How “Beyond” Rights Help Japan Benefit from Supply Chains and Greater Trade with Asia

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January, 2005

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Executive Summary

Japan plays an important role as Asia’s pre-eminent air cargo hub, with Narita Airport the world’s second largest airport handling international air cargo. Tokyo and Osaka airports are the primary transshipment points for cargo to and from the United States, Europe and Asia. Through these vital international connections, Japan’s airports bring significant value to its economy, and contribute to Japan’s position as a major exporter and provider of services to the global economy. Particularly important is Japan’s role in transshipment of air cargo between the burgeoning China market and North America.

Japan’s primacy in Asian air cargo transshipment faces a growing competitive challenge, however, from direct shipment of cargo from major Chinese airports at Hong Kong, Beijing and Shanghai, to the U.S. and Europe. China has fueled this challenge by expanding air cargo capacity at its major airports, enticing new air carrier operations by affording additional rights to operate “beyond” China to other Asian points, and expanding the presence of international logistics firms in the country.

The threat to Japan is exacerbated by the comparatively slow growth of Japan’s air cargo capacity, and by the relative difficulty of building efficient Japan-based air cargo networks in the absence of more extensive beyond rights, and greater beyond capacity. These and other factors indicate that by 2010, Japan could “lose” the opportunity to handle some $20-$40 billion in air cargo shipments from China – shipments that will instead travel directly from China to non-Asian markets.

The growing importance of swift supply chains for global business poses an added challenge to Japan’s cargo pre-eminence in the absence of more open cargo traffic rights. Efficient supply chain management demands a liberalized environment for air cargo services in which comprehensive networks can grow to serve major customers. While Japan continues to restrict beyond operations, competitors like Hong Kong’s Air Cargo Terminals are improving connectivity with manufacturing centers in the Pearl River Delta, and so increasing their attractiveness to potential exporters.

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To help maintain its competitive advantage, Japan can consider permitting U.S. and other all-cargo carriers to operate additional services “beyond” its airports, including the new airport at Nagoya, to China and to other key Asian markets. Such rights would enhance Japan’s international role and take full advantage of the new Nagoya facility that boasts a long runway, and the ability to efficiently handle air cargo traffic through improved support for deliveries and better logistics management.

Providing additional beyond rights from Nagoya’s new airport would significantly stimulate the development of that impressive new facility. ESI estimates that each new beyond right would generate about $2.4 billion worth of air cargo at the airport. Moreover, ESI estimates that the addition of six to twelve new beyond rights at Nagoya would generate an annual increase to Japan’s GDP of some $1.4 billion to $2.8 billion. Each new beyond right would also result in about $24 million in revenues for air cargo carriers, and an equivalent amount of new revenue for shippers and logistics firms based in Nagoya and elsewhere in Japan.

New beyond rights would also enable greater inter-carrier competition, lowering the cost of shipping goods through Japanese airports due to additional competition and stimulating a growth in air cargo traffic. With this competition, ESI estimates, landing fees at Narita might decline by as much as $850 per flight and the airport could handle as much as 300 kilotons of additional cargo. While it is not clear that the Government of Japan would favor these changes in cargo traffic at Narita, the alternative is to retain a high cost differential between Narita and the rest of Asia’s airports, resulting in an increasing shift of air cargo away from Japan.

In short, liberalizing air cargo beyond rights would enable Japan to broaden the catchment areas its airports serve, strengthen its air cargo position, enlarge the value of goods handled through Nagoya’s new airport, and address the growing “capacity” gap in handling shipments from China. It would also help bring new business to Japanese firms, and temper airport fees as a result of inter-airport competition.
Japan’s Role as Asia’s Air Cargo Hub to the World

Japan plays a major role in air cargo shipments internationally and Tokyo is the second largest center for international air cargo trans-shipments, measured by annual tonnage, as shown below.

Narita Airport’s World Ranking for International Air Cargo Traffic (2002)

<table>
<thead>
<tr>
<th>Airport</th>
<th>Cargo (Kilotonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong/Hong Kong International</td>
<td>2,479</td>
</tr>
<tr>
<td>Narita</td>
<td>1,942</td>
</tr>
<tr>
<td>Seoul/Incheon International</td>
<td>1,674</td>
</tr>
<tr>
<td>Singapore/Changi</td>
<td>1,638</td>
</tr>
<tr>
<td>Anchorage/Anchorage</td>
<td>1,483</td>
</tr>
<tr>
<td>Frankfurt/Main</td>
<td>1,457</td>
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<tr>
<td>Taipei/Chiang Kai Shek</td>
<td>1,369</td>
</tr>
<tr>
<td>Miami/Miami</td>
<td>1,248</td>
</tr>
<tr>
<td>Amsterdam/Schiphol</td>
<td>1,240</td>
</tr>
<tr>
<td>New York/John F. Kennedy</td>
<td>1,236</td>
</tr>
</tbody>
</table>

(Source: ICAO Airport Traffic 2002)

Figure 1.

Japan serves as an important connecting point for air cargo shipments from Asia to the rest of the world – with 30% of Japan’s air cargo exports going to the United States, and 23% to Europe. Conversely 33% of Japan’s air cargo imports come from the United States and 25% from Europe. Japan also serves as the key hub for cargo shipments throughout Asia. Japan exports 7% of its air cargo to Hong Kong and Korea, 5% to China, and 17% to Southeast Asia.

Japan is clearly the most important Asian transshipment point for air cargo going to the United States and Europe, with Tokyo transshipments accounting for more than a third of all air cargo shipments from Asia to North America, and Osaka accounting for an additional 13%. Conversely, 28% of all cargo shipments from

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2 Japan also imports 9% from China, 4% from Korea, and 1% Hong Kong. Southeast Asia accounts for 16% of Japan’s air cargo imports. While the total for imports from Hong Kong’s seems quite small, it is difficult to analyze the details behind this reporting. Thus, it could be inaccurate, possibly because more imports from Hong Kong are counted as imports from China.

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North America to Asia go directly to their destination, but nearly as many (23%) are transshipped through Tokyo.

Tokyo holds a similarly strong position for air cargo shipments from Asia to Europe (See Figure 2). Tokyo accounts for the transshipment of more than one-third (35%) of air cargo tonnage from Asia to Europe, Osaka accounts for 10% of these exports, Beijing accounts for 8% and Shanghai is the transshipment point for 5% of these exports. For European air cargo exports to Asia, some 24% and 13%, respectively, are transshipped through Tokyo and Osaka, while half is shipped directly.

![Transhipment Shares of Air Cargo to/from Europe by Airport](image)

Figure 2.3

Japan is also important as a hub for connections to other Asian countries. In 2003, Japan accounted for an estimated 530,000 tons of shipments that go between Japan and China, Hong Kong and Taiwan. Japan also accounted for 485,000 tons that are shipped between Japan and South Korea, and 180,000 tons shipped between Japan and Singapore.

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Japan’s central role in Asia’s air cargo industry generates important economic benefits. Located at the center of high-speed air cargo networks, Japanese businesses can avoid investments in inventory storage, shorten the time between sales and revenues, and improve productivity by using rapid air cargo connections to facilitate “leaner” operations. In particular, a comprehensive web of air cargo flights link Japan’s multinational corporations to the most important points of Japanese direct foreign investment, ensuring connectivity between Japanese-managed systems of production scattered throughout Asia.

ESI has estimated\(^4\) the benefits of Japan’s comprehensive air cargo connections to both the Japanese economy and Japanese companies. For Japan’s economy, air cargo probably contributes about 0.5 percent of GDP, or about $20 billion a year.\(^5\) For Japanese companies, ESI estimates that superior air cargo connections have enabled firms to save at least $1 billion annually using just-in-time delivery tied to air express deliveries. Without the extensive express next-day delivery services they currently enjoy, many Japanese firms would face higher production costs, and difficulties in supporting foreign investment.\(^6\)

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\(^5\) ESI estimated this contribution based upon the overall contribution of aviation to the UK economy of 1.4% of GDP in London Chamber of Commerce and Industry, “London Business: The Economic Benefits of Night Flights,” July 2004. http://www.euroexpress.org/EconomicImpactStudies/ES_EN_UKStudy.pdf In addition, if the value added in the air cargo express industry doubles from 2000 to 2011, it will add $1.5 billion more to Japan’s GDP than would have been the case without the rapid growth in express delivery’s value added.

\(^6\) As but one example, express delivery provides critical after-sales service support for Japan’s robust high-value electronics sector, avoiding costly maintenance of large inventories. Express delivery allows firms to dramatically reduce inventories, receive subcomponents “just-in-time” from their suppliers, and provide timely shipment of spare parts.

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Beyond Rights, and Japan’s Central Role in the Integrated Air Transportation Industry

Integrated express delivery companies – like DHL, Federal Express and United Parcel Service – offer a wide range of services and systems for multinational firms operating in global markets. They combine transportation and logistics services to support manufacturing and distribution, and abide by legal, regulatory and policy rules set by sovereign governments in the nations where they operate. Japan relies on these foreign-based firms to transport goods shipped between Japan and Asia and it must work with these firms to maintain its global market leadership as the key link between world markets and manufacturing centers in China and East Asia.

In this symbiotic relationship, affording broader access for these integrated carriers to the airports connecting East Asia with Japan enhances the amount of commerce between Japan and its neighbors. Conversely restricting these beyond rights to a very few carriers constrains the availability of competitive service for trade, especially to China. Adequate beyond rights for all carriers would enable a major increase in commerce between Japan and China and likely also between other nearby economies and Japan.

Supply Chains, Hub Networks and Maintaining Japan’s Leadership as Asia’s Air Cargo Center

Efficient supply chains reduce the ratio of inventory to sales, reduce total business inventories, and improve order-to-cash cycle times. According to Accenture, from 1995 to 2000, firms with the best-synchronized supply chains outperformed the stock market – due in part to superior efficiencies. Not surprisingly, Japanese companies and competing multinationals are establishing supply chains that depend on efficient shipments from throughout Asia. Indeed many supply chain shipments are coordinated through Japan, since the largest

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logistics firms have more extensive operations in Tokyo than in China, Taiwan and Korea.

Yet the demand for increasingly efficient supply chains has prompted major Asian airports outside Japan to reorganize and strengthen links to the catchment areas that support their air cargo exports. Hong Kong, for example, is improving links to factories and cities in the mainland’s Pearl River Delta region, with its SuperLink China Direct Service that enables shipments to go “in-bond” directly from aircraft through customs and to the factories where they are destined.9

**Additional Beyond Rights will Strengthen Nagoya Airport’s Role as an International Air Cargo Center**

The massive new airport at Nagoya, known as Central Japan International Airport (Centrair), provides an extraordinary opportunity for Japan to expand cargo “beyond” operations and create a major new Asian cargo hub that will benefit all of Japan. Centrair will initially handle 430,000 tons of cargo a year, rising to 530,000 tons in the future,10 and plans call for a to double the airport’s capacity in a few years.

Extending additional beyond rights to US and other carriers from Centrair would enable this new facility quickly to become a major international cargo center. With more extensive “beyond” connections, Centrair would offer a significant “hub” alternative to Incheon and Shanghai, and attract Japanese and multinational firms to create supply chains that “hub” around the new airport. The vast logistics and delivery support infrastructure already available in Japan enhances Centrair’s value as a major hub location, and would give Centrair a competitive advantage over other competing hubs in Korea and China.

Promoting international links at Centrair by enabling additional beyond services would have multiple positive effects on Japan’s economy. Japan-based firms could better manage Asian operations, encouraging firms with foreign investments in China and Korea to anchor in the Nagoya area. With improved connections from

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Nagoya, multinationals will more easily manage investments in China, and elsewhere in Asia, with rapid cargo connections to a network of airports.

Second, Centrair would become a superior facility for modern supply chain operations – operations needed to support the just-in-time production processes which many firms now operate in Japan, China, and other parts of Asia. Guaranteed, time-sensitive service is essential to support the supply chains that reduce production costs and facilitate management of widely-dispersed production facilities.

Third, an international cargo center at Centrair would enhance that facility’s attractiveness for foreign investment in Japan’s local industries, assuring better connections to sources of parts and components elsewhere in Asia. At least one air cargo industry survey suggests that foreign investors would be likely to relocate to locations outside of Japan if these connections were not available.11

Finally, express delivery international air cargo services benefit small and medium sized Japanese enterprises. As the focus of international air cargo operations, Centrair would attract commercial development because of efficiencies (e.g. reduced inventory costs and distribution costs) created by connections to express delivery services. The large economies of scale that express delivery services firms offer, and that small and medium sized enterprises are able to exploit, allow small businesses to bring their production costs closer to the costs of larger firms. This improves their competitiveness against larger rivals and generates new jobs for Japanese employees.

For Japanese multinationals, foreign investors in Japan, and small and medium-sized Japanese enterprises, efficient and competitive international air cargo services are essential. Firms producing high-value-added products that require costly components require such services to avoid the expense of carrying large inventories, raising their production costs. Moreover, the networks created by widespread air cargo services permit producers to enlarge the markets they serve, to include a wide

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array of Asian communities and new markets. The supply chains developing in Asia show that it’s dispersed and diverse markets depend on air cargo. The full development of the new Centrair would position Japan to exploit its advantage as a central location for the world’s leading logistics companies to maintain their supply chains, and as a global/Asian air cargo hub.

Japan’s own recent Korea and China aviation bilaterals reflect a clear recognition of Japan’s role as an air cargo hub, and more extensive Fifth Freedom opportunities would advance this important policy goal. China and Korea have themselves liberalized bilateral aviation relationships to facilitate the growth of air cargo networks that fan out into their countries. (Chinese carriers today serve three Korean cities, and can serve up to 15 Japanese cities by using access granted in bilaterals, while Korean carriers now serve 28 Chinese cities and 38 Japanese airports.) Japan can also extend its own internal air cargo networks by broadening beyond services with China and Korea.

**Challenges to the Future Role of Narita and other Japanese Airports**

There are also “defensive” reasons for Japan to take steps – including acceptance of greater “beyond” operations – to maintain its leadership as a global and Asian air cargo center. Specifically, Japan faces growing competition from China – and that country’s policies designed to make its huge economy a significant center for international air cargo. China’s targeted efforts include expanding air cargo

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12 ICAO has defined a number of freedoms of the air, the first five of which are recognized by international treaty. The Fifth Freedom is for scheduled international air services, the right “granted by one State to another State to put down and to take on, in the territory of the first State, traffic coming from or destined to a third State.” The first four freedoms are: the First Freedom, the right to fly over a country without landing; the Second Freedom, the right to land without delivering passengers or cargo; the Third Freedom, the right to delivery passengers or cargo from an originating country into another country; and the Fourth Freedom, the right to take on passengers or cargo in one country that is destined for the home country of the carrier. See ICAO, “ Freedoms of the Air,” http://www.icao.int/icao/en/trivia/freedoms_air.htm

capacity at Shanghai and Beijing, while preserving Hong Kong’s importance, and granting additional beyond rights to US air cargo carriers.

China is planning to expand dramatically the capacity of key airports. Shanghai’s Pudong cargo capacity is projected to grow nearly six times over the next decade – from 0.75 million tons a day in 2003 to five million tons in 2015. Beijing’s daily cargo capacity will grow similarly – from 0.78 million tons to five million tons by 2020. While Hong Kong data is not available, current daily capacity of three million tons may double or triple by 2020. Compared to these sharp Chinese growth rates, Narita airport’s expansion plans provide for growth only from 1.38 million daily tons today, to 1.83 million in 2020, while Kansai is expected to grow from 1.4 million daily tons to three million tons 2020. With these relatively modest Japanese capacity growth rates, China could overtake Japan as Asia’s leading air cargo hub.

To promote its air cargo growth, China and Hong Kong are offering foreign carriers more beyond rights to expand the bilateral flow of goods. One major step in this direction is China’s new liberalized aviation agreement with the United States, completed in July 2004. The new agreement provides U.S. carriers with the ability to establish hubs in China, providing unlimited fifth and seventh freedom operations. In addition, the U.S.-Hong Kong agreement, completed in October 2002, also expands the number of fifth-freedom weekly cargo rights to be operated by US carriers through Hong Kong from eight to 64. In similar fashion, China is drawing on its South Korean air links to help expand its air cargo shipments through Japan and other Asian nations.

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15 The Seventh Freedom is the right in scheduled international transportation for one country (or State) to grant another country the right “of transporting traffic between the territory of the granting State and any third State with no requirement to include on such operation any point in the territory of the recipient State, i.e. the service need not connect to or be an extension of any service to/from the home State of the carrier.” See ICAO, “Freedoms of the Air,” http://www.icao.int/icao/en/trivia/freedoms_air.htm
While opening these new air cargo opportunities, China is also speeding development of its air cargo logistics capabilities. The primary logistics firms in China have long been large state-run enterprises, and Western firms have generally been excluded from facilities at China’s airports. (In contrast, Japan hosts numerous Western logistics firms with direct access to the country’s airports.) Recently, however, China, has acted to repeal restrictive regulations that have barred foreign logistics firms’ entry into China’s airports.\textsuperscript{17}

In fact, China’s national and local governments have designated the logistics industry as a “key strategic sector” on which significant investment and attention should be focused,\textsuperscript{18} and they are encouraging the creation of logistics centers in China. The government is also moving to support logistics joint ventures, even those with majority foreign ownership. (Since December 2002, China has permitted foreign majority ownership in “freight forwarding, storage, road transport, and express operations.”\textsuperscript{19}) While it will take some time for Chinese logistics services to reach the level of those in Japan and Western Europe, this sector has become a focus of government attention.

In addition to taking these steps, China is creating a better information technology infrastructure for the use of companies located in the free trade zones near air cargo centers that deal with Customs. For example, Shanghai’s Electronic Exchange Center has already instituted a system that “offers online queries about import and export, capital flow and cargo flow data”\textsuperscript{20} – a considerable improvement over the EDI systems available in other Chinese cities.

\textsuperscript{18} Ibid.
\textsuperscript{19} Ibid.
In short, China poses a challenge to Japan’s dominant top position as Asia’s key air cargo hub. It has focused considerable effort on expanding air cargo capacity at major airports, on providing additional beyond rights to air cargo carriers, and on expanding the presence of international logistics firms. To maintain its air cargo leadership in Asia, Japan will need to take active steps, including expanding opportunities for global airlines to establish and operate efficient “beyond” services to/from Japan.

As the Chinese export economy grows rapidly – potentially doubling in a decade – it will create a large air cargo flow that will need to be supported by links to China’s airports. China therefore is creating a network of air cargo hubs that support its industrial expansion, attracts additional foreign investment, and ensures that global supply chains to support just-in-time production can easily be established in China. If Japan seeks to compete effectively with such initiatives, it must focus on developing its existing logistics and delivery advantages as a cargo hub, and facilitate airport-based networks that link the web of supply chains in Asia. By enabling air cargo carriers to build networks linking Japan to these new markets with beyond rights, Japan can exploit its inherent advantages.

**The Value of Beyond Rights to Japan’s Economy**

The importance of expanding Japan’s beyond rights extends well beyond preserving and defending Japan’s competitive position in Asia, however. Instead, each new beyond right has the potential to bring Japan between $1.2 billion and $2.4 billion a year in air cargo shipments, according to ESI estimates. Thus, affording an air cargo carrier six to twelve new beyond rights would increase Japan’s trade by $7 billion to $30 billion annually, and would also add $1.4 billion to $2.8 billion annually to Japan’s GDP, according to ESI projections.

ESI estimates the above value of “beyond” rights in two ways. The first is to estimate the value of goods carried on a typical 747 Freightliner flight between Japan and China, and apply this estimate to the number of flights likely to occur using a “typical” beyond right. With a conservatively estimated value per air cargo kilogram
of at least $16, a 747 freightliner with a capacity of 120 tons and a 50% load factor would carry about $1 million of value on each flight (60 tons per flight, at $16,000 per ton). Assuming two flights a day for 300 days a year, each new “beyond” operation would carry an estimated $600 million a year in goods.

A second method of valuing the impact of “beyond” rights is based on estimating the dollar value of a typical flight. Japan shipped $30 billion worth of goods by air to the US in 2002, and its three major airports accounted for some 2.8 million tons of freight internationally. Half of this freight, 1.4 million tons, was for export, of which some 30% (or 420,000 tons) went to the U.S. Dividing the $30 billion value of shipments to the US from Japan by the 420,000 estimated tons shipped, the value of each air cargo ton shipped to/from the U.S. approaches $71,000. Thus, a typical 747 flight carrying 60 tons would be worth $4.3 million by this methodology.

Integrating the results of these two approaches; ESI estimated that the annual value of a beyond right from Japan to/from China would be in the range of $1.2 billion to $2.4 billion. This is higher than the lower estimate of $600 million produced by the first estimating method, but far less than the higher estimate produced by the second valuation method above.

With this estimate of the value of beyond rights, the addition of even six to 12 beyond rights over the next few years would increase the value of goods handled in Japan by nearly $7 billion to $30 billion each year. More significant, even this modest addition of beyond rights would increase the contribution of air cargo to Japan’s economy by $1.4 billion to $2.8 billion annually, through growth in air cargo tonnage handled by Japanese airports.

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21 Boeing, “World Air Cargo Forecast 2002/03: World Overview,” http://www.boeing.com/commercial/cargo/world_overview.html. This forecast notes that “previous research of trade patterns suggested that commodities with value greater than US$16 per kilogram would potentially be transported by air.”

22 The $600 million figure could be the more accurate if the value of the goods being shipped was just $16 a kilo, which Boeing [see the citation in footnote 19] cites as the minimum threshold for shifting to air cargo, from sea transport. In fact the electronic components and semiconductors, auto parts and other goods typically shipped from China to Japan by air cargo are at the very highest end of the value chain and worth far more than $16 a kilogram.
The beneficial effect of new beyond rights for air cargo carriers would also be substantial – an estimated $20 million in revenues for every billion dollars in beyond-market air cargo the carrier transports, or roughly $48 million in revenue generated by each new beyond right. ESI estimates that a substantial portion of these revenues – in the range of $12 million – would likely be spent on local support and logistics services in Japan, and another $12 million would potentially be spent on trucking and other shipping and handling operations in the country. The result is that each new beyond right could be expected to generate at least another $24 million in spending in Japan every year.23

Expanding beyond market opportunities could generate an additional benefit for Japanese shippers – greater competition and enhanced efficiencies at Japan’s cargo hubs. Expanded beyond operations means more efficient supply chains and greater competition among air cargo carriers, leading to reduced fees and cargo costs, and increasing demand for air cargo handled at Japan’s international airports.24

For example, ESI estimates that landing fees at Narita would probably be reduced due to the extension of additional beyond rights from Japan, because this would increase competition in air cargo. Using an Australian study that estimated similar impacts due to new competition, ESI estimated that landing fees at Narita could fall by 4% to 10% as new beyond rights generated more inter-airport

23 ESI compared its estimates with those in a British analysis of the losses from losing night express business. The British estimate is for a $2.5 billion a year loss for twice as many flights as the number considered here, but it adds the effects of businesses relocating from the UK because they cannot operate without express delivery. If one assumes the relocation losses account for most of the potential losses, the estimate we have developed is about half of the British estimate which also includes spending for wages and salaries that we have not included. See London Chamber of Commerce and Industry, “London Business: The Economic Benefits of Night Flights,” July 2004, p. 10. http://www.euroexpress.org/EconomicImpactStudies/ES_EN_UKStudy.pdf

24 Japan’s airports also face a loss of air cargo business because of prohibitive costs. In 1998, one analyst noted that landing, flight and facilities fees were about $9000 for a 747 in both Narita and Kansai, compared to $1800 at Kimpo in South Korea. Inflationary pressures have increased Asian landing fees sharply over the past five years. In 1998, the landing fees at Narita were $6668. The same fees at Korea’s Kimpo were $1543. In 2003, these fees had risen to $8618 for Narita and more than doubled to $3181 at Kimpo. Fees at Hong Kong International were $3,727 in 2003.
competition. This competition could mean a reduction of landing fees in the range of $350 to $860 (Figure 3) for each 747 cargo flight. Ultimately, reduced fees and costs could be expected to stimulate more air cargo traffic to and from Japan -- an estimated 5% to 13.5% increase in tonnage. Even if the Government of Japan is not in favor of competitive downward pressure on Japanese landing fees, it faces a more daunting alternative if fees remain high, the loss of more air cargo traffic to China.

![Impact of Competition on Narita's Landing Fees](image)

**Figure 3**

**Conclusions and Recommendations**

While Japan today is a key international air cargo center, its preeminent position faces a significant challenge from China’s emergence as a major Asian exporter. New investments in China and elsewhere in Asia have put special emphasis

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25 The Australian model of competition in the air passenger industry in Asia helps to estimate the savings at Narita based upon the current landing fees for a 747. This model is useful because it includes price behavior for all participating airlines, measures for price elasticity for different routes and data on the costs of handling planes on specific routes in Asia. All of this information would be needed to develop a similar analysis of international air cargo competition in Asia. We have made the assumption that the benefits estimated by the model for passenger traffic are likely to be similar in scale to the benefits of liberalization of air cargo markets.

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on creating flexible supply chains, and these depend heavily on highly-efficient air cargo linkages and reliable cargo capacity levels.

The risks to Japan of inaction are not insubstantial. ESI estimates that by 2010, Japan could lose between $20 billion and $40 billion annually in air cargo shipped through its airports if air cargo capacity between Japan and China is not increased. One way to address the problem is to provide foreign air cargo carriers as well as internal Japanese air cargo carriers with the right to expand China-Japan “beyond” services, a course that both China and Korea have recently and successfully pursued. Without such service expansion, ESI estimates (Figure 4) that there will be a large and growing capacity “gap” – exceeding 700,000 tons annually by 2010 – between the air cargo capacity needed to handle Chinese cargo shipments, and capacity currently available from air cargo carriers in Japan.

![Forecast of China's International Air Cargo Shipments](image)

Figure 4

**Forecast of China's International Air Cargo Shipments through Japan: Who Will Fill the Demand Gap?**

- **Forecast** - China's International air cargo shipped via Japan
- **Current capacity** - Chinese air cargo shipped via Japan
Extending additional beyond rights to US air cargo carriers will help address this looming cargo capacity gap and promote and maintain Japan’s role as a leading Asian cargo hub. More extensive “beyond” rights would also enhance competition in the air cargo industry in Japan, helping to lower costs at Japan’s largest airports and resulting in an increase in the tonnage handled by these airports.