 2012. As of March 2016, Peach Aviation operated 14 domestic routes and ten international routes; JetStar Japan, 16 domestic routes and six international routes; Vanilla Air, three domestic routes and three international routes; and Spring Airlines, two domestic routes and two international routes. Also, AirAsia Japan is expected to start LCC flight operations (re-entry in the market by AirAsia group) in 2016.

The accelerating entry of LCCs could create new demand for aviation by attracting more tourists visiting Japan, expanding domestic tourism and so on. Government-set goals dictate that “domestic LCC passengers account for 14% of the total number of airline passengers in 2020, with international LCC passengers accounting for 17%.” Various measures have been taken by the government and at the individual airports to encourage the entry of LCCs.

Two principal governmental measures being implemented or explored are summarized below. The first measure was the abatement of the landing fees during FY 2013 with regard to the equipment (100 tons or less) mainly used by LCCs with an aim to revitalize local communities by maintaining local routes and supporting LCCs, and this measure was taken during FY 2015 as well. The second is the promotion of airport management reforms. Many of Japan’s airports are managed by the central and local governments, contemplating to keep their runways and airport buildings under integrated management and launching strategic airfare plans and sales campaigns in conjunction with private businesses in a bid to attract LCCs.

In addition to these measures, each individual airport has also taken two key steps to create an environment for hosting LCCs. One is the construction of LCC dedicated terminals. FY 2012 witnessed the launch of an interim LCC receiving facility at Narita International Airport, Japan’s first LCC dedicated terminal (T2) at Kansai International Airport and an interim LCC terminal leveraging existing facilities at Naha Airport. Furthermore, Terminal 3 (LCC terminal) at Narita International Airport came into service in April 2015. In addition, the construction of LCC terminals is being contemplated



for Kansai International Airport for commencing services by the end of FY 2016. The feasibility of constructing new LCC terminal is being explored at Chubu International Airport as well. The second is the reduction of the airport fees, including landing fees. Efforts that began in FY 2014 continued into FY 2015 to mark down or review the airport fees, including landing fees at Narita International Airport and Kansai International Airport.

Figure II-6-1-13 Overview of Japan's LCC Projects

○ Since 2012, LCCs entered into the business also in Japan.  
○ In FY 2014, LCCs accounted for 8.2% of domestic flight passengers. March 27, 2016

| Company name                           | Peach Aviation, Ltd.                                                                                                                                                                                                                                                                                                                                                                    | Vanilla Air Inc.                                                                                                                                                                           | Jetstar Japan Co., Ltd.                                                                                                                                                                                                                                                                                                                                                                    | Spring Airlines Japan Co., Ltd.                                                                                                       | AirAsia Japan                                                                                                                                                                                                                               |
|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Major shareholders                     | - ANA Holdings 38.7%<br>- First Eastern Aviation Holding Limited 33.3%<br>- Innovation Network Corporation of Japan 28.0%                                                                                                                                                                                                                                                               | - ANA Holdings 100%                                                                                                                                                                        | - Qantas Group 33.3%<br>- JAL 33.3%<br>- Mitsubishi Corp. 16.7%<br>- Century Tokyo Leasing Corp. 16.7%<br><small>*The ratios are based on the voting rights.</small>                                                                                                                                                                                                                       | - Spring Airlines Company Limited 33.0% and others                                                                                    | - AirAsia Investment 33.0%<br>- Rakuten, Inc. 18.0%<br>- Noevir Holdings Co., Ltd. 18.0%<br>- Alpen Co., Ltd. 18.0%<br>- FinTech Global Trading Incorporated 13.0% and others<br><small>*The ratios are based on the voting rights.</small> |
| Core airport                           | Kansai International Airport<br>Naha Airport, Narita International Airport                                                                                                                                                                                                                                                                                                              | Narita International Airport                                                                                                                                                               | Narita International Airport<br>Kansai International Airport                                                                                                                                                                                                                                                                                                                               | Narita International Airport                                                                                                          | Chubu International Airport                                                                                                                                                                                                                 |
| Equipment used                         | Airbus Model A320 (180 seats)                                                                                                                                                                                                                                                                                                                                                           | Airbus Model A320 (180 seats)                                                                                                                                                              | Airbus Model A320 (180 seats)                                                                                                                                                                                                                                                                                                                                                              | Boeing 737 (189 seats)                                                                                                                | Airbus Model A320 (180 seats)                                                                                                                                                                                                               |
| In service from                        | March 1, 2012                                                                                                                                                                                                                                                                                                                                                                           | December 20, 2013                                                                                                                                                                          | July 3, 2012                                                                                                                                                                                                                                                                                                                                                                               | August 1, 2014                                                                                                                        | Summer 2016 (planned)                                                                                                                                                                                                                       |
| Service route                          | (Domestic flight)<br>Kansai-Sapporo, Sendai, Narita, Matsuyama, Fukuoka, Nagasaki, Kagoshima, Naha, New Ishigaki, Miyazaki<br>Naha-Fukuoka, Narita<br>Narita-Sapporo, Fukuoka<br>Total 14 routes<br>(International flights)<br>Hanoi-Taoyuan<br>Incheon February 5, 2016<br>Kansai-Incheon, Busan, Taoyuan, Kaohsiung, Hong Kong<br>Naha-Taoyuan, Hong Kong, Incheon<br>Total 10 routes | (Domestic flight)<br>Narita-Sapporo, Amami, Naha<br>Total 3 routes<br>(International flights)<br>Narita-Taoyuan, Hong Kong, Kaohsiung<br>Kansai-Taoyuan (April 27, 2016)<br>Total 3 routes | (Domestic flight)<br>Narita-Sapporo, Kansai, Takamatsu, Matsuyama, Fukuoka, Oita, Kumamoto, Kagoshima, Naha<br>Kansai-Sapporo, Fukuoka, Naha<br>Chubu-Sapporo, Fukuoka, Kagoshima, Naha<br>Total 16 routes<br>(International flights)<br>Narita-Hong Kong, Taoyuan, Manila<br>Kansai-Hong Kong, Taoyuan, Manila (April 7, 2016)<br>Chubu-Taoyuan, Manila (April 1, 2016)<br>Total 6 routes | (Domestic flight)<br>Narita-Hiroshima, Saga<br>Total 2 routes<br>(International flights)<br>Narita-Wuhan, Chongqing<br>Total 2 routes | (Domestic flight)<br>Chubu-Sapporo, Sendai (planned)<br>(International flights)<br>Chubu-Taipei (planned)                                                                                                                                   |
| Characteristics of corporate structure | Business operation independent of ANA                                                                                                                                                                                                                                                                                                                                                   | A consolidated subsidiary of ANA. Business operations are coordinated with ANA.                                                                                                            | Business operation independent of JAL.                                                                                                                                                                                                                                                                                                                                                     | Business operations leveraging the Spring Airlines' network (China)                                                                   | Reentry by AirAsia group                                                                                                                                                                                                                    |

Source) MLIT

(iii) Accelerating the reception of business jets

A business jet is a small aircraft with the capacity to hold a few to more than a dozen passengers at the most. Business jets are typically used by businesspersons valuing time because they are able to adjust times according to their schedules or utilize the plane as a secure space to carry on business meetings and such on board. Business jets have become a means of global corporate activity in the U.S. and Europe. As Japan's economy goes on global, the need to attract investment from overseas is beginning to win wider recognition than before, instead of conducting a one-sided exchanges, such as building a plant overseas. Hence, the importance and potentials of business jets in Japan will grow from a viewpoint of consolidating economic growths in the Asian regions from now on.

Structural measures have been implemented and regulations eased to get better prepared for hosting business jets flying into metropolitan airports. For example, the monthly application deadline and finalization date for flight schedules at Tokyo International Airport were advanced (by five days) starting from flights for the end of March 2016; fast lanes available to inbound foreign visitors using business jets were established at Kansai International Airport; and spots available to getting on and off business jets were increased (by two spots) at Narita International Airport.

Going forward, measures including active information dissemination and relaxation of regulations on business jets will be examined for embedding the use of business jets.

#### (iv) Promotion of international flight services at regional airports

Although the number of foreigners visiting Japan is steadily increasing, about 70% concentrates on the sightseeing route called the Golden Course that connects the Tokyo metropolitan area and the Kansai region. Going forward, the key challenge in receiving more travelers is to attract foreign travelers directly to various regions in Japan to create inbound and outbound flows of travelers in rural areas, in addition to enhancing metropolitan airports functionalities.

For airports managed by the national government, landing fees of international flights have already been reduced by 30% for regular flights and by half for charter flights. In addition, reductions of landing fees for international flights will be newly introduced at regional airports in FY 2016 with the aim of increasing inbound foreign tourists. Landing fees will be reduced by half at airports managed by the national government, excluding Tokyo International Airport, New Chitose Airport, and Fukuoka Airport for new or additional international passenger flights in coordination with regional efforts to attract flight routes. This will encourage international flight services at airports in regions that are positive about improving the environment to welcome foreign travelers, such as by facilitating the formation of wide-area tourism routes.

### (3) Constructing air traffic system

#### (i) Building a new air traffic systems

In FY2010, air traffic experts from the industrial, academic and governmental sectors formulated a long-term vision for future air traffic systems as CARATS (Collaborative Actions for Renovation of Air Traffic Systems) with a view to realizing a globally interoperable air traffic system and addressing increases in long-term demand for air traffic capacity and diversified needs. Studies are underway to make this vision a reality in conjunction with ICAO's Global Air Navigation Plan (GANP).

In FY 2015, we began examining ways to realize flights where airplanes fly upwards continuously without temporary leveling off from takeoff to cruising in order to reduce fuel expenses and CO<sub>2</sub> emissions through more efficient flights. Also, with the aim of realizing the use of precision landing, which is currently limited to straight lines, we are examining the introduction of the Ground Based Augmentation System (GBAS) to allow for curved lines to improve safety and convenience. Furthermore, discussions on new networks for globally sharing aviation information are also ongoing.

#### (ii) Pursuing enhancing metropolitan airport capacities

As continual effort directed at expanding the capacities of the metropolitan airports and airspaces, a yearly arrival/departure capacity of 447 thousand times was achieved at Tokyo International Airport (Haneda) in March 2014. At Narita International Airport as well, simultaneous parallel departure procedure has been introduced since October 2011 to enhance annual capacity without expanding noise-impacted zone and achieved a yearly capacity of 300,000 arrivals/departures in March, 2015 with the two runways currently in service by the familiarization with this method of aircraft operation and deployment of equipment which can monitor aircraft with high precision.

Specific studies will proceed to pursue further functional enhancements to the metropolitan airports.

### (4) Strategic promotion of international aviation measures

The Asia and Pacific region is considered to grow into the world's largest aviation market before too long. In the circumstances, what is of strategic importance to Japan is not only to contribute to strengthening of the aviation networks in this region but also to actively capture the impetus of the emerging countries in which numerous aviation projects are in progress.

Because unified public and private approaches are essential to winning orders, efforts have been made to collect information and consolidate bilateral ties at the primary initiative of the Council for International Deployment of Aviation Infrastructure.

Activities in FY 2015 included inviting key governmental officials of Mongolia (June 2015) and holding an aviation seminar in Vietnam (December 2015).



## 4 Facilitating traffic access to airports

With respect to improving traffic access to metropolitan airports, the Council of Transport Policy, which reviews approaches to future urban railways in the Tokyo Area, is examining such improvements. Studies towards the construction of the direct line to city center are also ongoing.

## Section 2 Implementing Comprehensive and Integrated Logistics Policies

In accordance with the Comprehensive Logistic Policy Guidelines (2013-2017), logistics policies are implemented in a comprehensive and integrated manner in coordination between the public and private sectors.

### 1 Implementing logistic policies to correspond with deepening global supply chains

To keep up with deepening global supply chains, efforts directed at reinforcing Japan's international logistic facilities are under way, including driving overseas deployment of the nation's logistic systems.

#### (1) Promoting overseas deployment of Japan's logistics systems

As supply chains continue to get globalized at a deeper level than ever, grabbing the evolving Asian markets would be essential to sustaining and enhancing the international competitiveness of Japan's industries. The formation of a sophisticated international logistics system should be of prerequisite importance to meet this urge. Capturing the Asian markets has become an urgent task for Japanese logistics companies that support the business expansion of the nation's industries in Asia.

However, the existence of institutional and customary constraints in the partner countries is posing challenges to Japan in expanding its high-quality logistics systems into Asian nations. Therefore, the MLIT is developing an environment to encourage overseas expansion of Japan's logistics systems through logistics pilot projects, dialogs between governments, development of human resource projects, and other means in collaboration between the public and private sectors.

#### (2) Strengthening the functioning of the international marine transportation network

As the globalization of economy progresses, the volume of international marine transportation continues to grow year to year. From the perspective of optimizing marine transportation through large bundle shipments, container carriers and bulkers continue to grow in size. In the meantime, key Asian ports have successfully increased their volumes of freight handling, resulting in concentrated ports of call, international trunk routes making fewer calls at Japan. Furthermore, slow responses to larger vessels to carry bulk cargo <sup>Note</sup> raise concerns over diminishing competitiveness in domestic industries forced into a mutually disadvantageous business environment.

In light of such conditions, Japan carries on its effort to streamline the flow of logistics that supports economic activity in Japan and life of citizens, improving the shipping entities at their location at home, which would in turn augment Japan's industrial competitiveness and realize economic reconstruction by maintaining and expanding the calls of international trunk routes at Japanese ports and simplifying and stabilizing imports of lifeblood materials, such as resources and energies.

In parallel with these approaches, efforts to shape an efficient network of marine transportation in which international and domestic transport services are integrated will be carried on, and relevant measures will be enhanced and developed at a deeper level of refinement.

#### (i) Enhancing the facilities of strategic international container ports

To strengthen Japanese economy's international competitiveness and to maintain and create citizens' employment, the international trunk routes of marine container transportation that link Japan to North America, Europe, and other places need to be consistently maintained and even expanded.

**Note** A generic term covering cargoes that ship in bulk, such as grains, iron ores, coal, oils and timber.

To address this need, Hanshin Port and Keihin Port were selected to be an International Container Hubs each in August 2010 to implement a fully package of structural and non-structural measures, including the construction of deepwater quays and efficient port management. Under the circumstances where ports of call for international trunk routes had been narrowing down because ships were becoming larger and collaboration between shipping companies progressing, the International Container Hubs Policy Promotion Committee released its final conclusions in January 2014 focusing on the three key principles of “Collecting Cargo,” as by picking up cargoes at international container hub from sources over a broad area, “Creating Cargo,” as by integrating industries in the hinterlands of strategic ports, and “Strengthening International Competitiveness” as by reinforcing the functionalities of deepwater container terminals or creating a government system of investment into port management companies.

At Hanshin Port, support at national expense is provided to cargo collection business conducted by Kobe-Osaka International Port Corporation, in which the national government made an investment. The number of domestic feeder route services at ports in West Japan increased about 40% from 68 calls per week to 95 calls per week, and about 140,000 TEU of cargoes were collected at Hanshin Port in FY 2015. These efforts are starting to yield fruit with the number of container cargoes handled at Kobe Port in 2015 recorded a record high since the Great Hanshin-Awaji Earthquake in 1995.

For Keihin Port, an 18 meter-deep container terminal, the deepest in Japan, started services at Minami-Honmoku Pier, Yokohama Port on April 2015. Also, Yokohama Kawasaki International Port Co., Ltd., which was established at Yokohama Port and Kawasaki Port in advance, was designated as port operate company in March 2016, and the national government has made an investment in this company, thereby establishing a framework for collaboration among the government, port authority and the private sector.

From now on, the International Container Hubs Policy will be deepen and also initiatives be accelerated.

(ii) Forming a marine transportation network for moving resources, energy sources and so on with stability and efficiency

Supply-demand balances for resources, energy, and so on, assuring Japan of stable, low-cost imports of these substances to build up industrial competitiveness of the nation’s industries and to maintain and even create employment and revenues should be one of the tasks of foremost importance as the nation depends on imports for virtually 100% of its requirements.

The MLIT seeks to build stable and efficient networks of marine transportation for resources, energies and so on by developing large ship-ready port and harbor facilities as key locations, promoting inter-business partnership and so on. On December 2013, the amended Port and Harbor Act came into effect to this end, along with associated cabinet orders and ministerial ordinances. The Act authorizes the Minister of Land, Infrastructure, Transport and Tourism to name designated cargo import ports as import sites for bulk cargoes, such as coals, and also stipulates measures in support of such ports. Currently, initiatives are undertaken at Onahama Port and Kushiro Port, which are designated as strategic international bulk ports. At Onahama Port, construction of an 18 meter-deep international logistics terminal started in FY 2013 as a base for handling coal imports, and it was designated as Specified Cargo Import Hub Port in December 2013; Fukushima, the port administrator, developed and published a plan for promoting specified use with the aim of driving joint sea transport of coal. At Kushiro Port, construction of a 14 meter-deep international logistics terminal started in FY 2014 as a base for handling grain imports, and it was designated as Specified Cargo Import Hub Port in February 2016.

The goal is to realize a stable, low-cost supply of imports and thus build up Japan’s industrial competitiveness, create more employment and prevent outflow of earnings abroad.

(iii) Building functionally core ports on the Japan Sea

Among the ports located on the coastal line of the Japan Sea geographically close to the fast economically growing nations across the sea, core ports were selected in November 2011 in an effort to capture the economic booms in these nations into Japan’s growth through selection of functions and concentration of measures and through port-to-port linkage and to build a disaster-resistant logistics network following the Great East Japan Earthquake. We will continue to follow up on the progress and other aspects of the plans formulated by port management bodies.

(iv) Building an integrated logistics information platform

An integrated logistics information platform that combines Nippon Automated Cargo Consolidated System (NACCS), with Container Logistics Information Service (Colins) is being built in order to improve the efficiency of system

administration and user convenience.

(v) Enhancing functionalities of international ports

The MLIT not only develops international physical distribution terminals, etc. in the international maritime transport network or at regional hub ports for consolidated competitiveness, etc. of local key industries but also pushes efforts directed at enhancing the functionalities of these ports, as by pushing their migration to ICT. To address increasingly sophisticated and diversified needs for East Asian logistics, which is not much different from domestic logistics in both terms of time and distance and build a low-cost logistics system, the Ministry pushes ahead with functional enhancements to unit loading terminals <sup>Note</sup> and with the construction of facilities designed to smooth the flow of cargo transshipment.

(vi) Developing a marine transportation environment

Among all international backbone routes, those that could interfere with bay navigation because of shallow waters, etc. have been improved and Aids to Navigation have been established to develop a marine transportation environment that combines the safety of navigation with the efficiency of marine transportation.

Also, with the aim of evacuating ships promptly and smoothly to safe sea areas at times of tsunami and other disasters and mitigating congestion in peacetime to realize safe and efficient operation of ships, the Japan Coast Guard is working to consolidate the Tokyo Bay Vessel Traffic Service center and port traffic control offices and develop a system for implementing these operations in an integrated manner. In conjunction with the operation, we are working on necessary revisions of systems to maintain maritime traffic functions at times of disasters.

(3) Developing advanced aviation logistics facilities to pursue increased international competitiveness

The MLIT pushes efforts to consolidate the functionalities of the metropolitan airports, drive an airfreight hub implementation of Japan's hub airports, such as Kansai International Airport and Chubu International Airport, and simplify the transportation process flow in its bid to positively capture airfreight originating from and arriving in Asia as it promises further leaps.

(4) Improving logistics for promoting exports of agricultural and marine products and food products

The exports of agricultural and marine products and food products reached 745.2 billion yen in FY 2015, reviewing the record high for two consecutive years. Given that keeping the quality and enhancing cost competitiveness of agricultural and marine products and food products are key to expand their exports. Furthermore, we are pushing forward efforts to increasing the sophistication and efficiency of logistics, such as spreading and promoting technologies and devices for preventing those products from perishing during transportation and keep them fresh and expanding transportation of large-volume shipments by combining different items of cargos.

(5) Strategic development and utilization of a logistically important road network

Building an efficient logistics network is of crucial importance to motor-truck transportation, which accounts for about 80% of domestic transportation. Because of this, the construction of ring roads in the three major metropolitan areas, access roads to airports and ports is underway. In October 2014, "road network for vehicles exceeding the weight and size limits" were separately designated among these roads to simplify the procedural routine for issuing passage permits for those large-sized vehicles using roads in these sections. This is aimed at sectional enhancement by designation of last-one-mile sections to logistics bases and systematic elimination of impassable sections. In addition, we are steadily pushing forward with "smart logistics management" utilizing information technology, such as simplification of the special vehicle passage permit for vehicles with ETC 2.0 and demonstration experiment of operation management support services for ETC 2.0 vehicles. Efforts are also underway to utilize and upgrade existing road networks, including the construction of smart ICs.

**Note** A unit loading terminal is a terminal ready for the scheme of transportation in which freights are loaded and unloaded, unitized, in chasses, containers or the like, to make their physical distribution faster and more efficient.

### (6) Measures that help consolidate international logistics facilities

To meet the needs for the improved logistics network where international freight transport is efficiently combined with the domestic transport including all modes of land, sea and air, we are driving forward the realization of the interoperation of chasses (trailers that have no power drive) to and from Korea and China.

Also, we will promote standardization of Japan's logistics systems to be used internationally, thereby contributing to improved logistics environments in Asian distribution networks and strengthening international competitiveness of Japanese logistics companies, based on the services and knowhow that domestic logistics companies have, which is at the world's highest level, including cold chain and delivery services.

The MLIT will push the development and redevelopment of physical distribution sites and facilities around international ports, etc., which are nodal areas for international physical distribution in metropolitan zones. They will also undertake this at the ports that are the strongpoints of physical distribution and industry. This will be done to build up international competitiveness and form an efficient network of physical distribution as an integral part of urban environment improvement activity, while also seeking better disaster preparedness to deal with massive disasters as they occur.

## 2 Measures aimed at building an efficient and sustainable logistics system in Japan

Additional approaches are underway to build an efficient and sustainable logistics system at home to toughen Japan's industrial competitiveness and increase logistics productivity while easing environmental loads.

### (1) Flow of interregional logistics

The MLIT proceeds to develop nodal points of logistics, such as ports and freight stations, to drive combined multimodal transportation. Cargo transportation by rail can be used more efficiently by utilizing the facilities that have been developed to increase capacities of cargo transportation by rail. The construction of combined multimodal transport terminals is also being proceeded at Toyo Port and elsewhere to consolidate coordination between marine transportation and other modes of transport. Furthermore, in June 2015, we compiled a report on various issues concerning alternative transportation at times of railway transportation disruptions. Also, since FY 2015, we have been working on the development of low floor type railroad cars that meet the height restrictions of existing structures such as tunnels with the aim of promoting modal shift of 40 feet container to railway transportation in domestic transportation of import/export container cargos.

Key road networks will also be constructed to streamline the flow of truck transportation.

### (2) Optimizing local logistics in cities, depopulated and other areas

Urban distribution centers <sup>Note</sup> have been developed in 20 cities and 29 locations (27 of which were already in service by the end of March 2016), in accordance with the Act on the Improvement of Urban Distribution Centers, to enhance the urban functions of logistics and streamline road traffic through the intensive location of distribution facilities.

To prevent roadside parking for cargo handling purposes, the Ministry has encouraged local governments to include the mandatory installation of parking spaces for cargo handling in their municipal parking ordinances. As of the end of March 2015, municipal ordinances that stipulate mandatory installation of parking spaces for cargo handling at commercial facilities of above certain size were established in 89 cities.

Measures taken to optimize traffic flow include making focused attempts at eliminating congestion bottleneck points, constructing graded intersections, and resolving railway crossings that are closed at nearly all times. In parallel, non-structural measures, such as those aimed at encouraging joint transportation and delivery pursuant to the Low Carbon City Promotion Act to boost loading efficiency, have been promoted.

Furthermore, while the number of people having difficulty in daily shopping is increasing in depopulated and other areas, the logistics efficiency is on the decline. Therefore, based on the report compiled by "review meeting on sustainable logistics networks that support local communities" at the end of FY 2014, we implemented model projects in five regions across Japan and examined operational issues and countermeasures to accumulate and spread practical expertise.

**Note** A large-scale urban distribution center intensively equipped with distribution facilities, such as truck terminals and warehouses, which is conveniently located for ready access to an expressway interchange, for example.



Starting from June 2015, we held the “review meeting on promoting diversification of delivery receipt methods to reduce redeliveries” consisting of delivery business operators, mail order business operators and the like to understand the current status and analyze causes with the aim of reducing avoidable redeliveries, and compiled a report on tasks to be addressed and direction of countermeasures in September of the same year.

The development of technologies and businesses for unmanned aerial vehicles, or drones, is rapidly progressing, and there is a possibility of using them in the area of logistics to transport goods in depopulated areas and cities and in emergencies such as a disaster. Therefore, on the assumption that flight safety is ensured based on formulation of basic flight rules upon enforcement of the Act to Partially Amend the Civil Aeronautics Act in December 2015, we plan to work toward early realization of drone use in logistics by conducting surveys and identifying issues toward commercialization of drones.

### (3) Further efforts to implement logistic services that are more sophisticated, comprehensive, and efficient.

To accelerate the implementation of the 3PL business <sup>Note 1</sup> Furthermore, the MLIT not only arranges for the environment in which logistic companies find it easier to make inroads into the 3PL business easier, by participating in human resources development and training sessions, creating guidelines for small and medium business companies to enter the EC market, but also seeks to generalize and simplify the logistic flow through a system of accreditation for total efficiency plans <sup>Note 2</sup> in accordance with the Act on Advancement of Integration and streamlining of Distribution Business.

As of the end of March 2016, 289 total efficiency plans were accredited in accordance with the Act. In addition, we compiled “KPI for Logistics Companies <sup>Note 3</sup>” in March 2015 with the aim of increasing efficiency in logistics operations through coordinated efforts between logistics companies and shippers.

### (4) Measures for labor shortage in logistics sector

Under the influence of falling birthrates with aging populations, concerns over shrinking workforces are looming mainly in the trucking and domestic shipping sectors. Amid these circumstances, in order to secure the human resources needed in logistics and enhance logistics efficiency/labor saving, we are working to further facilitate modal shifts and joint transportation and to reduce redeliveries in order to boost logistics efficiency/labor saving, while striving to promote social significance of logistics business effectively, in accordance with the Action Plans for Measures for Labor Shortage in Logistics Sector (March 2015 by the MLIT).

In addition, the Logistics Taskforce was established under the Subcommittee of Infrastructure Development Council in April 2015, and based on a report compiled in December of the same year at a joint meeting with Basic Policy Taskforce under Road Subcommittee of Infrastructure Development Council, we are working to increase productivity of logistics business, while promoting development of working environments where everyone can work and take active roles regardless of gender and age as well as creation of attractive workplaces where people can keep motivated to work with pride, such as by reducing long work hours and increasing wages.

**Note 1** Third-party logistics: an outsourcing service that undertakes a fully integrated flow of physical distribution of cargoes from the cargo owners.

**Note 2** A plan that is committed to integrating and expediting physical distribution mainly at a physical facility located in the vicinity of a social infrastructure, such as an expressway interchange or port, as by installing information systems, disaster prevention facilities and the like while seeking concentrate transportation networks and share shipping and delivery operations.

**Note 3** KPI is abbreviation for key performance indicators, meaning indicators used for monitoring operational processes for achieving corporate targets.

## Column

## Measures to reduce redelivery in home delivery services

Recently, the use of home delivery services has sharply increased (15% up over the past five years) because of the massive expansion of electronic commerce, and approximately 20% of packages have been redelivered. A tentative calculation by the Ministry of Land, Infrastructure, Transport and Tourism (MLIT) reveals that such redelivery causes significant social losses, such as “approximately 420,000 tons of carbon dioxide emissions per year, which is equivalent to 1% of annual emissions from commercial trucks (also equivalent to annual absorption by a cedar forest 2.5 times the area of the inner Yamanote Line)”, “approximately 180 million labor hours per year (equivalent to manpower of 90,000 people per year)”, etc.

In response to the findings, MLIT has held Review Meetings participated in by relevant enterprises, such as home delivery companies, mail order firms, convenience stores, and locker service companies, and carried out a questionnaire survey about redelivery in home delivery services <sup>Note</sup>. According to the results, redelivery was caused because the receivers “didn’t expect the delivery” or “expected, but were not home,” each accounting for about 40% of the causes.

Reduction of social losses inflicted by redelivery will lead to the suppression of global warming and the improvement in shortage of truck drivers due to the declining birthrate and aging population. Also, in order to maintain and make better Japan’s highly convenient delivery services in the future, it is necessary to reduce wasteful redelivery.

To achieve the reduction in redelivery, in addition to further collaboration among relevant enterprises and their finding of better ways, each citizen is required to understand the social losses from the redelivery and offer cooperation.

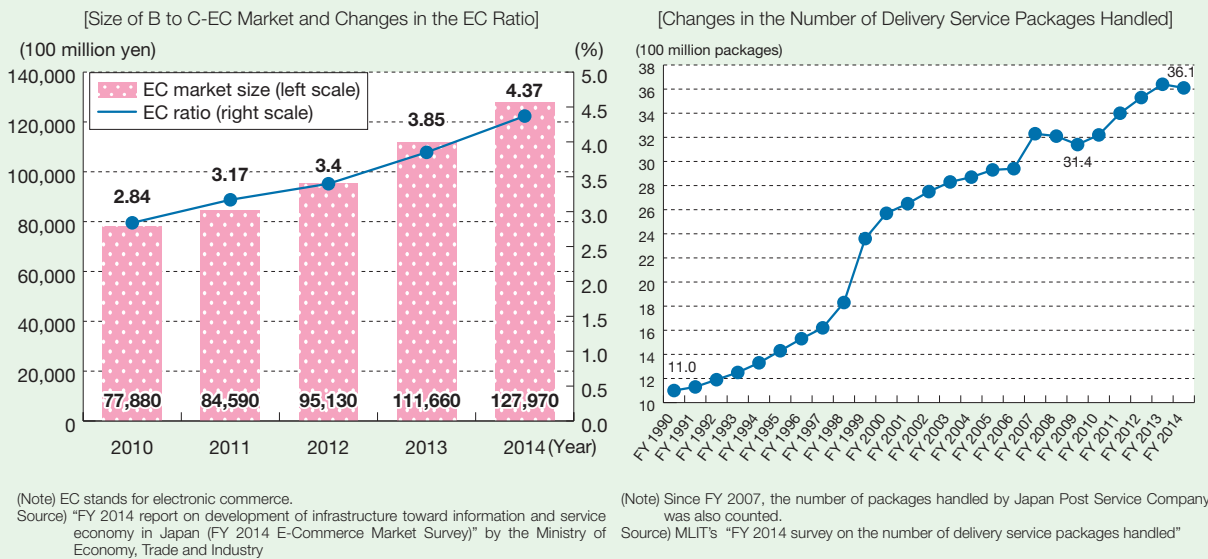
MLIT has summarized main concrete measures to decrease the redelivery, as follows.

<Main concrete measures>

- (i) Introduction of simpler methods to designate delivery date and time by utilizing the Web, applications, etc.
- (ii) Promotion of public understanding of social losses from the redelivery and the grant of benefits to receivers according to their contribution to lower redelivery.
- (iii) Improvement in convenience by expanding home delivery and mail order services handled by convenience stores, offering better procedures for receiving, etc.
- (iv) Promotion of installation of home delivery boxes in houses and rightsizing of packages for the delivery boxes.
- (v) Introduction and expansion of new methods for receiving packages, such as installation of home delivery boxes in railway stations and other public areas.

In order to realize these concrete measures, it is necessary for various relevant enterprises to collaborate and make efforts beyond the existing boundaries. Furthermore, for Japan’s logistics business to raise the productivity and to maintain and improve the services, it is essential that cargo owners and logistics companies address this redelivery issue in an integrated manner, and that enterprises and citizens, the users of the services, understand and cooperate with the logistics business.

**Note** Questionnaire survey of receivers of redelivery taken by Review Meeting on promotion of diversified methods for receiving packages, etc., toward reduction in the redelivery in home delivery services.



## Section 3 Reactivating Industries

### 1 Trends in railway industries and measures

#### (1) Railway business

##### (i) Trends and measures in the railway business

The number of railway passengers carried in FY 2014 increased from its year earlier level. At Japan Railway, transportation on Shinkansen increased while transportation on conventional railway lines decreased, with transportation on private railways on the increase.

In FY 2014, the annual volume (tons) and distance (kilometers) of railway freight were almost flat from the previous fiscal year, while carload freight slightly decreased.

The railway operators are working on such initiatives as presenting guidance information in multiple languages, showing route and station names along with their alphanumeric notation and offering free public wireless services in order to enhance railway competitiveness, increase convenience in coordination with livelihood services and be better prepared in receiving inbound foreign tourists.

Additionally, traffic IC cards continue to gain growing popularity across the nation since their pioneer "Suica" was launched by JR East in 2001. Since March 2013, 10 kinds of traffic IC cards used by JR and major private railways and the like have been made interoperable. As IC cards penetrate more railway operators and areas, they could help improve passenger convenience and reactivate regional economies.

##### (ii) Initiatives towards the complete privatization of Japan Railways

The individual companies of Japan Railways incorporated upon breakup and privatization of Japan National Railways in April 1987 have carried on their respective management efforts to meet their own regional conditions and management climates over the following nearly 30 years. Meanwhile, East Japan Railway Company, West Japan Railway Company and Central Japan Railway Company have been completely privatized with completion of sales of shares held by the Japan Railway Construction, Transport and Technology Agency.

Hokkaido Railway Company, Shikoku Railway Company, Kyushu Railway Company and Japan Freight Railway Company, on the other hand, carry on their respective efforts to increase revenues and cut costs. In the light of the social significance of the roles these companies play, such as securing means of local transportation and driving railway freight transportation having low environmental loads, necessary aids have been extended to them to reinforce their management structure and thus make them economically viable by leveraging funds from the JR TT Special Services Account since FY 2011 in accordance with the Act on Treatment of Debt, etc. of JNR Settlement Corporation (Act on Treatment of Debt,

etc.), in addition to the fixed property tax breaks already in effect.

Subsequently, as stable management base was established for Kyushu Railway Company with listing conditions in place, complete privatization of it was decided and the Act to Partially Amend the Law concerning Passenger Railway Companies and Japan Freight Railway Company was passed in June 2015 (enforced in April 1, 2016) so that Kyushu Railway Company will be removed from the scope of application of the Law concerning Passenger Railway Companies and Japan Freight Railway Company. For Hokkaido Railway Company and Shikoku Railway Company, in response to announcement by the MLIT Minister in June of the same year, it was decided to take additional support measures to enable implementation of necessary investments in safety and maintenance from FY 2016 under the Debt, etc. Disposal Act.

## (2) Railway vehicle industry

The volume of newly built railway vehicles by value moved flatwise for domestic shipment and varied depending on the status of orders for overseas shipment. Production by value in FY 2014 stood at 168.4 billion yen (1,645 vehicles.) Production by value were broken down into 93.1% (156.8 billion yen) for domestic-bound and 6.9% (11.6 billion yen) for export-bound, former rising 1.4% over FY 2013 and the latter decreasing 69.9% over FY 2013.

Production of railway vehicle parts (such as power generators and bogies) was 278.9 billion yen by value and that of signal protection devices (such as automatic train control devices and electrical interlocking devices) was 121.7 billion yen.

Rolling stock builders and others are working to develop rolling stocks that fill diverse social needs, such as speed, safety, passenger comfort, low noise and being barrier-free, by partnering with railway operators and also to set up and even expand local production and service sites in the U.S., U.K. and elsewhere with the recent order taking for overseas projects as an impetus.



## 2 Trends in motor truck transport business and measures

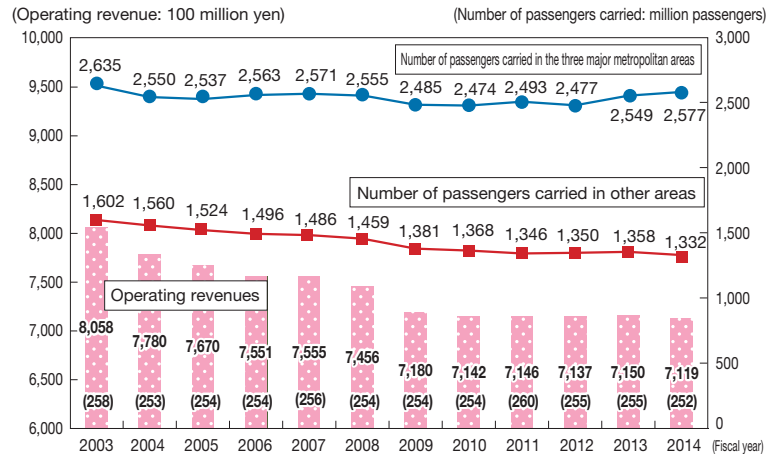
### (1) Passenger vehicle transport business

#### (i) Motor bus business

Demand for motor bus transportation, which is represented by the number of passengers carried and operating revenues, remained on the decline in pace with changes in the urban structure, such as a hollowing of the central area of a city, and increased ownership of private cars with the progress of motorization. While business activity remains sluggish, the climate surrounding the motor bus business remains extremely harsh.

Figure II-6-3-1

Changes in the Number of Passengers Carried by Motor Buses and Operating Revenues



(Notes) 1 Numeric data above has been collected from the bus operators who own a fleet of at least 30 motor buses. The parenthesized value for each fiscal year denotes the total number of bus operators who own a fleet of at least 30 buses for that fiscal year.  
 2 The number of passengers carried in the three major metropolitan areas is an aggregate total for Saitama, Chiba, Tokyo, Kanagawa, Aichi, Mie, Gifu, Osaka, Kyoto and Hyogo.  
 Source) MLIT

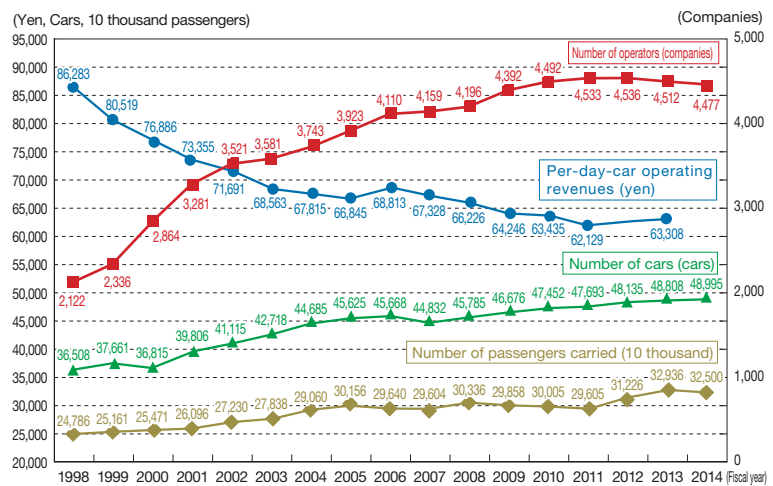
#### (ii) Chartered bus business

Since deregulations in February 2000, the chartered bus business has sponsored low-cost, diversified bus tours in its effort to deliver better user services, but competition is stiffening with increase in the population of operators in play. Furthermore, as group tours continue to be downsized and travel goods are lower-priced, transportation revenues have been declining. In addition, upsurges in the fuel charges continue to toughen the business climate surrounding the chartered bus business.

On the basis of the discussions at the Review Panel on the Future of the Bus Service that met in the wake of the April 2012 Kanetsu Expressway rapid tour bus accident, the Rapid and Chartered Bus Safety and Confidence Recovery Plan was worked out to carry on two-year efforts intended to add to the safety of rapid and chartered buses in FY 2013 and FY 2014.

Figure II-6-3-2

Chartered bus business overview



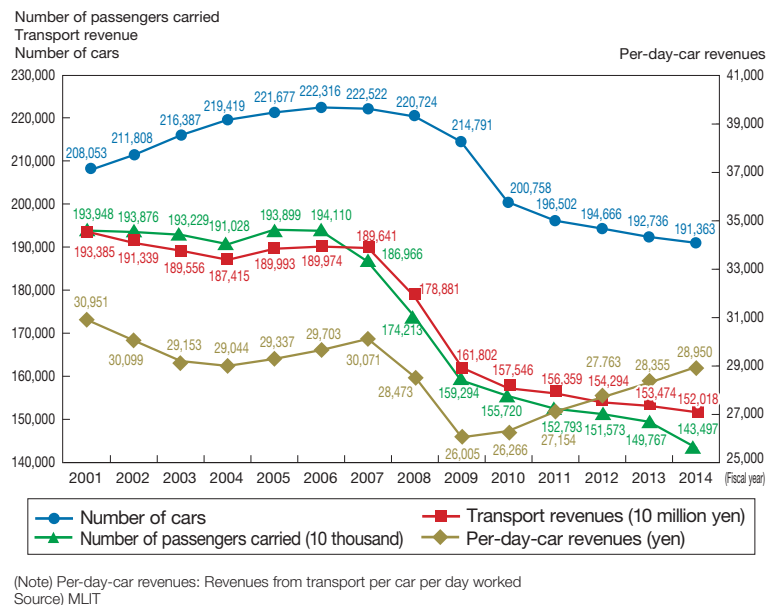
Source) MLIT

### (iii) Taxi business

As for the taxi business, amendments to the “Act on Special Measures Concerning Rationalization and Revitalization of General Passenger Vehicle Transportation Businesses in Designated Districts” enforced in October 2009 were passed as a lawmaker-initiated legislation at the 185th extraordinary session of the Diet in 2013 to upgrade the drivers’ working conditions, enhance the level of taxi services and so on, and came into effect in January 2014.

The MLIT seeks to resolve the problems of the oversupply of taxis and upgrade services and safety on the basis of statutory regulations and collateral resolutions made at both Houses of the Diet.

Figure II-6-3-3 Developments in Per Day-Vehicle Reviews of Hires and Taxes



### (2) Replacement driver service

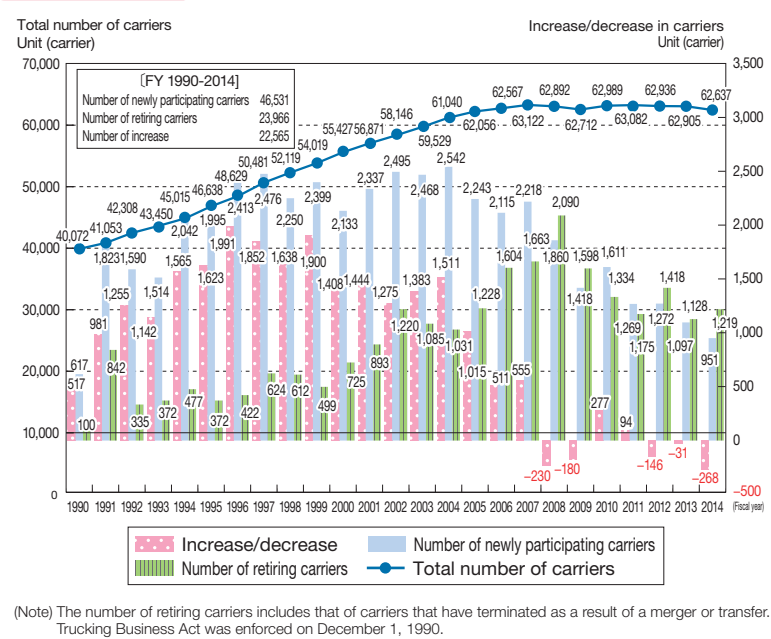
The replacement driver service is used as an alternate means of transport for drunken drivers. As of the end of December 2015, 8,866 replacement driver service providers are in operation. Keen to add to further soundness of the replacement driver service, the MLIT has formulated “Measures for Making the Replacement Driver Service More Sound for Added Safety and Security” in collaboration with the National Police Agency in March 2012 as part of its continuing effort to drive various relevant measures. Furthermore, the MLIT developed “measures to address issues concerning user protection toward appropriate operation of replacement driver services” in March 2016 in order to further ensure protection of users in replacement driver service, and these measures are scheduled for implementation starting from April 2016.

### (3) Truck transport business

The number of motor truck carriers had been on the rise for long, but the number of carriers has been moving crabwise at about 63,000 since 2008.

Since about 99.9% of truck transport business operators are small and medium sized businesses, they are in a weak position in relation to shippers and other business partners and thus subject to such issues as not being able to receive appropriate fares and being forced to accept waiting time for convenience of shippers. Therefore, in FY 2015 we set up councils consisting of shippers, transport companies, relevant ministries and other relevant parties centrally and in each prefecture for full-fledged discussions to improve transactional environments, long working hours and productivity of the truck transport industry. In FY 2016 and onwards, we plan to implement pilot projects to create spe-

Figure II-6-3-4 Trends in the Number of Motor Truck Carriers



cific improvement case examples and disseminate/expand them.

Also, in light of concerns about labor shortages for truck drivers over the medium and long term, we will work on measures that contribute to improved productivity in the truck business by, for example, facilitating introduction of junction transportation, in addition to the above mentioned efforts.

#### (4) Securing and fostering bearers of motor carrier businesses, etc.

Motor carrier businesses that undertake the movement of people and goods (trucking, bus and taxi businesses, and automotive maintenance business that contributes to safety assurance in these businesses) are a social infrastructural industry of vital importance to sustaining Japan's economy and means of regional transportation.

A look into the employment structure of the motor carrier businesses, however, suggests that the workforce more or less depends on middle-aged and elderly workers, with female workers accounting only for about 2%. If this condition lasts, a serious shortage of bearers of these businesses is feared to occur in the future.

In the light of these circumstances, the MLIT has defined the year 2015 as the "first year of human resources securing fostering" and worked out its future approaches to analyzing current status across these businesses, identifying problems, encouraging the work of younger and female workers and so on.

For the truck business, in addition to having full-fledged discussions to improve transactional environments and long working hours at councils consisting of members that include shippers and other relevant parties, we are working on measures to secure bearers by, for example, enhancing information dissemination and awareness of business managers, leveraging "Female Truck Driver Promotion Project Site".

Furthermore, in the area of automotive maintenance, we will work to improve the image of mechanics in the mind of young people including women by promoting mechanics by visiting higher educational institutions and using posters in joint efforts of private and public sectors. Also, we are conducting surveys on the actual status and putting together improvement measures concerning the working environment and treatment of workers through expert review meetings.

Figure II-6-3-5

Employment Structure of the Motor Carrier Businesses, etc.

|                                               | Bus                        | Taxi                       | Truck                      | Automotive maintenance     | Total industry average     |
|-----------------------------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Number of drivers and maintenance technicians | 130,000<br>(FY 2014)       | 350,000<br>(FY 2014)       | 800,000<br>(2015)          | 400,000<br>(2015)          | —                          |
| (Female ratio)                                | 1.5%<br>(FY 2014)          | 2.5%<br>(FY 2014)          | 2.5%<br>(2015)             | 1.3%<br>(2015)             | 43.2%<br>(2015)            |
| Average age                                   | 49.2<br>(2015)             | 58.9<br>(2015)             | 47.3<br>(2015)             | 44.3<br>(2015)             | 42.3<br>(2015)             |
| Working hours                                 | 209 hours<br>(2015)        | 194 hours<br>(2015)        | 218 hours<br>(2015)        | 188 hours<br>(2015)        | 177 hours<br>(2015)        |
| Annual income                                 | JPY 4.26 million<br>(2015) | JPY 3.09 million<br>(2015) | JPY 4.37 million<br>(2015) | JPY 4.21 million<br>(2015) | JPY 4.89 million<br>(2015) |

(Notes) 1 The ratio of female in automotive maintenance is that for second level automotive mechanics.  
 2 Figures for working hours were estimated by the MLIT's Road Transport Bureau from scheduled hours worked + nonscheduled hours worked in the Basic Survey on Wage Structure. Scheduled working hours indicate the number of hours actually worked during the hours from start time and fish time on scheduled work days on June each year as stipulated in employment rules or other such documents of the business office. Nonscheduled working hours indicate the number of hours actually worked outside the scheduled working hours and the number of hours actually worked on prescribed days off.  
 3 Annual income is the figures estimated by the MLIT's Road Transport Bureau from regular salary paid in cash x 12 + annual bonuses and other special salary in the Basic Survey on Wage Structure. Regular salary paid in cash means salary paid in cash of six-months' worth (before deducting income tax, social insurance premiums, etc.) and include base salary, rank allowance, attendance allowance, commuting allowance, family allowance, overtime allowance and the like. Annual bonuses and other special salary means the amount of bonuses and special salary such as fiscal year-end special allowance paid during the January-December period of the year preceding the survey year.  
 (Source) Prepared by the MLIT's Road Transport Bureau from Labor Force Survey by the Ministry of Internal Affairs and Communications, Basic Survey on Wage Structure by the Health, Labour and Welfare Ministry, Japan's Bus Service by the Nihon Bus Association and Hire-Taxi Year Book by the Japan Federation of Hire-Taxi Associations, and Automotive Maintenance White Paper by the Japan Automobile Service Promotion Association.

## 3 Trends in maritime industries and measures

### (1) Achieving stable marine transportation

#### (i) Achieving Japanese-flagged vessels and Japanese seafarers

As Japan is a nation with limited resources surrounded by the sea in all its sides, international shipping, which depends on 99.6% of the Japan's trade, plays a significant role to its infrastructure for Japanese economy and national life. Maintaining a certain size of Japanese-flagged vessels and seafarers, over which Japan has regal jurisdiction, in peacetime is necessary in light of ensuring economic security assurance, the size has been on a declining trend due to loss of cost competitiveness in association with yen's appreciation and other factors.

In order to address these situations, the MLIT has worked to secure Japanese-flagged vessels and Japanese seafarers in a systematic manner by applying the tonnage tax system <sup>Note</sup> since 2008 to operators of outgoing ships certified by the plan

**Note** A tax system that calculates the amount of corporate tax on the basis of a predetermined deemed profit according to vessel tonnage, rather than yearly profits. Similar tax systems are already introduced in the world's major nautical nations.

for securing the Japanese-flagged vessels and Japanese seafarers under the Marine Transportation Law.

On the other hand, causing the terrible Great East Japan Earthquake and the nuclear power plant accident, the significance of economic security assurance through Japanese merchant fleets have been more actualized than before. Among of the situation, the Marine Transportation Law was amended in September 2012, establishing a deemed-Japanese-flagged vessel system. The deemed-Japanese-flagged vessel means a foreign-flagged vessel operated by Japanese shipping firm and owned by their overseas subsidiaries which can change its flag to Japan immediately in case of issuing the “Order to Engage in Voyage” based on Marine Transportation Law. Japan will support the increased Japanese-flagged vessels and secure the deemed-Japanese-flagged vessels to perform a complementary role of Japanese-flagged vessels.

Japan will pursue to consolidate stable maritime transport that is functional in times of emergencies, as well as at ordinary times, by measures and other approaches as mentioned.

#### (ii) Acquiring and fostering seafarers (Seamen)

Acquiring and fostering Japanese ship’s seafarers, human resources of marine transportation, is of essential importance to boosting Japan’s economy and maintaining and upgrading national life. Coastal shipping sailors are aging with about 50% of them being 50 years of age or older, and it is necessary to secure and foster a sufficient number of young seafarers so that bearers’ shortages will not occur when old seafarers retire in a large number. Therefore, we are striving to strengthen the system for supplying seafarers by such means as raising the quotas of education institutions for seafarers and expanding

employment outside such institutions, as well as to increase employment opportunities for new seafarers by supporting business operators that employ new seafarers in a systematical manner and holding job interviews for new graduates.

On the other hand, a certain number of ocean-going Japanese sailors need to be secured and fostered from economic security and other perspectives. Therefore, we are making efforts to secure Japanese seafarers, including steady implementation of the plan to secure Japanese vessels and seafarers.

As Asian seafarers account for a greater proportion of the total seafarers aboard Japanese merchant fleet, training aimed at improving the skills of mariner’s instructors in the developing nations has been conducted to help secure and foster more capable Asian seafarers.

The I.A.I. Marine Technical Education Agency (MTEA) and the National Institute for Sea Training (NIST) are the seafarers training institutions over which the MLIT holds jurisdiction. The MTEA not only provides the basic knowledge and skill required for a ship operating officer but also implements reeducation to meet shipping industry’s requests for to

Figure II-6-3-6

Trend in number of Japanese Seafarers Aboard International Vessels, Japanese Merchant Fleet

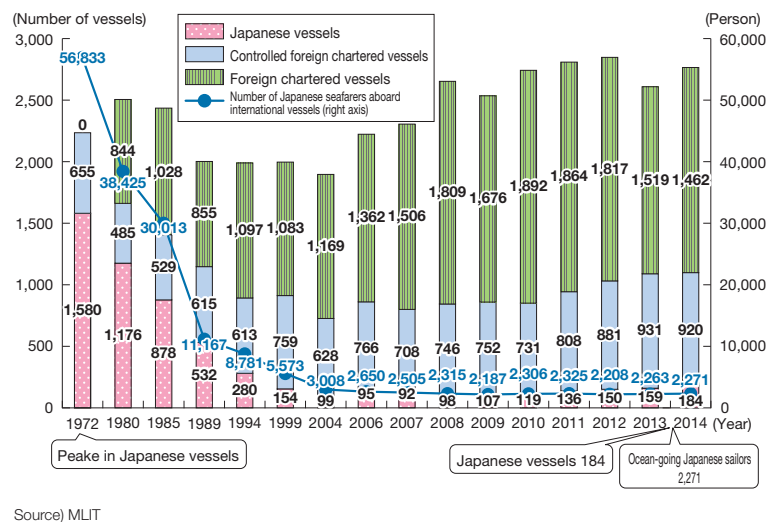
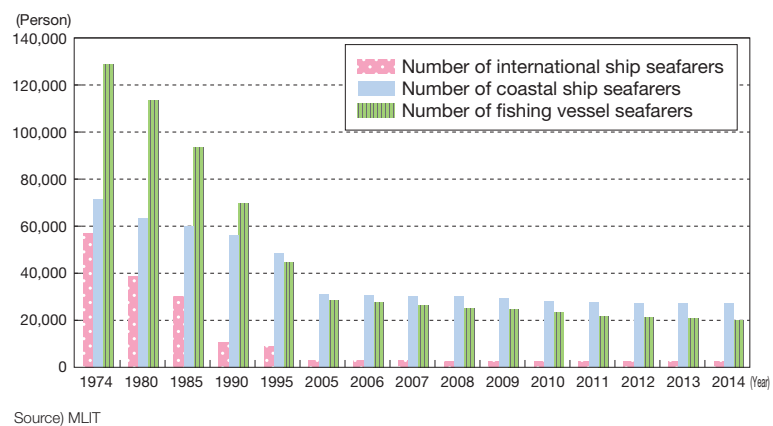


Figure II-6-3-7

Changes in the number of Japanese seafarers





catch up with technological innovations. The NIST provides unified on-board practical training on students at the MTEA, mercantile marine universities and colleges of technology using five training ships.

In April 2016, the two entities were consolidated into “the I.A.I.Japan agency of Maritime Education and Training for Seafarers(JMETS)” that provides classroom lecture and on-board practical training using training ships in an integrated manner.

The new entity, as a core seafarer educational institution, steadily pushes forward the securing and fostering young seafarers by advancing training contents and making the best use of its resources.

In addition to these efforts to secure and foster seafarers, continued efforts will be directed at promoting On-board Occupational Health and Safety Management System and Work Improvement on Board (WIB), a continual approach to reducing seafarers accidents to add to the vocational charms of the job of being a seafarer.

### (iii) Disseminating Maritime Thought <sup>Note</sup>

While achieving stable marine transportation is crucial in supporting the Japanese economy and national life, the understanding of sea by the public is not necessarily sufficient.

The MLIT is making efforts of maritime publicity activities, such as sponsoring Sea-Festa (held in six cities and one town, including Kumamoto-shi, in 2015) and commending those who have been instrumental in helping Japan to grow into a maritime nation (Prime Minister’s Commendation).

## (2) Marine transportation industry

### (i) International shipping

The volume of cargo movement on ocean in the world for 2014 stood at 10.529 billion tons (up 3.5% year-on-year) with Japan’s volume of seaborne trade for the same year at 0.95859 billion tons (down 1.5% year-on-year).

International shipping in FY 2014 saw improvements in the business environment due to, among other factors, a moderate economic recovery in European and US countries and a decline in fuel oil prices, amid continuing severe circumstances such as economic decelerations in emerging countries and declining market conditions for farers due to oversupply of ships.

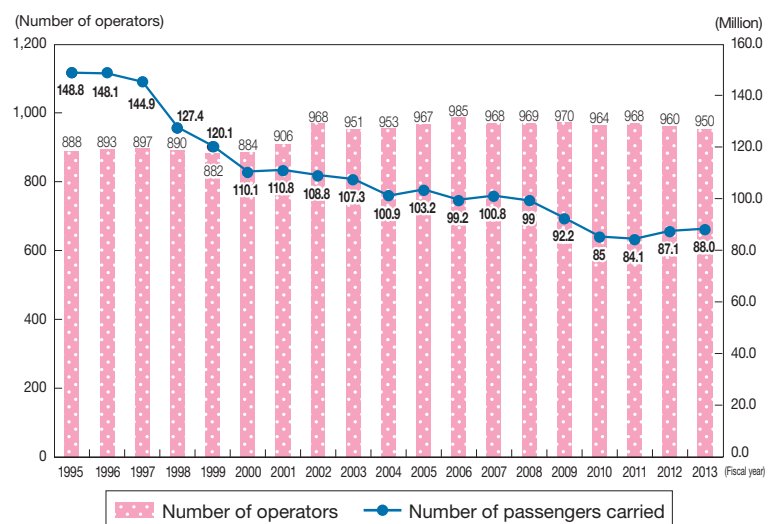
### (ii) Domestic passenger shipping business

The domestic passenger shipping business plays a significant role as a means of regional transportation, and ferryboat transportation, in particular, has become a key mode of transportation for modal shifts in the nationwide logistics network. In the meantime, the domestic passenger shipping business needs to boost its competitiveness or toughen its structure, as by pushing further automation to cut costs, to break through a variety of confronting challenges, such as declining demand for transportation with changes in the demographic structure and soaring fuel prices.

Accordingly, a variety of support measures have been advanced in collaboration with local governments or operators, including making ships more energy-efficient through the utilization of co-owner ship construction institution of the Japan Railway Construction, Transport and Technology Agency, adding to the charms of voyage by sea and augmenting user convenience in conjunction with the

**Note** General knowledge of seas in general, including marine usage, maritime transportation and marine environments and maritime safety.

Figure II-6-3-8 Trends in the Number of Domestic Passenger Ship Operators and Number of Passengers Carried



(Notes) 1 Sum total for general passenger liner routes, specified passenger liner routes and passenger non-liner routes  
2 Number of operators as of April 1 of each year (as of August 1 for 1965-1969)  
Source) MLIT

tourism industry.

### (iii) Coastal shipping

Coastal shipping offers high economic efficiency and excellent shipping characteristics in terms of environmental protection. Coastal shipping is a key means of conveyance supporting Japan's economic activity and national life, as it commands about 40% of domestic distribution and about 80% of industrial basic material transport. In recent years, the economy is on a recovery trend but the overall freight transportation volume was lower compared to FY 2014 due to reaction to the hike in demand before the consumption tax increase and impact of the Chinese economy. In the meantime, the building of new ships continues strong but overage ships still account for a bulk of the total ship population. Promoting shipbuilding to replace at a steady pace, coupled with efforts to simplify the flow of shipping, should be the key to assuring stable shipping while responding precisely to demand changes.

To address such circumstances, the MLIT has reduced charter ages by taking advantage of joint ownership shipbuilding scheme of Japan Railway Construction, Transport and Technology Agency, an independent administrative agency, and offered exceptional tax measures to encourage migration to building ships that offer superior environmental performance, thereby pushing the implementation of measures aimed at building competitiveness, as by saving ship energy requirements. The MLIT formulated and publicized "Guidelines for Ship Management Activities in Coastal Shipping" to help reactivate coastal shipping that leverages ship management firms in July 2012 and also introduced techniques for assessing compliance with the Guidelines in April 2013 to "visualize" the management services provided by the ship management firms. Furthermore, the smooth and steady implementation of provisional measures for coastal shipping <sup>Note</sup> is also supported.

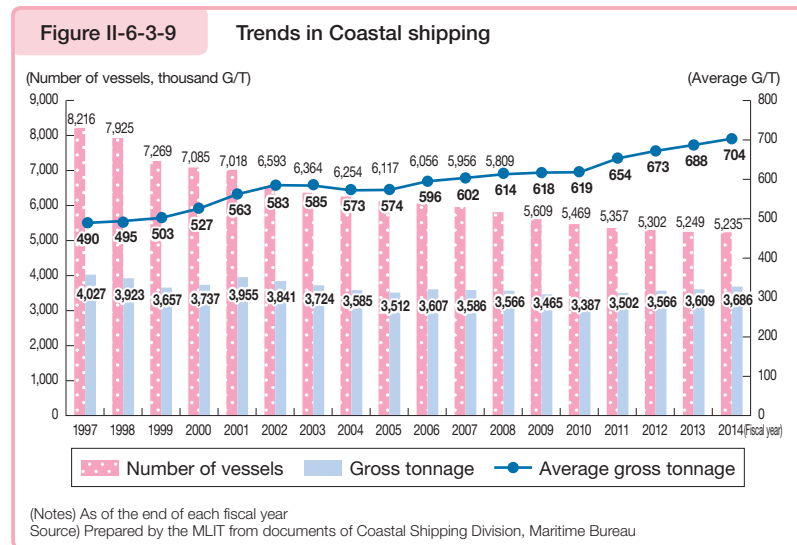
### (iv) Port and harbor transportation business

The port and harbor transportation business plays a significant role as an interconnecting node between marine sea and land transportation in support of Japan's economy and national life. As of the end of March 2015, there are 874 transporters (0.5% down from the previous year) in the general port and harbor transportation business at the 93 ports nationwide that are governed by the Port and Harbor Transportation Business Act. Vessel loading and unloading volumes for FY 2014 were approximately 1,438 million tons nationwide (down 0.4% from the previous year).

## (3) Shipbuilding industry

### (i) Present status of the shipbuilding industry

Japan's shipbuilding industry is an extremely important industry that contributes to regional economy and employment by providing a stable supply of quality vessels tailored to ship owner's varied needs. Japan possesses a clustered integration of maritime industries in which the marine transport business, shipbuilding business and ship machinery business are closely linked to one another.

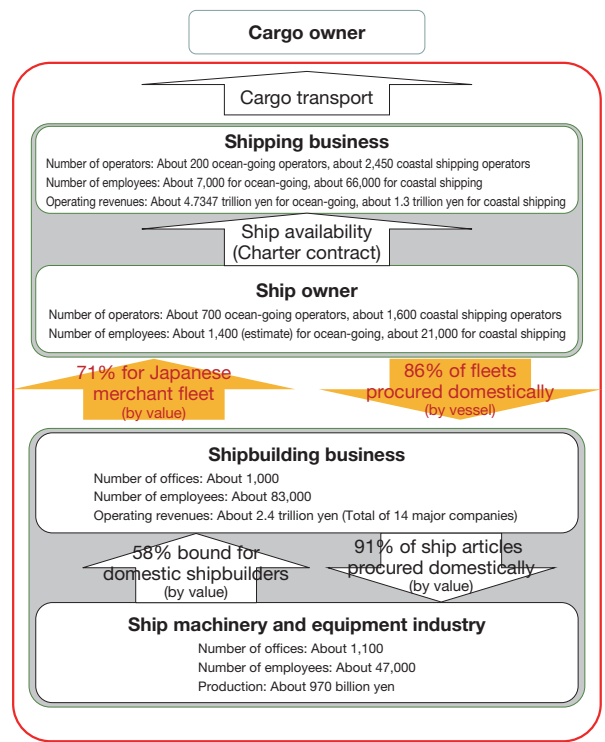


**Note** A system that resolves the owned tonnage adjustment program based on a scrap and build principle and that grants a certain amount of subsidy to those who have dismantled and removed their ships and that demands the shipbuilders to pay fees.

Following the increases in the volume of marine transportation reflecting a buoyant global market, China and Korea stepped up their shipbuilding capacities rapidly, pushing the world's amount of new shipbuilding for 2015 to 68,730,000 gross tons (against 13,020,000 gross tons for Japan, commanding 18.9% of the global market). Japan's order volume has turned upward on the support of corrections of the yen appreciation since the end of 2012, but stiff global competition continues, keeping tonnage values low.

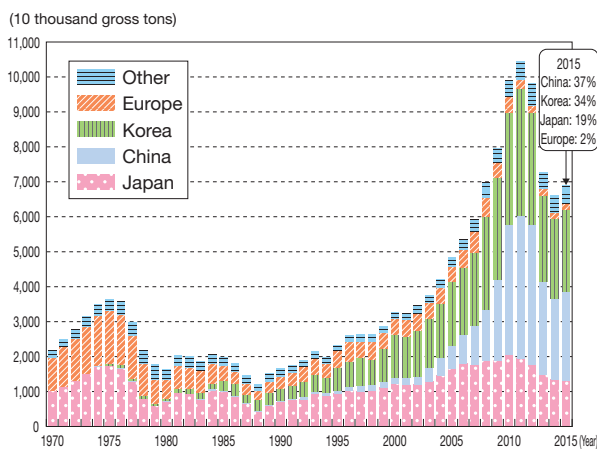
The production of ship machinery products (except for outboard motors) for 2014 was valued at 800.5 billion yen (up about 12.4% from its year earlier level), with an export amount of 220.6 billion yen (down about 7.8% from its year earlier level). This is the first increase in six years due to a rise in orders for new shipbuilding; however, the climate surrounding the ship machinery and equipment industry remains severe due to stiffening international competition, increasingly aging workforce and other factors.

Figure II-6-3-10 Japan's maritime industry cluster



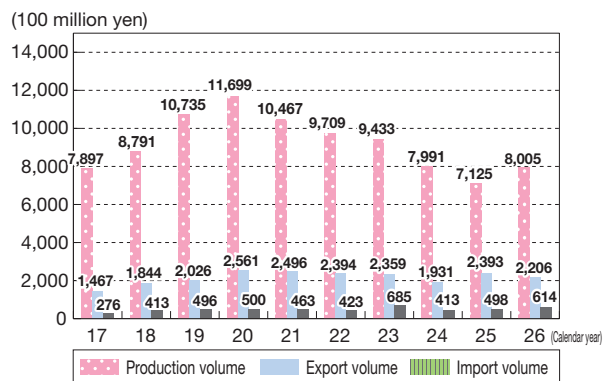
Source) MLIT

Figure II-6-3-11 Developments in the Volume of Newly Built Ships in the World



Source) Prepared by MLIT from IHS (former Lloyd's Register of Shipping)

Figure II-6-3-12 Developments in Japan's Production, Export and Import of Marine Industrial Products



(Note) Import volumes represent imports by shipbuilders. Excluding outboard engines and spark-ignited engines. Source) MLIT

(ii) Approaches to consolidating the international competitiveness of the shipbuilding industry

To consolidate the international competitiveness of Japan's shipbuilding industry and allow Japan to stay a first-class shipbuilding nation, the implementation of a policy package focusing on boosting Japan's order-taking capacities and deployment into new markets and new segments of business, and assurance and cultivation of human resources, have been propelled.

Starting from FY 2013, support has been extended to shipbuilders, shipping operators and the like in their efforts to develop next-generation marine environment technologies that help enhance fuel efficiencies for their vessels with a view to reinforce Japan's order-taking capacities. The Ministry is committed to realizing a desirable framework of international collaboration under cooperation between the public and private sectors and exploring, and promoting the diffusion of, energy-saving technologies for ships and so on.

Also, efforts on the establishment of marine transportation systems for North American shale gas and other new energy

transportation routes are promoted. As for the availability of human resources in the shipbuilding industry, the utilization of foreign human resources ready for work has been pursued as an emergency and temporary response (scheduled for expiry in FY 2020) while adhering to the key principle of seeking human resources from within Japan. For domestic human resources, specific measures are being implemented with industry-academia-government collaboration, which include promotion of internships for high school teachers and students to deepen their understanding on appeals of shipbuilding.

In addition to building on efforts made up until now, we will take various measures in a comprehensive manner to drive forward production reforms that increase product/service capabilities, ability to develop new business areas and shipbuilding capability/talent through innovations in the maritime industry by utilizing rapidly advancing information technologies, thereby contributing to stronger economy and regional revitalization.

#### (4) Ocean industries

The marine resources development, represented by subsea oil and natural gas production, is an area where medium- to long-term growth is expected. Since many types of ships are used in this area, it is hoped that the Japanese maritime industry expands into this area, leveraging technologies and experience accumulated, and taps global growth for the economic growth of Japan. To this end, we are promoting efforts toward establishment of consortiums for training engineers in this area through industry-academia-government collaboration, in addition to supporting technological development relating to marine resources development, in order to enhance international competitiveness of Japan's ocean industries.

## 4 Trends in air transport business and measures

In regards to circumstances surrounding the aviation industry, demand was robust overall due to, among other factors, a moderate recovery in domestic and overseas economies, cheaper oil prices and a rise in the number of inbound foreign visitors. According to Japan's air transport results, the number of domestic air passengers, which had moved downward after peaking in FY 2006, turned for an increase from FY 2012 on, with impetus from demand for restoration from the Great East Japan Earthquake, increased demand encouraged by the entry of LCCs and so on, reaching 95.19 million in FY 2014 (up 2.9% from a year earlier level).

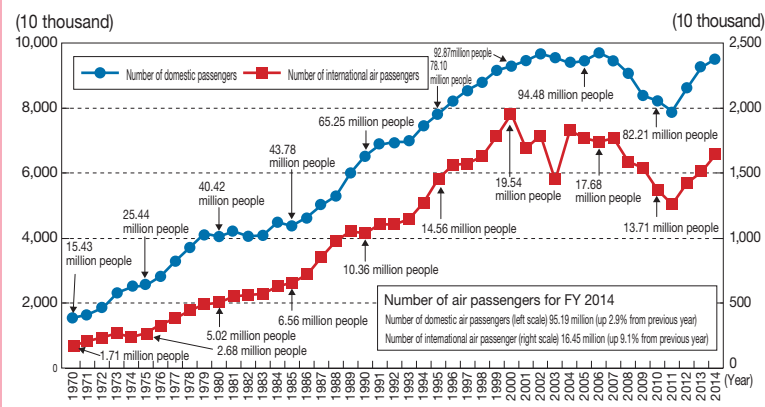
The number of international passengers also turned for the increase from FY 2012, reaching 16.45 million (up 9.1% from a year earlier level), same as the domestic passengers.

Since March 2012, LCCs entered the Japanese market one after another with four LCCs operating as of March 2016. LCCs have been expanding their business activities with Peach Aviation operating 13 domestic routes and nine international routes; JetStar Japan, 17 domestic routes and five international routes; Vanilla Air, three domestic routes and three international routes and Spring Airlines, two domestic routes and two international routes.

In the meantime, Skymark Airlines filed for the commencement rehabilitation proceedings under the Civil Rehabilitation Law on January 28, 2015. Court-led proceedings are now underway.

Figure II-6-3-13

Developments in the number of air passengers (Japan-based airlines)



Source) Prepared by MLIT from the "Air Transportation Statistical Year Book"

## 5 Trends in the Consigned Freight Forwarding Business and Measures

The consigned freight forwarding business <sup>Note</sup> is combined with multiple means of transport to provide services specific to varied user needs. Recent years have witnessed growing entry into the aircraft- and ship-based segments of international shipment to reflect the cargo owners' needs for globalization.

Further, as international trade takes on an increasingly important tone, global shipment gets more streamlined than before, urging safety assurance during transportation. The MLIT works to ensure the availability of safe and secure logistics services, as by conducting audits, etc. to consolidate thorough operator code compliance.

## 6 Trends in the warehousing business and measures

Commercial warehouses play a significant role as nodal points of physical distribution. There are 6,030 warehouse operators (4,849 ordinary warehouse operators, 1,181 refrigerated warehouse operators) as of the end of FY 2014. In recent years, the construction of large, intelligent physical distribution facilities by foreign or domestic real estate entities or funds has been activated, giving birth to warehouse operators who rent such facilities to develop their businesses.

The introduction of equipment that makes for a lower-carbon implementation is underway, as well as the introduction of emergency power supplies and telecommunications equipment that help build a disaster-tolerant warehouse.

## 7 Trends in the truck terminal business and measures

The truck terminal business plays a significant role in streamlining the flow of transport, mitigating congestion and so on as a nodal point of trucking between a trunk line and a terminal. In recent years, the construction of facilities that provide the functionality of a distribution center (sorting, processing for distribution and so on), as well as loading and unloading, is in progress to meet the sophisticated and diversified needs for logistics.

The introduction of equipment that makes for a lower-carbon implementation is underway, as well as the introduction of emergency power supplies and telecommunications equipment that help build a disaster-tolerant truck terminal.

## 8 Trends in the real estate business and measures

### (1) Real estate business trends

The real estate business is one of the key industries that command 2.6% of the total sales of all industries and 11.1% of the total number of corporations (FY 2014).

According to the 2016 official land prices (as of January 1, 2016), the national average of residential land prices fell but the rate of decline was smaller, while commercial land prices, which were flat last year, took an upward turn. The average for the 3 major metropolitan areas continued the rising trend for both residential properties and commercial properties. On the other hand, land prices in rural areas continued the downward trend for both residential and commercial land, though the rate of decline was smaller. The number of new housing starts, after exceeding 890,000 in FY 2012, topped 980,000 in FY 2013 but sagged to 880,000 in FY 2014 upon loss from rebounding from the last-minute demand stirred by a hike in the consumption tax rate.

**Note** A business that transports cargoes by the means of transport (motor trucks, railways, aircrafts, ships) owned by real carriers (who undertake transportation by themselves) in a fully integrated, complex flow of door-to-door transportation, from picking up cargoes to delivering them.



In the existing housing distribution market, the number of successful deals was 173,000 in FY 2015 (up 9.5% from the previous fiscal year) according to the Real Estate Information Network System (REINS) <sup>Note 1</sup>.

## (2) Status of the real estate industry

The Ministry endeavors to ensure precise administration of the Real Estate Brokerage Act to protect consumer interest involved in housing land and building deals and to expedite distribution. The number of real estate dealers was 122,685 at the end of FY 2014.

The MLIT, along with prefectural and municipal governments, endeavor to prevent complaints and disputes by working in conjunction with the bodies concerned while imposing severe supervisory dispositions on those entities that have breached the law. In FY 2014, 249 supervisory dispositions were imposed (including 141 revocations of licenses, 74 suspensions of business and 34 orders).

To combat the problems of malicious soliciting at the time of condominium sale, the Ministry will continue to alert consumers through its Website or other means and work together with the agencies concerned to provide relevant supervision and guidance to define the acts that are prohibited in soliciting in connection with real estate brokerage.

To ensure proper management of growing stocks of condominium, a system of registration for condominium management services entities and service regulations have been enforced to ensure their proper management in accordance with the Act on Advancement of Proper Condominium Management. As of the end of FY 2014, the number of condominium management service entities was 2,214. From a viewpoint of promoting the code compliance of condominium management services entities, on-the-spot inspections have been conducted.

Since December 2011, a “system of rental housing management entity registration” that places a certain set of rules on the fulfillment of rental housing management services has been put into effect to foster and develop a good-quality rental housing business. As of the end of FY 2014, the number of registered rental housing management entities was 3,538.

## (3) Conditioning the environment for market reactivation

### (i) Status quo of the real estate market

Japan’s real estate had a total asset value of about 2,400 trillion yen as of the end of FY 2014 <sup>Note 2</sup>.

The book value of the real estate or the trust beneficiary interest in real estate that were acquired by J-REITs (real estate investment corporation), real estate specified joint enterprises, special-purpose companies and so on as objects of securitization during FY 2015 stood at about 5.4 trillion yen.

J-REITs play a central role in the real-estate investment market. As many as five brands were newly listed in just one year in FY 2015. As of the end of March 2016, 53 brands were listed on the Tokyo Stock Exchange. Total book value of assets under management of J-REITs amounts to 14 trillion yen and the market value of the real-estate investment securities adds up to about 12 trillion yen.

The Tokyo Stock Exchange REIT Index, which indicates price movements of the overall J-REIT market, increased 1.7% over the fiscal year because positive factors, such as improved conditions for the real estate market, an increase in inbound consumptions due to the rising number of inbound foreign visitors and the introduction of negative interest rates by the Bank of Japan, were partially offset by concerns about possible declines in demand due to successive public offerings and a plunge in the Chinese stock market.

The amount of yearly property acquisition in J-REITs stood at about 1.6 trillion yen for 2015.

**Note 1** Real estate brokers have property information loaded on REINS for them to exchange. As property deals are concluded successfully, the relevant information, including the transaction prices, is stacked on REINS.

**Note 2** A sum total of the values of the buildings, structures and land calculated on the basis of National Accounts.

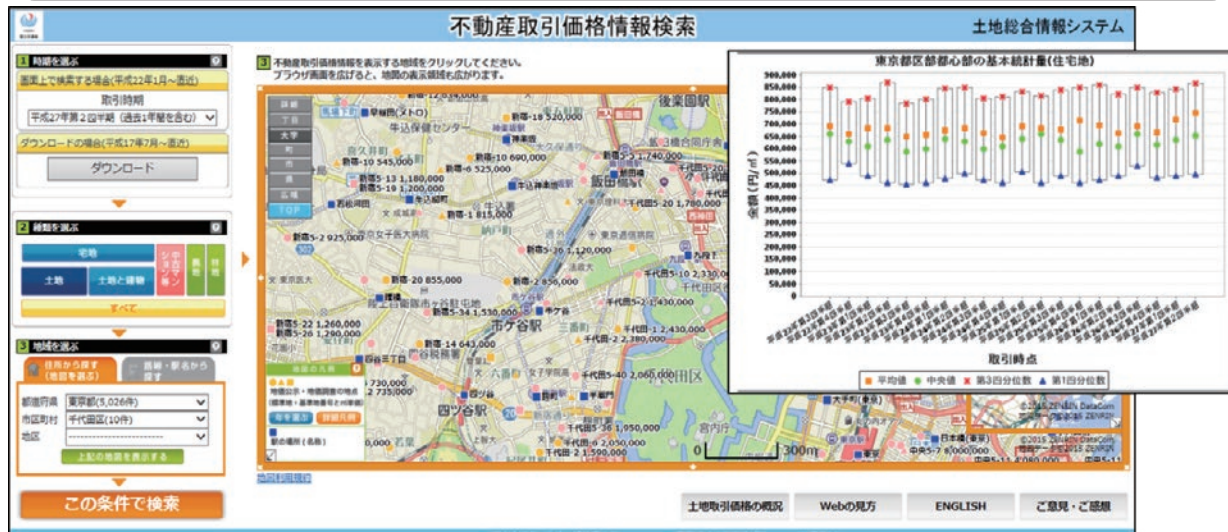
(ii) Conditioning the environment for real-estate information

The MLIT surveys real estate transaction prices, etc. nationwide in a bid to make the real estate market more transparent, streamline, and reactivate deals. Information thus collected from such surveys, including locations, areas and prices of real properties traded, is uploaded at a Website on the Internet (Land General Information System <sup>Note 1</sup>) with due care taken to prevent identification of the individual properties (as of March 2016, the number of transactions published was 2,650,557 and the number of visits to the website was about 620 million). In order to improve convenience of users, in April 2016, downloading multiple years' information on real estate transaction prices in bulk was made possible and information provision services through API <sup>Note 2</sup> started.

As a lesson learned from the subprime crisis, the MLIT publishes property price index (residential) in accordance with the guidelines prepared by international institutions for providing early warning signals for real estate bubble, and started pilot operation for property price index (commercial) in March 2016.

Figure II-6-3-14 Land General Information System

- Since April 2006, transaction price information based on questionnaires conducted among parties to real-estate deals has been posted every quarter at a MLIT website with care to protect the properties in question from being identified easily.
- As of March 2016, information on 2,650,557 properties was posted, attracting a total of about 620 million Web accesses.



土地総合情報システム Land General Information System

平成25年第3四半期～平成27年第2四半期の東京都千代田区の土地取引件数 1,409 件

検索条件: [種類] 土地 [地域] 東京都千代田区 [取引時期] 平成25年第3四半期～平成27年第2四半期

検索結果: 35件中 1件目 ~ 20件目を表示中(1/2ページ目)

| 詳細表示 | 所在地     | 地域  | 名称      | 用途 | 取引時期      | 坪単価     | 面積       | ㎡単価   | 形状  | 専有目的  | 幅員 | 経緯 | 方位  | 建築計画 | 建築年  | 用途         | 取引時期 |
|------|---------|-----|---------|----|-----------|---------|----------|-------|-----|-------|----|----|-----|------|------|------------|------|
| 1    | 千代田区一橋町 | 住宅地 | 平野門     | 3階 | 460,000万円 | 650万円   | 2,000㎡以上 | 200万円 | 1階建 | 8.0m  | 区道 | 北東 | 2階建 | 60%  | 400% | H25/10-12月 |      |
| 2    | 千代田区船橋  | 商業地 | 船橋      | 4階 | 5,400万円   | 320万円   | 40㎡      | 97万円  | 1階建 | 6.0m  | 区道 | 北東 | 商業  | 80%  | 600% | H26/01-03月 |      |
| 3    | 千代田区内神田 | 商業地 | 小川町(東側) | 5階 | 11,000万円  | 530万円   | 70㎡      | 160万円 | 1階建 | 6.0m  | 区道 | 北  | 商業  | 80%  | 600% | H26/10-12月 |      |
| 4    | 千代田区船橋  | 商業地 | 神田(東側)  | 4階 | 11,000万円  | 540万円   | 70㎡      | 160万円 | 1階建 | 4.0m  | 区道 | 北西 | 商業  | 80%  | 600% | H26/04-06月 |      |
| 5    | 千代田区船橋  | 商業地 | 神田(東側)  | 2階 | 90,000万円  | 1,000万円 | 300㎡     | 300万円 | 1階建 | 10.0m | 区道 | 南東 | 商業  | 80%  | 600% | H26/01-03月 |      |
| 6    | 千代田区船橋  | 商業地 | 船橋      | 2階 | 31,000万円  | 1,100万円 | 90㎡      | 340万円 | 1階建 | 22.0m | 都道 | 南東 | 商業  | 80%  | 600% | H25/10-12月 |      |

Source) MLIT

(iii) Conditioning the existing home circulation market

The MLIT is working to condition the existing home trading environment to promote the circulation of existing homes, which have only a low share of the total volume of housing in circulation when compared with the U.S. and Europe. In FY 2015, the MLIT implemented test operation of a prototype system in an effort to establish a system for efficiently aggregating information relevant to real-estate transactions, such as transaction histories, transactions examples in the surrounding districts, potential disaster risks and statutory restrictions, and examined how real estate brokers should

**Note 1** <http://www.land.mlit.go.jp/webland/>

**Note 2** API (Application Programming Interface): API enables use of functions of certain computer programs (software) or managed data by invoking other external programs.

provide relevant information by partnering with other business operators specialized in areas related to real estate transactions. Also, the MLIT revised the “price appraisal manual” used by real estate brokers for disseminating and embedding the approaches of the “Guidelines for Improving Building Assessments Relevant to Existing Homes” formulated in FY 2013, and put together points that should be noted by real-estate appraisers in conducting appraisal of existing detached houses.

#### (4) Building a real-estate market tailored to new ages

The MLIT is striving to disseminate the revised real-estate appraisal standards, etc. (effective November 1, 2014), which reflects the diversified needs for real estate appraisals, such as those emerging from a globalized real-estate market, a progressing stock society and development of a real-estate securitization market.

On-site inspections of real-estate appraisers and appraisal monitoring surveys concerned mainly with facts about securitized real-estate appraisals have been conducted to enhance appraisal reliability.

Previously, properties acquired by REITs were mainly offices and residences. In recent years, however, types of properties acquired are expanding to hotels, logistics facilities, healthcare facilities and the like. Amid diversification of properties targeted by REITs, we published the guidelines for REITs that target real estate properties of hospitals in June 2015 and held seminars for business operators engaged in healthcare related businesses.

Also, in order to promote private-sector funding in updating urban functions such as earthquake resistance for buildings, we implemented model projects so that real estate regeneration projects utilizing the framework of the Amended Real Estate Specified Joint Enterprise Act (enforced on December 20, 2013) will be carried out, while working to spread real estate securitization in local districts by sending experts to real estate securitization projects taking place in regional cities.

In promoting the formation of earthquake resistant/green buildings, we decided to investment in environmental renovation projects for two buildings in FY 2015.

The MLIT held a meeting of the “Committee for the utilization of Public Real Estate (PRE) Using Real Estate Securitization and Other Techniques” and formulated guidelines for local public entities with the aim of promoting the utilization of PRE owned by local public entities and thus to achieve further expansion of the real estate investment market. The MLIT is determined to disseminate guidelines for local public entities and implement associated model projects.

The MLIT held the policy meeting on the real estate investment market, and put together recommendations on growth strategies for the real estate investment market concerning the growth target of doubling total assets of REIT, etc. to about 30 trillion yen by around 2020 and specific initiatives (March 2016).

## 9 Building a sustainable construction industry

### (1) Conditions surrounding the real estate business

The construction industry not only takes charge of the development, maintenance, management, etc. of local infrastructures but underpins local economies and employment, keeping local communities safe and secure on the front line in support of the national life and social economy.

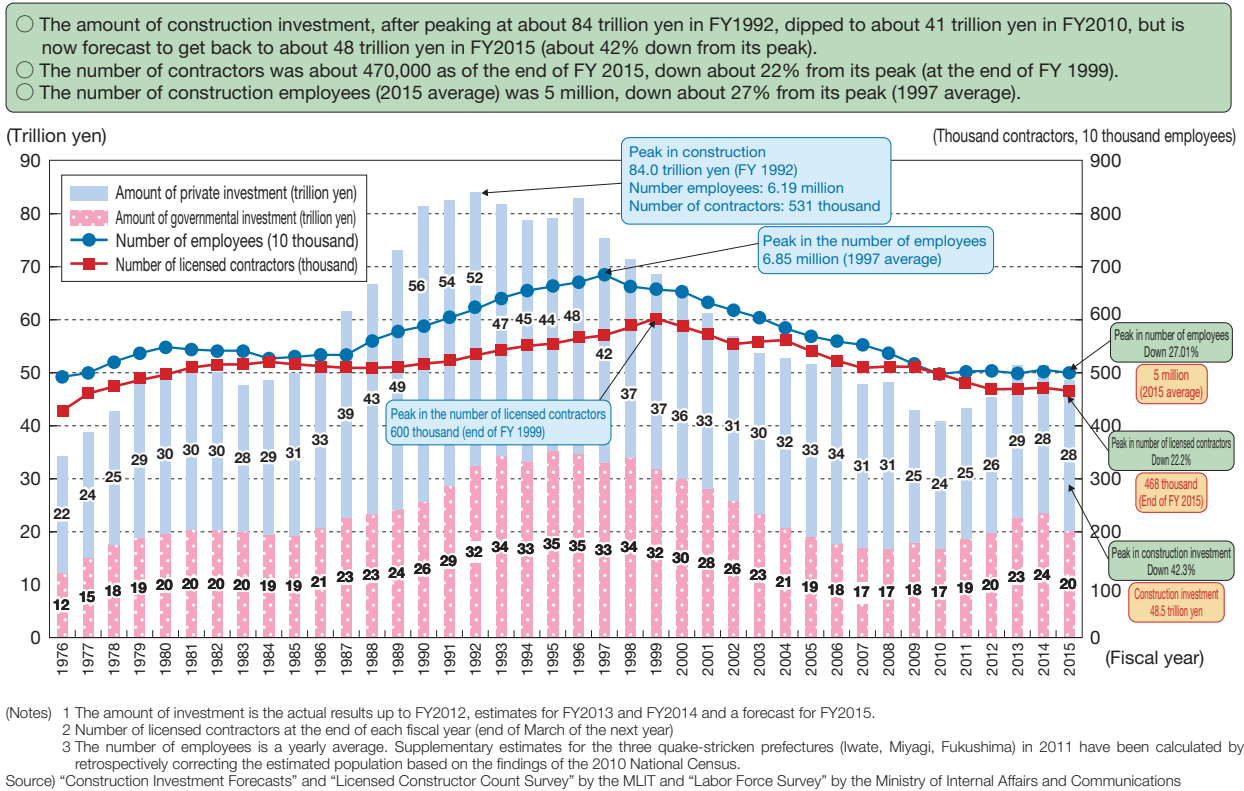
On the other hand, in association with a sharp decline in construction investment, the business environment surrounding construction companies has deteriorated and structural issues such as a decrease in the number of young people joining the industry and aging workforce.

In order for the construction industry to address these issues while fulfilling its roles in disaster prevention/mitigation, countermeasures against aging infrastructures, maintenance and earthquake resistance measures, it is crucial to make the industry sustainable over the medium to long term.

Figure II-6-3-15 shows the trends in construction investment and the number of licensed contractors and employees.

Figure II-6-3-15

## Changes in Construction Investment, Number of Licensed Contractors and Number of Employees in the Construction Industry



## (2) Securing and fostering human resources to work for the construction industry

The construction industry builds on a large number of human resources. While the number of employees in the construction industry shows signs of pickup in recent years, it would be important for the MLIT to direct its continued efforts at securing and fostering industry leaders, including young workers, to enable the construction industry to continue playing its role as a community supporter in the background of falling birthrates with aging populations.

To this end, the MLIT is working to refurbish the environment that makes construction builder confident about their future prospects, including a continued, stable supply of public works funding, in addition to improving the labor conditions drastically, such as maintaining appropriate wage levels and encouraging their subscription to social insurance and other security programs. The MLIT revised the eligibility for technical certification tests to facilitate early use of young workers, and is keen to enhance education and training in the industry to facilitate smooth transfer of skills from generation to generation. Moreover, the MLIT aims to double the number of female technicians/skilled workers in five years in order to further increase women's engagement in the construction industry based on the action plan formulated in joint efforts of private and public sectors.

Moreover, the MLIT will be working to help boost productivity in the construction industry, such as by introducing i-Construction at construction sites and improving the heavily tiered subcontracting structure, in light of declines in working population in the future.

United public-private approaches will be driven to encourage more people to join in the construction industry and let them concentrate on their jobs with pride.

In addition, the project of receiving foreign construction workers is in place since April 1, 2015 as a time limited measure to handle increased construction demand due to one-off factors such as hosting of the 2020 Tokyo Olympic and Paralympic Games. Under this framework, 401 foreign construction workers entered Japan (as of March 31, 2016).



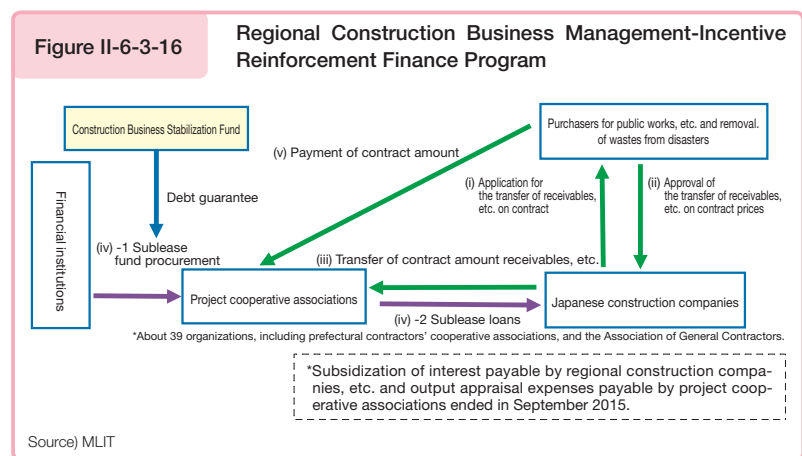
### (3) Establishing a framework of fair competition

As the construction industry takes charge of the jobs of keeping local communities safe and secure, as through the development, maintenance, management, etc. of local infrastructures, it needs to establish a framework of fair competition among contractors, including thorough legal compliance, to enable those of them who are superior in their technical strength, construction capability and management power to keep up with their growth. To this end, the Ministry has been working to normalize the practice of deals between prime contractors and subcontractors in the construction business by conducting subcontracting transaction status surveys, on-the-spot surveys, etc., opening a desk for consultation services on troubles and other problems encountered in concluding construction work contracts as “Construction Business Transaction Normalization Center” and the Construction Business Normalization Promotion Month.

### (4) Measures aimed at supporting construction companies

#### (i) Regional construction business management-incentive finance program

The regional construction business management-incentive finance program allows prime contractors to acquire loans from money lending business operators (e.g., cooperative association) on security of the public works contract price credit obligations, according to the completed amount of works. Its purpose is to smooth their cash flow. This program aims to secure loan funding and reduce the borrowing rate and other costs by providing debt guarantee to sublease loans, which the money-lending operator borrows from financial institutions when extending loans.

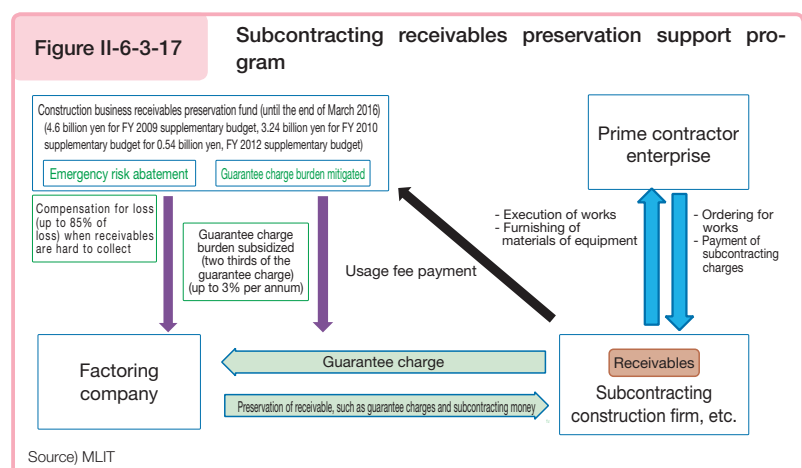


Effective since November 2008, this program will be carried forward through FY 2016 and onwards.

#### (ii) Subcontracting receivables preservation support program

The subcontracting receivables preservation project aims to prevent chain-reaction bankruptcies of subcontractors in association with failure of their primary contractor by reducing the burden of guarantee charge when the payment of such receivables is guaranteed by a factoring company<sup>Note</sup> and by indemnifying the factoring company for part of losses, it may suffer upon fulfillment of the guaranteed obligations.

This program has been implemented since March 2010 and will be carried on through FY 2016.



**Note** A financial enterprise that collects receivables owned by others by guaranteeing or purchasing them. At present, 10 factoring companies, including bank subsidiaries, prepayment guarantee companies and leasing companies, run this service.



**(iii) Regional construction industry revitalization support project**

In the regional construction industry revitalization support project, regional revitalization support advisers, including human resources development experts and small and medium enterprise management consultants, provide wide-ranging advice that help resolve management tasks or technical tasks, such as execution management tasks, to smaller or middle-ranking construction companies and construction-related businesses (such as surveying, construction consulting and geological surveying) as they work to develop, and maintain and manage social infrastructures and to get prepared for, and reduce the impact of, disasters in support of communities. In addition, for exemplary initiatives where multiple companies or other organizations collaborate and contribute to securing and fostering of industry bearers and higher productivity, we provided continued support by a team of experts until set goals such as plan development are achieved (consulting support) and subsidizing part of expenses in the phase of implementing the plan (step up support) as priority support projects. In FY 2015, we provided consulting support in 22 cases and step up support in 17 cases.

This program has been implemented since 2015 and will be carried on through FY 2016.

**(5) Promoting construction-related businesses**

Information about the total number of operators registered in the construction-related businesses (such as surveying, construction consulting and geological surveying) for each month is published at the end of the next month and analyses of the financial conditions by sector based on that information are released at the end of the next fiscal year. In addition, the MLIT works to encourage sound growth of the construction-related industries and make effective use of the registration system, as by holding explanatory sessions for students before attending school in collaboration with the associated bodies.

**(6) Present status of construction machinery and growth of construction production technologies**

Present status of construction machinery and growth of construction production technologies Pursuant to the second-phase “Computer-Aided Construction Promotion Strategies” (formulated in March 2013), to encourage and diffuse the practice of computer-aided construction, the MLIT seeks to promote proactive use of total station making for simplifying the work flow of piecework management by converting survey results to data automatically for example, and machine control/machine guidance technologies realizing high-precision and efficient construction under automated control.

**(7) Settling disputes arising from the execution of construction works**

To promptly resolve disputes arising from the execution of construction work contracts, the Construction Works Dispute Review Panel implements dispute settlement procedures. In FY 2014, the Panel received 40 applications (six of arbitration, 27 for conciliation and seven for mediation) at the central level and 86 applications (21 for arbitration, 56 for conciliation and nine for mediation) at the prefectural level.