

Analysis of Cruise Ship Calls in Japan

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Abstract: Recent years have seen an increase in cruise ship calls globally, and to Japan. This has led to an increase in foreign visitors. In 2015, approximately 1 million foreigners entered Japan by cruise ships. The target is 5 million visitors by cruise ships by 2020. The impact of cruise passengers on tourism in Japan is undeniable. Therefore, understanding the “cruise market” in Japan is necessary and this study attempts to do so. We analyzed the number of calls to 28 ports in 2016, and using the “Statistics of Immigration,” calculated the Herfindahl-Hirschman index to observe if entrants and departures concentrate in some ports.

Keywords: cruise ship, port, call at ports, cruise passenger

1. INTRODUCTION

Cruise ships are known as “Moving Hotels.” They provide delicious meals and entertainment and passengers can enjoy sightseeing at the ports of call. In addition, cruise ships provide hospitality and many unique experiences, resulting in increase in demand of this mode of travel around the world.

Cruise ships have three classes: casual class, premium class, and the luxury class, which essentially divides the ship into a casual, premium, and luxury vessel. Cruise ship calls to Japanese ports, like other ports around the world, have increased in recent years.

In 2015, foreign ships called 965 times at Japanese ports, and foreign ships and Japanese ships together called 1,452 times, which results in an increase in foreign visitors. Furthermore, MLIT set the target that 5 million foreigners will visit by cruise ships for 2020.

Figure 1 shows the transition in international and domestic cruises from 1989 to 2015 in Japan. The blue bar indicates international cruises and the orange bar indicates domestic cruise stops at Japanese ports. International and domestic cruises have increased; especially, the demand for international cruise has shown rapid increase.

The impact of cruise passengers on Japanese tourism is undeniable, which indicates that the promotion of cruise tourism is important. This requires understanding the cruise market in Japan. Furthermore, it is necessary to examine the characteristics of the ports of call and strengthen the maintenance of ports where calls volumes are high. This study attempts to examine and understand the cruise market in Japan.

(thousand passengers)

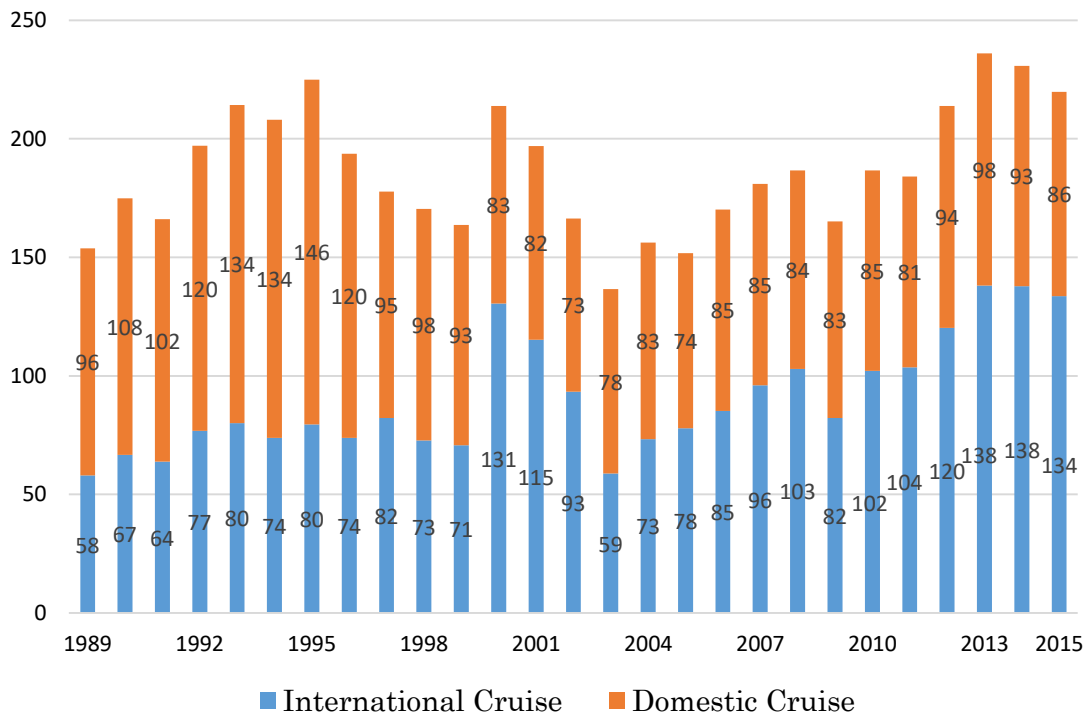


Figure 1 Transition of Cruise Demand in Japan

2. PREVIOUS STUDIES

The following are some studies on the tourism behavior of cruise passengers.

Ikeda (2002) proposed a new method to predict the travel demand of cruise ships as demand for tours, tour characteristics, and expense factors such as time, seasickness, and popularity.

Fujiu (2012) analyzed the ports of call of cruise ships in Japan using survey data on shipbuilding trends, trends in domestic cruise demand, and ports of call for international cruise ships.

Kozima (N.D.) studied the present condition of cruise tourism in Okinawa its and future perspective. This report examines the new harbor maintenance policy for cruise tourism promotion and necessary conditions.

Taguchi (2011) analyzed the economic ripple effect and its characteristics for fixed-period cruise ships. This study shows that fixed-point cruise ships can achieve great economic ripple effects.

Funck (2016) proposed the establishment of a geographical framework to assess the benefits and problems of the expanding cruise market in Japan.

Several studies examine the demand side or the passenger side of cruise tourism; however, few studies examine the supply side, such as government and shipping companies. Because cruise ships are called by promotion of government to cruise company, we perceive government as the supplier of cruise tourism in this study.

3. DATA

This study uses three types of statistics to analyze the Japanese cruise market. “Number of calls to each port by type of cruise ships,” “Number of cruise passengers and calls to Japan,” and “Statistics of Immigration.”

The “Number of calls to each port by type of cruise ships,” issued by local governments, lists the number of calls to each port. This data enables the analysis of the number of calls per class, for casual, premium, and luxury ships.

The “Number of cruise passengers and calls to Japan,” issued by the Ministry of Land, Infrastructure and Transport, lists the number of domestic/foreign cruise passengers and calls to Japan.

The “Statistics of Immigration,” issued by the Ministry of Justice, lists the number of Japanese, non-Japanese, and those with agreements that departed/arrived at Japanese each port. The Statistics of Immigration does not provide the number of agreements that departed/arrived at Japan by cruise ships. However, we use the data in this study to analyze the degree of oligopoly of Japanese ports.

4. CURRENT CONDITION OF CRUISING IN JAPAN

4.1 Share by Class of Cruise Ships Calling at Japanese ports

The dates for the number of calls to each port by type of cruise ships help in analyzing the shares as per the class of cruise ships calling in Japan. This data reveals the number of calls by ship names and the class of ships.

The total ports surveyed were 28, in which the number of total calls is high for the three years from 2013 to 2015. We analyze the number of calls to 28 ports in 2016. Table 1 shows the number of calls of foreign ships in each class in the order of the calls.

In general, the class of a cruise ship depends on the tonnage per passenger and the number of crew members per passenger. In this study, we analyzed based on the cruise ship class that is printed in “Cruise Ship Collection” published by Maritime Press. And we classified the cruise ship class that is not printed in “Cruise Ship Collection” as “Others”.

Figure 2 shows that a map of Japanese port that cruise ships including Japanese ships called in 2016.

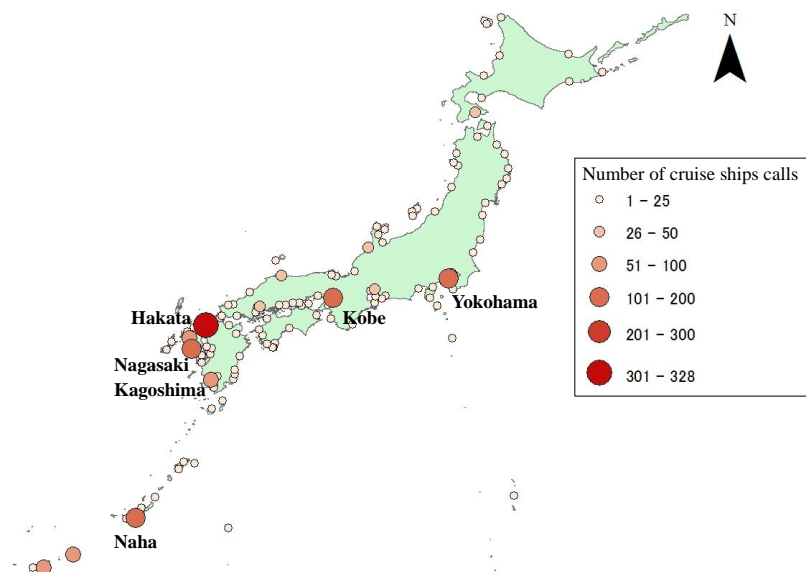


Figure 2 Map of Japanese port that cruise ships called in 2016

Table 1 Number of cruise ships calling as per class in 2016

	Casual	Premium	Luxury	Others	Total
Hakata	239	19	2	64	324
Naha	157	39	3	0	199
Nagasaki	97	51	2	36	186
Ishigaki	78	25	1	0	104
Kagoshima	41	20	2	17	80
Sasebo	16	0	0	43	59
Hiroshima	12	24	6	1	43
Yokohama	17	22	1	1	41
Kobe	15	13	3	1	32
Sakai	13	15	1	1	30
Kanazawa	11	11	1	0	23
Osaka	4	13	4	1	22
Kouchi	11	8	0	0	19
Hakodate	3	12	3	0	18
Otaru	1	10	3	0	14
Aomori	1	10	3	0	14
Beppu	10	2	0	2	14
Maizuru	10	4	0	0	14
Uno	0	13	1	0	14
Shimizu	2	8	3	0	13
Tokyo	3	5	4	0	12
Shimonoseki	2	3	0	7	12
Kushiro	0	8	2	0	10
Nagoya	4	2	0	0	6
Muroran	2	3	0	0	5
Shingu	0	2	0	0	2
Akita	0	1	0	0	1
Kutsugata	0	0	0	0	0
Total	749	343	45	174	1311

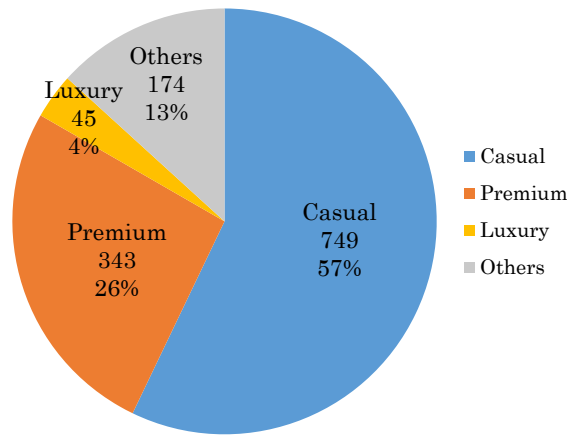


Figure 3 Share by class of cruise ships

Figure 3 shows the share by class of cruise ships calling on Japanese ports. Approximately 60% of foreign cruise ships are casual ships. Moreover, approximately 30% are premium ships and 4% are luxury ships. It is evident that many casual ships have called at ports.

4.2 Aged Deterioration of Port Call Record

The Ministry of Land, Infrastructure and Transport shows the number of Japanese and foreign ships calling at ports every year. Using these dates, we analyze the number of calls of cruise ships for ten years and show the result in figure 4.

The blue bar indicates the number of calls of Japanese cruise ships and the orange bar indicates the number of calls of foreign cruise ships. Figure 4 shows that the number of calls by both Japanese and foreign ships has increased. In particular, calls by foreign cruise ships have increased rapidly. In comparison to 2005, the total calls nearly doubled in 2015. The calls by foreign cruise ships increased nearly five times in 2015.

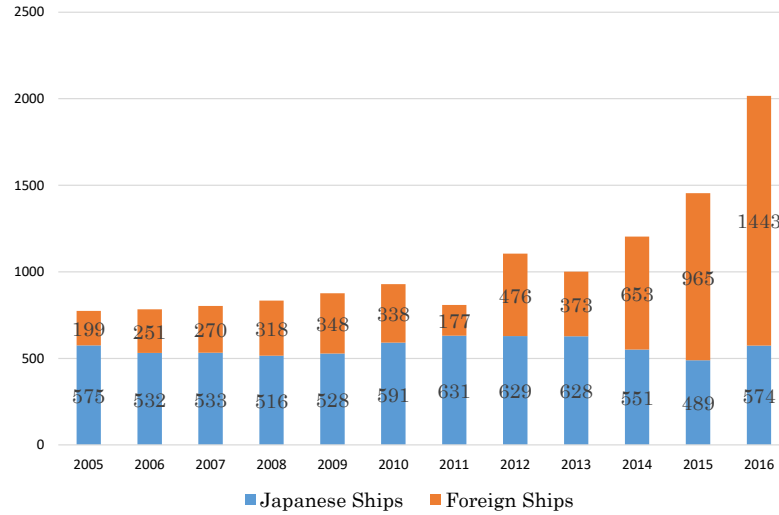


Figure 4 Calls of Japanese and foreign ships in Japan

4.3 Port oligopoly on visitors entering and departing

It is important to consider the sustainability of Japanese cruise market. It is considered that cruise market in Japan will flourish by dispersing cruise ship ports in Japan.

Using the “Statistics of Immigration,” we calculated the Herfindahl-Hirschman index (HHI) to observe if entrants and departures concentrate in some ports.

The Herfindahl-Hirschman index is calculated with the square sum of market share of all companies belonging to an industry. The value of HHI becomes 1 in monopoly and approaches 0 in competition.

This study takes market share as the entrant rate/departure rate for all ports in Japan. The entrant rate is the ratio of entrants at the chosen port to entrants at all ports, in Japan.

Formula 1 shows the calculation of the entrant rate/departure rate. Formula 2 shows the calculation of HHI.

$$C = \frac{NP}{NJP} \quad (1)$$

where

C: Entrant rate or departure rate in the port

NP: Number of entrant or departure in the port

NJP: Number of entrant or departure in Japanese ports

$$HHI = \sum_{i=1}^n C_i^2 \quad (2)$$

where

C_i : Entrant rate or departure rate of i th port

n : Number of ports in Japan

We indicate the degree of market concentration by the HHI as follows. If the value of the HHI is over 0.18, it is a highly concentrated market. If the value of the HHI is greater than, or equal to 0.1, and less than or equal to 0.18, it is a medium level central market. If the value of the HHI is less than 0.1, it is a non-concentration market.

Using “Statistics of Immigration,” we calculate and compare the value of the HHI for immigration from 2006 to 2014. Table 2 shows the calculation results. Figure 5 shows the value of the HHI for entrants and number of foreign cruise ships to Japan. Moreover, Figure 6 shows the value of the HHI on departures and the number of foreign cruise ships to Japan.

Table 2 The value of HHI for entrants and departures

	Entrant	Departure
2006	0.28	0.28
2007	0.24	0.24
2008	0.21	0.21
2009	0.17	0.18
2010	0.20	0.20
2011	0.21	0.20
2012	0.18	0.16
2013	0.18	0.18
2014	0.17	0.14

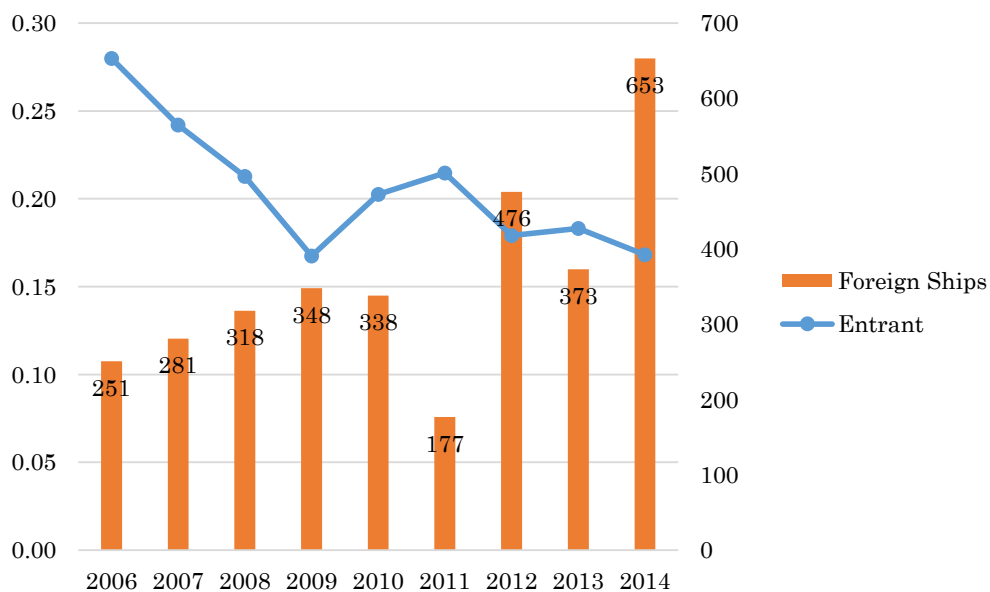


Figure 5 Value of the HHI for entrants

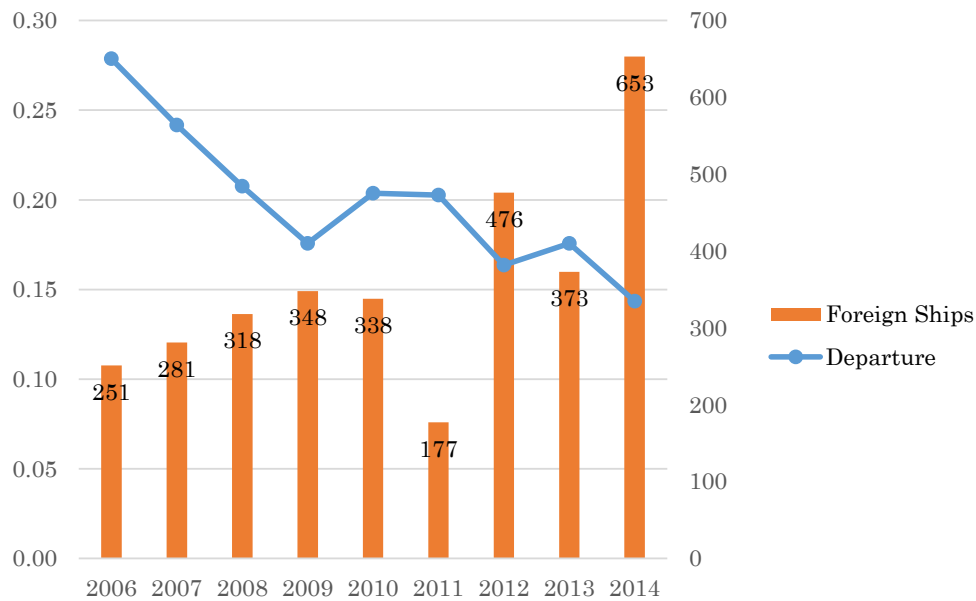


Figure 6 Value of the HHI for departures

In Figure 5 and Figure 6, although the value of the HHI in 2010 and 2011 has increased from the previous year, it tends to decrease as a whole. As the number of calls increases, the ports that foreigners enter or leave disperse. The number of calls declined after the Great East Japan Earthquake in 2011, and it is concentrated in some ports.

5. CONCLUSIONS

It is necessary to understand the Japanese cruise market to promote it successfully. In our attempt to do so we analyzed the Japanese cruise market using “Number of calls to each port by type of cruise ships,” “Number of cruise passengers and calls to Japan,” and “Statistics of Immigration.”

Today, approximately 60% of foreign cruise ships to Japan are casual ships and few luxury vessels call anymore.

It became clear by the data of MLIT that the number of calls to Hakata port, Naha port, and Nagasaki port is a lot of times. In the cruise market in Southeast Asia, because these ports are nearby, it is considered that the number of calls to these ports is high.

The result of the aged deterioration of port call records shows that calls by foreign cruise ships have increased rapidly and will continue to do so.

Using the HHI, we analyzed the oligopoly of Japanese ports. Although the value of the HHI in 2010 and 2011 increased from previous years, it tends to decrease as a whole. As calls increase, the port that foreigners enter or leave disperse. Cruise ships use several ports in Japan.

This study is only a basic analysis of the actual conditions in the Japanese cruise market. We do not conduct detailed analysis, such as departure place, route of cruise, characteristics of port of call, which requires further studies. We intend to conduct a hearing survey on port data, port records, and tourist resources at ports of call with port administrators.

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