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Toward a More Liberal Sky in Japan
An Evaluation of Policy Change

Hirotaka Yamauchi

6.1 Introduction

In Japan, we are now facing a powerful policy trend reconsidering the role of the government in economic policy, and a consensus is emerging that deregulation is the only way to revitalize the economy as a whole, to recover international competitiveness, and to benefit consumers. But sometimes even those who advocate deregulation as a general economic principle will object to policy change because an individual policy is likely to hurt their interests. This tendency is a general truth all over the world, but it seems to me that we Japanese do not have as much confidence in the market mechanism as Anglo-Saxon countries, and that this is a reason why dramatic policy change cannot happen in Japan.

Naturally, transport policies in Japan are very conservative. Entry and policing have been regulated tightly in almost all transport modes and the room for effective competition among carriers is very restricted, though procompetitive policies have been adopted recently, especially since the mid-1980s.

Air transport policy is no exception. The air transport industry has been and still is regulated by the Ministry of Transport (MoT) based on the Civil Aeronautics Law, although some changes were made to introduce a competitive situation in the past decade. As is well known, the worldwide trend is to deregulate the airline industry and to promote competition in both domestic and international markets, making the markets more efficient and increasing consumer benefits. However, the changes in Japanese

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air transport policy are gradual and step by step and far from the total deregulation introduced in the United States in 1978.

Such cautious policy operations could be appropriate given the general dislike ordinary Japanese people have for radical policy change. The most important point, however, is whether or not the true purpose of the policy change is to reform the industrial structure significantly, and from the viewpoint of economists, this is not the case in the air transport industry. Air transport passengers hardly realize any economic benefits from the policy changes. For example, the Japanese government introduced a zone fare system in domestic markets on 1 June 1996 and fares became much more diverse than before, but some consumers criticized the diversity of fares and some complained about the fare hikes they were forced to face. The essence of this policy failure is clearly the lack of effective competition even on "double or triple trucking" routes, where two or three carriers offer services, and the difficulties faced by new carriers trying to enter markets.

The purpose of this paper is to survey and to evaluate air transport policy in Japan. In section 6.2 I investigate the history of air transport policy, and in section 6.3 I examine briefly the effect of policy changes made in the past decade. In section 6.4 international air transport aspects will be discussed, and I will try to make some assessment of the policy in section 6.5.

6.2 Regulatory Mechanisms

The Japanese air transport market developed in a strictly regulated environment. The Civil Aeronautics Law, which governs the industry, requires that firms obtain government licenses to enter the market. Airlines also need government approval for their fares, and even for their annual business plans. Naturally, international routes also require government-negotiated bilateral agreements with other countries. In this, Japan has been a traditionalist. The agreements the Japanese government has concluded with other countries are generally modeled on the old Bermuda Agreement, reached in 1944 between the United States and United Kingdom.

6.2.1 Industrial Policy in Air Transport: An Old Regime

Just after World War II, commercial aviation in Japan was banned by the Allied forces, and it was not until 1951 that a Japanese airline was allowed to commence service. In that year, the oldest airline, Japan Airlines (JAL) was founded as a private company, but in 1953 the company was reorganized as a special public corporation. The purpose of this reorganization was to strengthen JAL's international competitiveness.

Also in 1953, two domestic carriers were founded and started service. However, both companies were in poor financial condition, so the Japa-

nese government proposed that they merge into one company and they did so in 1958. This was the birth of All Nippon Airways (ANA) and the first stage of the industrial consolidation in aviation by governmental initiative.

Besides JAL and ANA, six regional carriers were founded in the late 1950s. These carriers also suffered from deficits. Some of them were merged into ANA, but two of them, Japan Domestic Airways and Toa Airways survived until the end of the 1960s. In the second half of the 1960s, Japan Domestic developed a cooperative arrangement with ANA, as Toa did with JAL. As a result, it was thought to be appropriate that each company merge with its partner.

However, this prediction was never realized because the government changed its policy. The Cabinet Meeting Resolution Concerning Airline Operations of 1970 suggested that Japan Domestic and Toa should merge into one company and that commercial aviation in Japan should be operated by a three-company system: JAL, ANA, and Toa Domestic Airways (TDA), which was the company that Japan Domestic and Toa formed.

The government had several reasons for choosing the three-airline system over the two-airline system. First, air transport demand at that time was growing quickly, and this was part of the official reasoning for the necessity of third airline. Second, there was strong political pressure from a particular corporate group to make a third airline, and this pressure could change government policy—though this was not part of the official reasoning. In any case, the birth of TDA was the second stage of the industrial consolidation by governmental initiative.

The government not only initiated the consolidation policy but also used regulatory mechanisms to establish the three-company system. In 1972, the MoT announced the Ministry Guidance Regarding Airline Operations, which gave JAL international business and domestic trunk routes, ANA short-distance international charters and domestic operations, and TDA domestic local routes and some trunk route services.

The intention of this system was to stabilize the business condition of the three companies. According to the government's understanding at that time, the Japanese airline business was in its infancy and so unstable enough that it could not survive in a competitive environment. Since the only lucrative markets for Japanese carriers were domestic trunk routes (Sapporo-Tokyo-Osaka-Fukuoka-Naha), whether or not carriers could obtain licenses to operate on trunk routes was a crucial factor for their business.

The 1970 cabinet resolution consolidated two rather small companies into a relatively big one and made it possible to derive economies of scale. It also meant that TDA got the ability to offer proper services on large trunk routes and that it could use money from trunk routes to compensate deficits on local routes. Things were the same for the other two airlines.

JAL could make up losses incurred in international services and ANA could cross-subsidize losses on domestic local routes, both using surpluses from trunk routes.

The cabinet resolution and the 1972 ministry guidance were together called the "aviation constitution" because they determined the basic market structure of the Japanese airline industry and because airlines could not expand their business beyond the assigned fields. This "old regime" was intended to secure and nurture the capacity of all the airline companies by establishing segmented business fields for each firm. Segmentation of markets was also a common feature of Japanese industrial policy in the 1950s, 1960s, and early 1970s. In air transport, route-licensing regulation made the segmentation concrete and trunk route markets offered a base for financial stability and a source for cross-subsidization.

The old regime survived until the mid-1980s, with all three firms growing steadily within their arranged business bases. The air transport market as a whole grew rapidly with the help of the great economic expansion in Japan, and the route network was widened. Governmental intervention in the form of protection for an infant industry could be said to have functioned adequately up to this stage.

But the most serious problem of this cartel-oriented government policy was the high-cost nature of Japanese airlines brought about by protection from competition, and this problem remained even after the circumstances surrounding the airline industry changed. The government did not face up to the reality of the market and was unwilling to discard old beliefs in regulatory mechanisms. In the earlier stage, the benefits of a wider network and stability in service provision might, to some extent, have outweighed the costs of distorting allocative efficiency. This ranking of cost and benefit soon reversed, however, because as the airlines matured operational inefficiencies grew and consumers were forced to bear unnecessary cost increases.

In the 1960s and early 1970s, consolidating small companies into large ones was a common measure in Japan's general industrial policy. As a matter of form, the government-initiated mergers in the airline industry resemble the industrial policies pursued by the Ministry of International Trade and Industry in such fields as iron and automobile manufacturing. But there was a clear difference between the consolidations in the airline industry and those in other fields: while keen competition both domestically and internationally played a major role in other industries, in air transport, the leading actor was the government itself, which prevented the market from working effectively.

6.2.2 Policy Change in the Past Decade

The old air transport regime collapsed in the mid-1980s. The trigger was the conclusion of the Japan-U.S. Aviation Treaty Interim Agreement of 1985 and the signing of its memorandum of understanding. As already

stated, the strategy of the Japanese government in the 1970s was to limit international scheduled carrier service to JAL, but for international air cargo transport, it was insisted that one more carrier should be allowed to provide service to meet the rapidly growing international air cargo demand. For this reason, a new airline, Nippon Cargo Airways (NCA), was formed, and it applied to the government for a route license to serve the north Pacific market. This application met with intense debate on whether or not the company should be licensed, but finally the government accepted it and started negotiating with the U.S. government over the entry of NCA into the north Pacific market. The 1985 interim agreement was the result of this negotiation.

The interim agreement admitted the new entry of NCA; moreover, it allowed other new carriers, from both Japan and the United States, to start scheduled passenger service. Naturally, to make this possible, it was necessary for the government to end JAL's scheduled international service monopoly among Japanese carriers. Around this time, calls for the liberalization of the Japanese domestic air industry also strengthened, and the Council for Transport Policy (an official advisory committee to the minister) announced its opinion that the old regime formed in the first half of the 1970s should be abolished, and that a more procompetitive air transport policy should be pursued. The content of its detailed advice was as follows:

1. International routes should be served by multiple carriers.
2. Competition on domestic routes should be promoted by new entry into particular city-pair markets.
3. JAL should be completely privatized.

After receiving the report, the Japanese government immediately issued a cabinet resolution abolishing the old regime. But with respect to domestic competition, the council argued that "an American style of deregulation does not suit the circumstances of Japan" because of the capacity limitations of Tokyo International (Haneda) Airport and Osaka International (Itami) Airport and the different competitive strengths of airlines. It is very common in every country that airport congestion problems impede fair market competition, but it seemed to be some kind of legacy from the paternalistic government policy of the old days that airlines' competitive strengths were taken into account in adopting a liberal policy.

Implementing a competition policy in the domestic market, the government set up a system whereby several carriers could enter each city-pair market. Under the criteria adopted, three companies could offer service on routes that carried one million passengers or more annually, and two companies on routes that carried 700,000 passengers or more annually. These criteria have been gradually relaxed since the introduction of the system.

The government has insisted that domestic aviation has become more

competitive because of the new aviation policy adopted in 1986. However, the system has met strong criticisms that the government's regulation of fare approval and entry licensing has remained basically unchanged, so even though several carriers compete on the same routes, these routes are subject to an entirely uniform fare structure except for inclusive tour fares.

The government persisted in fare regulation in the early 1990s, while trying to evade criticism by relaxing entry conditions into double- or triple-trucking routes. The main reason why the government persisted in price regulation is that it knew intense competition between carriers would make it difficult to maintain thin local routes through cross-subsidies and it feared such a situation. Long-time regulation had created vested interests in subsidized areas, and these interests kept putting political pressure on the government. It was in 1995 that the MoT finally adopted a policy that made it easier to offer discounted fares. However, this policy could not calm the critics, and there emerged strong calls for further liberalization of airfares. Responding to these demands, the government adopted a zone fare system in 1996.

The zone fare system adopted in Japan is similar to that adopted by the European Community (now the European Union) before the third package of the Common Air Transport Policy was implemented in 1993. The system involves establishing a fixed price range and allowing carriers to set their airfares within that range at their own discretion. For example, carriers can set relatively high prices in peak travel periods and offer promotional fares during off-peak periods. Needless to say, this system allows carriers to respond to particular demand periods with a flexible fare structure. Carriers can introduce and set all types of discount fares, including advance purchase fares, to meet demand in different periods.

The upper limit of the permitted fare zone is initially calculated on the basis of the airlines' cost level. The lower end of the range is set at 25 percent less than the upper limit. This range is for normal fares. The carrier can set discount fares at most 50 percent below the lower limit. Logically, the deepest discount fare could be set at 62.5 percent off the upper limit fare, though it is not likely that such fares emerge. The possibility that fares diversify and are lower on average depends on the effectiveness of competition in each market. Again, the crucial point is barrier to new entries.[1]

As stated above, the MoT is maintaining the authority to issue route licenses, and this means the air transport market in Japan is still under regulation. But of course regulation is not the only barrier to new entry. Actually, the biggest problem is, as mentioned earlier, the limited capacity of Haneda Airport (airport capacity limitation in the Osaka area disappeared with the completion of Kansai International Airport). Haneda is

1. For details, see section 6.3 and Yamauchi (1996).

the biggest profit engine for domestic carriers, and any restriction on the number of landing slots poses a serious obstacle to new market entry.

In Japan, the MoT allocates landing slots for domestic flights, and there has been a widespread outcry over the opaqueness of the decision-making process. Mainly economists insist that the process should be based on an open and visible bidding system, or determined by a price mechanism such as peak load pricing. However, the MoT has expressed its concern that a bidding system or other market-oriented allocation mechanism would benefit those carriers with the largest current market shares and capital reserves and would only increase market differentials among the competing carriers.

The concern of the government could be reasonable, if we agreed that the purpose of air transport policy in Japan is to nurture the industry. However, Japanese air carriers have grown up, and this paternalistic policy stance has left the overwhelming problem of high costs among the carriers. It is market forces that drive airlines to be more efficient and more competitive, and effective competition among efficient carriers could produce benefits for consumers.[2]

6.3 An Evaluation of Market Competition

In this section I investigate briefly the changes caused by the new policy in the market structure of air transport in Japan.[3]

6.3.1 Demand Structure

The air transport market in Japan has been developing steadily. The five-year growth rates in the number of air passengers are 9.7 (1975–80), 1.6 (1980–85), 8.3 (1985–90), and 3.7 percent (1990–95). The trend is that air demand increase rates exceeded GDP growth rates except for the first half of 1980s, when the capacity of Haneda Airport was a bottleneck hindering supply increase. Thereafter, the expansion plan for Haneda was implemented, and capacity has been increased gradually.[4] As a result, the air transport market in Japan is not small for the geographical size of the country. Total revenue passenger kilometers in the domestic market are about 65 billion, which is one-tenth of that in United States, and the 78 million passengers on domestic routes are equivalent to one-sixth of the U.S. market (these data are for 1995).

2. On 5 December 1996, the MoT announced a new policy guideline, which is directed toward a more procompetitive situation. I will discuss this policy in section 6.5 briefly.

3. A more comprehensive analysis is done in Yamauchi and Murakami (1995).

4. The first phase of this expansion plan, including the opening of a new runway (called the New A), was completed in July 1988, and this spring another new runway (called the New C) was opened. New C expanded capacity substantially (13.8 percent), and this triggered new competition not only among incumbent carriers but also from new entrants.

Using time-series data for 1974–95, I estimated the aggregate demand function as follows:

$$\ln RPK = \underset{(5.430)}{10.157} - \underset{(-3.665)}{0.741}\ \ln RFARE + \underset{(12.782)}{1.292}\ \ln RGDP, \qquad \text{adjusted } R^2 = 0.982,$$

where RPK is revenue passenger kilometers, RFARE is real airfare (domestic yields per revenue passenger kilometer, deflated by the consumer price index), and RGDP is real GDP.[5]

Simple aggregate demand function analysis indicates that the long-term price elasticity of domestic air travel is about −0.74 and the long-term income elasticity is about +1.29. Compared with estimates by Ohta (1981), who suggests that the price and income elasticities are −0.83 and +1.66, respectively, our estimates show that income elasticity decreased because a newer data set was used. In any case, air travel in Japan's domestic market is a so-called normal good.

The most important feature of air transport demand in Japan is the concentration on Tokyo-related routes. Needless to say, Haneda Airport located in Tokyo is the busiest airport: it deals with about 55.1 percent of total air passengers in Japan (see fig. 6.1), although routes that originate or terminate at Haneda account for only 17.9 percent of all routes. Many dense markets are among the Haneda-related routes (see fig. 6.2), which include the Tokyo-Sapporo route, whose annual traffic is 7.6 million passengers, and the Tokyo-Fukuoka route, with 6.2 million passengers. As is well known, Tokyo-Sapporo is the biggest market in the world, and Tokyo-Fukuoka also ranks high by route density.[6] On the other hand, Osaka (Kansai)-Sapporo is the only route ranked among the ten biggest domestic markets in Japan other than Tokyo-related routes.

These features of Japan's air transport demand suggest that operating directly to and from Haneda is a crucial factor in an airline's ability to make profits. It may be possible for Japanese air carriers to operate healthy non-Tokyo routes, but it is clear that their high-cost nature prevents them from doing so, given the lack of workable competition.

6.3.2 Operators

Including the big three carriers, eight scheduled airline companies operate in Japan. Two, Japan Asia Airlines (JAA) and NCA, offer only international service, and two others, Japan Trans-Ocean Airlines (JTA) and Ja-

5. I estimated several other functional forms including a dummy variable that stands for significant fatal accidents, but the simplest one, cited above, was the best fit.

6. The top three markets in the United States are New York–Los Angeles, New York–Chicago, and New York–Washington, D.C. Annual traffic on each of these routes is between 2.5 and 2.7 million passengers.

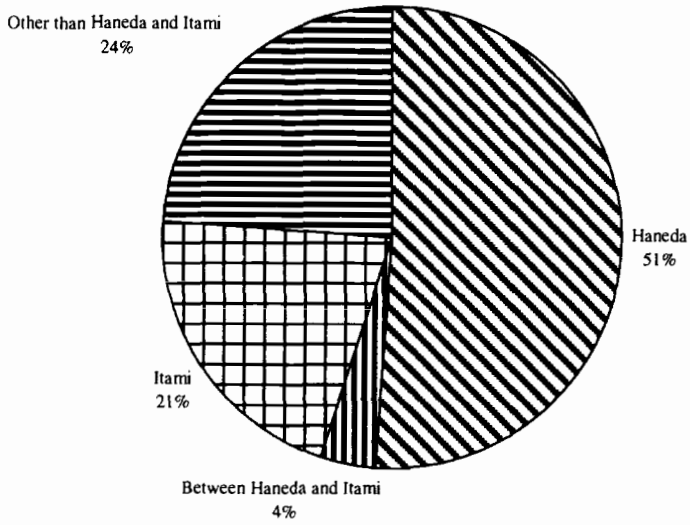

Fig. 6.1 Passenger shares of Haneda, Itami, and other airports

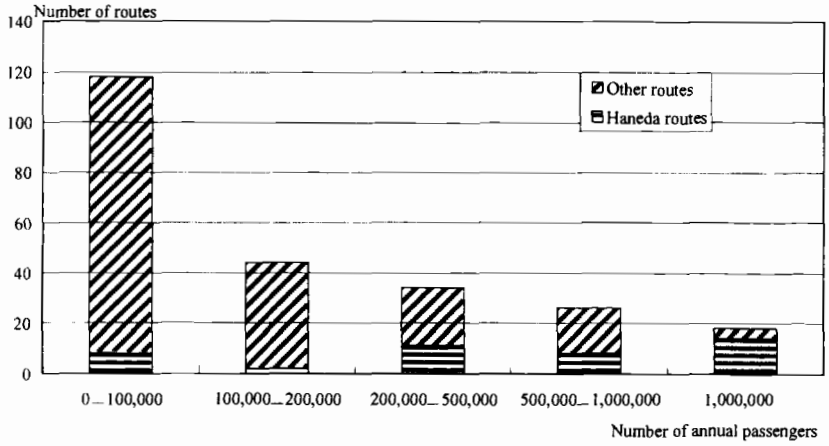

Fig. 6.2 Route structure of air transport in Japan

pan Air Commuter (JAC), are solely domestic carriers. The remaining company, Air Nippon (ANK), is mainly domestic but recently started one international route: Fukuoka-Taipei.

The biggest airline in Japan is JAL. In 1995, JAL carried about 72.4 billion RPK in domestic and international markets, which is half to a third of the traffic of an American megacarrier. The second carrier ANA's output was about 43.8 billion RPK, and that of Japan Air Systems (JAS; formerly TDA) was 13.7 billion RPK.

When the Japanese economy enjoyed an overheated business boom

from the end of the 1980s to the beginning of the 1990s, the airlines also made big profits. After that period, as the economy decelerated, the business condition of the airlines declined too, and they began to accrue big deficits. Only now are business conditions in the air transport market becoming stable, but as we shall see later, airlines are still undergoing business restructuring.

As pointed out in section 6.2, one purpose of tight regulation in Japanese air transport market is to maintain cross-subsidization between trunk routes and local routes. This means that air carriers whose main business is in local markets may well have a lot of unprofitable routes, but since in Japan profit and loss accounts by route are not transparent, we cannot analyze the cross-subsidization mechanism in detail. Sometimes it is said that two-thirds of JAS's routes are loss making, and this assertion then grounds objections to a system of free entry and exit. According to the general claim, under such a system, routes for which demand is thin and that are therefore unprofitable will likely be abandoned, and the welfare of passengers on such routes without substitutable transport modes will suffer.

But from the viewpoint of economists, the best solution to this problem is to maintain services by general subsidy from the government. Such measures have been implemented in the United States as the Essential Air Service Program and are also provided in the third package of the Common Air Transport Policy in the European Union. The Japanese government is now groping for a new direct subsidy system to be implemented at the next stage of air transport liberalization.[7]

6.3.3 Market Structure

In the old regime, ANA had a major share of the domestic market, but since 1986 its share has gradually declined. As figure 6.3 shows, ANA's share dropped from 57.4 percent in 1985 to 47.2 percent in 1994. In a sense, this was a result of the liberalization of domestic air transport markets, but it should be noted that the shares of ANA's competitors did not increase dramatically. JAL and JAS raised their shares from 23.3 to 26.7 percent and 17.2 to 19.9 percent, respectively, but at the same time, ANK, which is a subsidiary of ANA, increased its share by 2.5 percentage points. ANA transferred its unprofitable routes to its subsidiary to make its own financial position healthier. In conclusion, the policy adopted in the mid-1980s has not led to a radical change in market structure.

There are some reasons why ANA has not lost share dramatically. ANA has a strong sales network and brand loyalty in the domestic market,

7. In April 1998, the Council for Transport Policy submitted a report on the further liberalization of air transport markets, in which it was proposed that a new subsidy program be established.

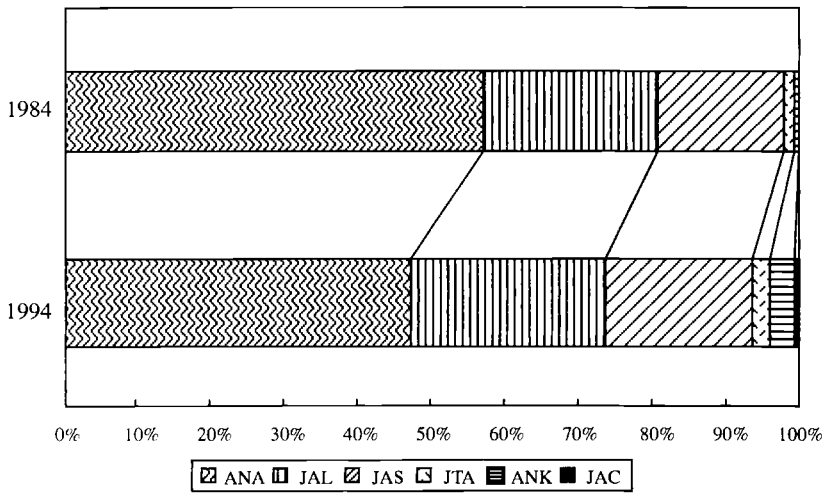

Fig. 6.3 Changes in domestic market shares
Note: Share percentages are as follows: For 1984: ANA, 57.4; JAL, 23.3; JAS, 17.2; JTA, 1.4; ANK, 0.7; JAC 0. 0. For 1994: ANA, 47.2; JAL, 26.7; JAS, 19.9; JTA, 2.5; ANK, 3.2; JAC, 0.5.

which were nurtured under the old regime and are probably the main reasons for ANA's competitive strength. Moreover, until very recently, fare competition has been banned, and new competitors had no effective way to challenge incumbent carriers. In a sense, this was a legacy of the old regulatory environment.

Another reason why shares did not change greatly is airport capacity limitations. As stated earlier, Haneda Airport, the biggest profit center for carriers, does not have enough capacity; and the number of landing slots at the airport has not increased much, although an expansion project is now under way. In such a situation, an incumbent carrier that has a lot of slots at Haneda can use its advantageous position in competing with other carriers, because the regulator treats the vested interest of the incumbent carrier as something unchangeable.

On the other hand, it is also true that the percentage of passengers in city-pair markets with multiple carriers increased. Figure 6.4 shows changes in the percentage of passengers by market type: single-trucking, double-trucking, and triple-trucking routes. After the policy change, the share of passengers on multiple-trucking routes increased steadily, reaching about 72 percent in 1994. In a sense, this means that most passengers had a choice of carrier. But as stated above, carriers were not allowed flexibility in fare setting, even passengers with access to two or more airlines did not enjoy any benefits from competition.

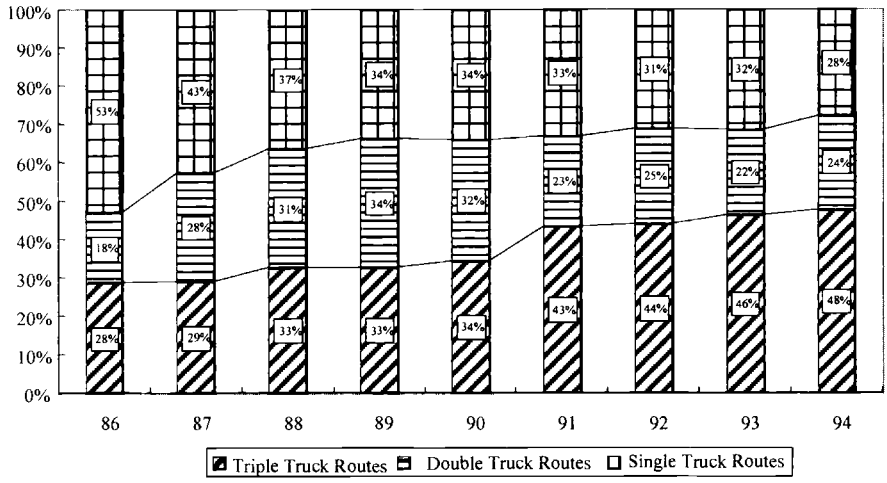

Fig. 6.4 Passenger shares by market type

6.3.4 Airfare Trends

The trend in average domestic airfare since the mid-1970s is shown in figure 6.5. In the figure, the average fare is calculated by dividing total revenue by total revenue passenger kilometers for all carriers. Until recently, domestic airfares were tightly regulated, and the level of the average fare remained relatively stable at least in nominal terms during the 1980s, after a hike in 1980 (a result of the second oil crisis in the previous year). The fact that prices remained stable in nominal terms means that they declined in real terms in general. We can identify a downward trend in airfares since 1990 in nominal as well as in real terms. In this period, fares were still under regulation, but carriers could offer travel agents discount fares for inclusive tour programs. Travel agents might well have used this kind of fare not only for tour programs but also for seat-only sales, even if it was illegal. So we cannot deny the possibility that the downward fare trend in 1990 was triggered by a relaxation of entry requirements introduced in the mid-1980s, with a time lag. But it should be noted that in this period the Japanese economy was in depression, and the fare decrease could be a result of the weak economy. At any case, air passengers in Japan did not realize any benefits from competition, and their dissatisfaction led to demands for a relaxation of fare regulation.

As noted above, a zone fare system was introduced after 1 June 1996. Judging from its early results, we cannot say that consumers' expectations were realized. Fares under the new system were almost the same among carriers, and on some routes, fares actually rose. For example, the ¥43,100 ($399) normal round-trip fare for the Tokyo-Sapporo route rose by ¥5,400 to ¥6,600 ($50 to $60; the increase depends on the carrier and the period

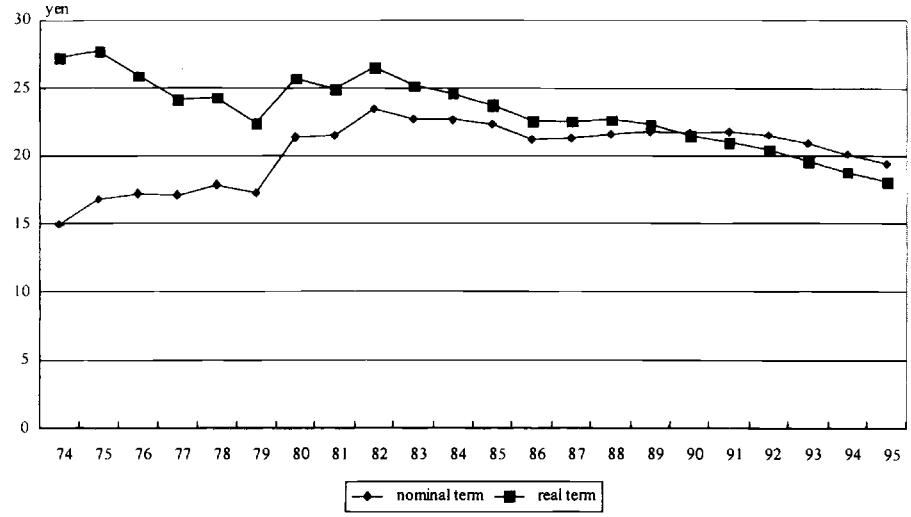

Fig. 6.5 Trend in average airfare
Note: Average airfare was calculated as total passenger revenue divided by total revenue passenger kilometers.

of use). In addition, since the carriers abolished round-trip discounts with no restrictions, the degree of the price rise was significant. Although fares for some routes fell, these were few in number and only a small percentage of passengers enjoyed the benefits.

Criticism of the new fare structure was particularly vocal among local business travelers, who are among the airlines' best customers—for example, discount fares had been offered only for the off-season. The airlines attempted to dodge criticism by saying that they would in the future be offering an even greater array of discount fares. Over the several weeks following the system's commencement, JAS dropped its fares on some routes, expanded the scope of its discount fares, and eased restrictions. The other airlines followed suit immediately.

In spring 1997, the MoT reported a comparison of the average domestic fare under the new zone fare system with that of the previous year (see fig. 6.6). According to MoT data, the average fare, which is revenue divided by revenue passenger kilometers, declined by 2.3 percent in nominal terms. Since general consumer prices remained fairly stable during this period, we can regard this decline as a real price decrease. A price drop of 2.3 percent does not seem trivial because the annual rate of decline in U.S. domestic airfares since deregulation has been 2.8 percent in real terms.[8] However, it is not clear that this price decline was brought about mainly

8. According to Air Transport Association data, the average U.S. airfare in 1977 was 13.4¢ per passenger mile, and this declined to 8.07¢ in 1995 (calculated in constant 1982 dollars).

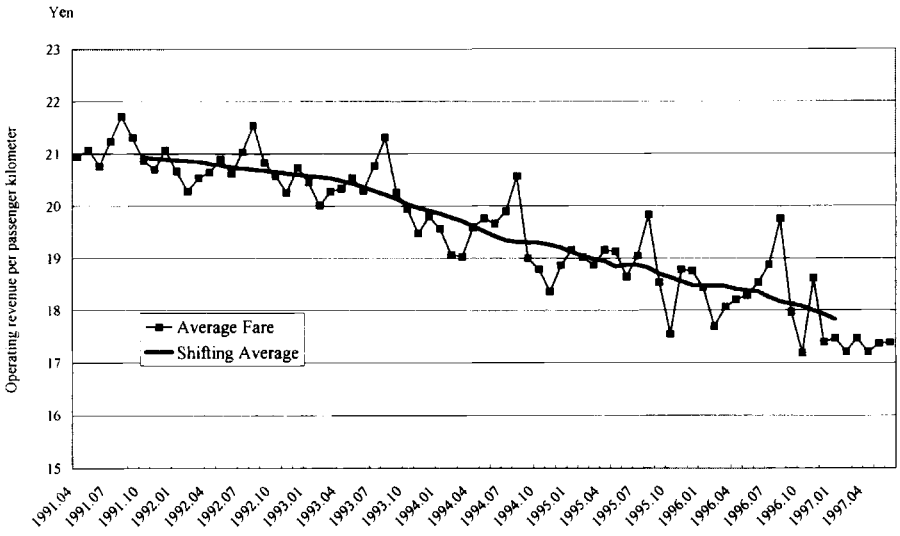

Fig. 6.6 Domestic average airfare (in nominal terms)

through the new fare zone system. As stated above, the average domestic fare started to decline in 1990, and the price fall between 1994 and 1995 was 3.5 percent in both nominal and real terms.

Judging from aggregate data, it is true that domestic airfares in Japan have tended to decline at a nontrivial rate, but consumers cannot see benefits from these fare changes. We may point out several reasons for this discrepancy between what is suggested by the data and what consumers feel. The most important point seems to be that the absolute airfare level in Japan is higher than in any other country, especially the United States.[9]

6.3.5 Cost Behavior

One of the purposes of the 1986 policy change was to strengthen the airlines' competitiveness or to make them efficient by promoting competi-

9. Note that international comparisons of domestic airfares are always difficult. E.g., the MoT of Japan reported that normal fares in Japan are generally lower than in the United States and that advance purchase discount fares are almost at the same level as in the United States, comparing similar routes. According to a news release from the Air Transport Association, however, 92.0 percent of all air passengers in the United States made use of some kind of discounted fare, and the average discount was 67.0 percent off the full fare (ATA Press Release no. 115, December 1995). Thus the simple comparison of published fares is almost meaningless. Moreover, the average domestic yield of U.S. carriers in 1995 was about 8.04 yen per passenger kilometer (12.86¢ per passenger mile). On the other hand, the yield of Japanese carriers was 19.4 yen. If we compare these yields without any manipulation, the average fare in Japan is more than twice as high as in the United States. But the average route length in U.S. domestic markets is longer than in Japan, and the average fare is thought to decline as route length grows. So in this case too, a simple comparison has no meaning.

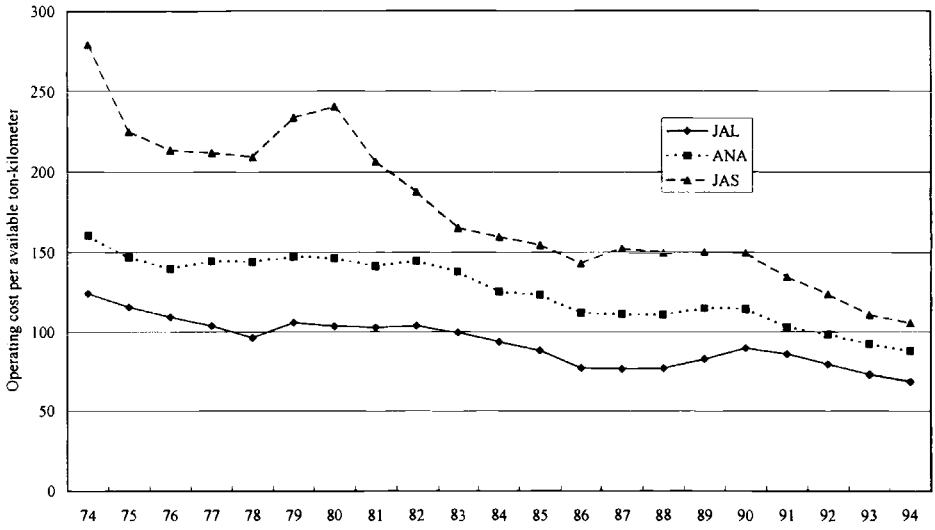

Fig. 6.7 Changes in unit costs (in real terms)

tion among air carriers. This would benefit consumers through market competition. Did the policy change affect the airlines' cost level?

Figure 6.7 shows changes in the big three carriers' unit costs in real terms. Unit costs are determined not only by the operational efficiency of the carrier but also by route structure and air fleet structure. As the average route length grows, unit cost might well decline, and also bigger aircraft could lower average cost. Because airlines in Japan have not had complete freedom to adjust their route structures, it is not proper to compare these three unit costs with each other in a straightforward way. So the trend of costs is more important to observe.

Figure 6.7 shows a downward slope for all unit cost curves. But since the declining trend started far before the regulatory policy change, we cannot conclude that the policy change had a positive effect on airline efficiency. By a brief statistical cost test done by the author, it was shown that the unit costs of JAL and ANA might have been affected by the new policy but that JAS's unit cost might not have been (see Yamauchi 1997, appendix).

JAL entered into many domestic city-pair markets after the new policy was introduced. JAL's new markets were relatively large ones because, as stated earlier, the MoT adopted a standard for new entry based on annual number of passengers carried. This made it possible for JAL to use wide-body aircraft on new routes as in international markets, and so JAL could also enjoy the economies associated with large aircraft. The increased number of domestic routes reduced average route length, which could be

a factor that increased cost. But JAL was always under pressure in international markets to compete with foreign low-cost carriers and, moreover, was completely privatized under the new policy. These elements are likely to have offset the bad effects of entering new domestic markets.

The reason why the new policy decreased ANA's unit cost seems very clear: ANA started international service to Washington, D.C., and other American cities in 1986. Generally speaking, international routes are longer than Japanese domestic routes, and larger aircraft are used in order to make operations more efficient. Entry into international markets might reduce average cost, and this was probably the case for ANA's cost behavior.

As stated above, we cannot say that the average cost of JAS was influenced by the new policy. With respect to route structure, JAS had flown both trunk routes and local routes under the old regime. The new policy made it possible for JAS to enter new markets, but its route structure was not changed. JAS was also allowed to commence international operation, and it started some routes. Its new international routes were, however, short range and could have become a factor in decreasing costs.

Judging from this brief cost analysis and the changes observed in the situation, we can say that the cost behavior of JAS could reflect the net effect of newly introduced competitive policy in Japan because its route network characteristics were unchanged. By contrast, the new policy changed ANA's route structure greatly, and caused JAL's complete privatization. These elements were likely to bring down their cost levels, and probably it is appropriate to distinguish these effects from the pure competitive pressures released by the policy, because these elements can affect the cost level technically—although complete privatization would have some competitive aspects. In summary, the new air transport policy introduced in 1986 generated favorable effects on Japanese air carriers' average costs overall, but it is not clear whether or not these effects were brought about through the substantial competitive process expected from the economists' view point.[10]

6.3.6 Competitive Strategy and Entry Barriers

In evaluating deregulation policy in the United States, it is always pointed out that carriers have adopted several new competitive strategies to establish advantageous market positions and that these strategies have decreased the validity of the deregulation policy. Above all, it is said that the most influential strategies are computer reservation systems (CRSs), frequent flyer programs (FFPs), and hub and spoke network systems (HSNSs). CRSs made it possible for airlines to adopt detailed marketing plans and, consequently, segmented pricing strategies, while we can also

10. This analysis is tentative. I plan to analyze the airlines' cost structure more thoroughly.

regard CRSs as a tool allowing consumers to get the information necessary to make rational choices. FFPs brought consumers many benefits, in the form of price discounts; on the other hand, it increased the cost to an air passenger of switching airline companies. In other words, FFPs are a very powerful way for airlines to capture their customers.

With respect to CRSs and FFPs, Japanese air carriers are in the infant stage. Each carrier group has its own CRS but has failed to use that system, at least for domestic operations. A large portion of air tickets are sold by travel agents, in the form of inclusive tours. In these cases, it is travel agents who determine prices, not airlines. This means that Japanese airlines do not have the power or the ability to segment their market and to set prices for each market. This aspect of Japanese airline operation seems to be quite different from that of foreign carriers. Japanese airlines have not been especially active in introducing FFPs. Until recently, their FFPs were quite limited and far from being used strategically in a competitive environment. For example, all domestic FFPs were separate from international FFPs, and domestic awards were poor. In spring 1997, the airlines introduced new comprehensive FFPs, patterned on American programs, but it is too early to determine the effects of these new programs.

It is obvious that the strongest barrier to new competition is the landing slot shortage at Haneda Airport. In the United States, the HSNSs adopted by larger carriers led to concentration at hub airports, and some studies pointed out that this concentration works as an effective entry barrier (e.g., see U.S. GAO 1996). In Japan, as stated above, the major routes are connected to Haneda, and the key factor in each airline's ability to be profitable is its landing slot allocation at Haneda. Although the landing capacity of Haneda has expanded gradually, at any given time all slots are fully utilized by incumbent carriers. In this situation, it is hardly possible for a new competitor to enter the domestic market successfully and be an active competitor. Therefore, slot allocation at Haneda is an essential factor in promoting competition in the domestic air transport market.

In allocating landing slots at Haneda, the MoT's approach is as follows. First, landing slots at Haneda are property belonging to the state, and the government has the power to allocate them at its own discretion. Second, landing slots should be allocated in connection with route licenses or business plan approval. Thus, if a carrier wants to get a new landing slot, it first should offer a new service to the MoT. Then it can get a slot only when the MoT approves the proposed service as meeting the "public necessity and convenience" condition or contributing to the "public interest" and as not disturbing the supply-demand balance in the market.[11] The last requirement, called the "supply-demand balance regulation," is specified

11. Of course, in addition to these requirements, technological conditions including safety standards should be also satisfied.

in the Civil Aeronautics Law and is interpreted as the main source of the central government's discretionary power.[12]

Clearly, this allocation procedure will never promote effective competition because it is the MoT and not the airlines that decides what kinds of products and how much output should be supplied. As stated in section 6.2, since 1986 the MoT has tried to facilitate double or triple trucking of existing carriers. This policy, however, cannot generate a competitive environment as long as landing slots at Haneda are allocated at administrative discretion.

Faced with the sharp economic decline after the collapse of the "bubble economy," economists began to claim that the rigid Japanese administrative process and wide-ranging regulatory framework were obstacles to the self-supporting recovery of the Japanese economy. This argument spurred a social movement eager for administrative reform, and through this movement, the landing slot allocation at Haneda Airport came into the limelight. A new runway at Haneda was approaching completion, and it would clearly bring a substantial increase in the number of landing slots—enough to influence competitive conditions in the domestic air transport industry.

Responding to public opinion, the MoT established a consultative committee to consider slot allocation at Haneda. At the same time several proposals were made to establish wholly new, independent airlines and to allow entry into major domestic routes (e.g., Tokyo-Sapporo and Tokyo-Osaka) with cheaper fares. The committee recommended that new slots be allocated independent of route licenses or approval of business plans and that the allocating procedure be transparent and procompetitive. In particular, it was proposed that newcomers be given priority in getting Haneda's slots. The MoT accepted these proposals, and some slots were reserved for new entrants.[13] But crucial issues remained—among them, how to allocate the remaining slots to the three incumbent groups.

The MoT's decision was as follows: slots at Haneda would be allocated to the three carrier groups in inverse proportions to each carrier's landing slot share. Moreover, some slots given to ANA were conditioned on the destinations being fixed in order to ensure service provision to thin routes and new airports. This procedure was the same as under conventional slot allocation.

The MoT insisted that the landing slot inequality at Haneda was a legacy of tight regulation and that it was the MoT's role to rectify it. As shown in figure 6.8, ANA and its subsidiaries use about 49 percent of all

12. This is the interpretation maintained by Masahiro Yamaguchi, an ex-bureaucrat of the MoT; he drafted this law in 1952.

13. Until new airlines are ready to operate, reserved slots are provisionally used by incumbent carriers.

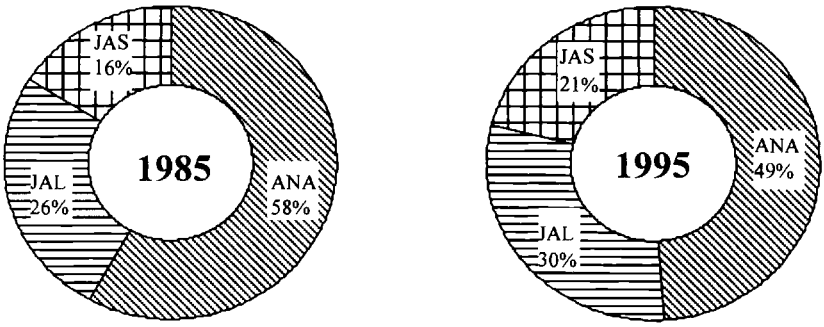

Fig. 6.8 Slot shares at Haneda Airport

Haneda's landing slots. Although ANA's slot share decreased over the past decade, it might be reasonable for other airlines to claim that ANA has a competitive advantage in an essential input factor for airline operation. In some economic analyses of the air transport market, it is pointed out that hub dominance by an airline is likely to be an impediment to effective competition.

The slot allocation rule adopted at this time by the MoT met with criticism. The contention was that the MoT intended to rectify artificially or administratively differentials in business opportunity that had been built up through tight regulation with a long history. Some pointed out that concentration at Haneda was not as serious as the experience in the United States and that if trading of landing slots among carriers were allowed, allocative efficiency would be improved through this buy-sell process, although some considerations would be necessary for newly established airlines.[14] Now the proposal is being made that some portion of the existing slots be taken away from carriers and reallocated in order to mobilize this scarce resource. From the economist's point of view, some kind of price mechanism should be adopted to increase efficiency and to keep the reallocation process open and transparent.

6.3.7 Welfare Change

In economic analysis, a policy change should be evaluated by the magnitude of welfare effects the change would bring. In transport market analysis, a method to estimate passengers' compensating variations using

14. E.g., U.S. GAO (1996) reports that at O'Hare Airport in Chicago, which is a typical congested airport, American and United occupied 87 percent of all landing slots. As for noncongested airports, there are examples at which one carrier occupies more than 80 percent of all slots. The GAO report also claims that the buy-sell rule adopted by the federal government for congested airports was likely to reduce competition.

modal choice functions has been developed and adopted in many studies.[15] The modal choice function is a discrete choice model shown in the form of a probability, which is a function of an indirect utility function. We can estimate the probability of modal choice by specifying the indirect utility function. If a new policy changes the values of, for instance, fare levels, service quality, or other variables composing the indirect utility function, the probability that passengers choose a particular transport mode will change. We can calculate compensating variations by integrating this probabilistic change, multiplying the reciprocal of the marginal utility of income, and summing up this value for every transport mode.

Unfortunately, I could not properly estimate a welfare change caused by the regulatory change mainly because of lack of data. There are two ways to estimate a multinominal logit model: one using aggregate data, the other using disaggregate choice data. Theoretically, it is said that the latter choice is a better one. In Japan, we cannot get the data needed for aggregate estimation of modal choice through published sources, and estimating a logit model with disaggregate data would require a questionnaire survey to obtain stated preference data. The Japan Transport Economic Research Center (1991), an extradepartmental body of the MoT, has published estimated results of nested logit mode choice models. A special study group composed of transportation engineers did this research in cooperation with the MoT, and the MoT used the results in making a new transport plan during the 1990s. Since the mode choice models adopted in this research are part of a four-stage transport demand projection and did not take account of economic analysis, we cannot use them to evaluate welfare change. If we try to estimate welfare gains (gross consumer surplus) caused by the introduction of the zone fare system quite roughly, the results are as follows.[16]

According to the simple demand function given in section 6.3.1, the long-term price elasticity of air travel in Japan is -0.741, and the average airfare decreased 2.3 percent after the introduction of the zone fare system. A quite simple calculation gives the result that the decrease in prices gives birth to a demand increase of about 1.7 percent, income being held constant, and thus all passengers enjoy somewhat cheaper fares. The resulting change in aggregate consumer surplus would be about ¥29.3 billion ($266 million) per year. This estimated gain seems very small compared with the gains reported in several studies of airline deregulation in the United States.[17] As stated earlier, we cannot conclude that this price reduc-

15. The method is developed in Small and Rosen (1981). On its application, see Morrison and Winston (1986).

16. It should be noted that the following analysis is tentative and not conclusive.

17. Morrison and Winston (1986) estimate "total annual benefit to travelers of $5.7 billion or 35 percent of actual 1977 airline revenue of $16.3 billion." Morrison and Winston's estimation is comprehensive, and we cannot make a simple comparison.

tion was brought about solely by the new regulatory system; therefore, the estimation here is hypothetical.

6.4 Revolution of International Air Transport

International air transport is carried out based on bilateral agreements that reflect the reciprocal rights and interests of each country. As often pointed out, in the bilateral system each country asserts its rights and interests, and so the equilibrium of negotiation is likely to result in a traffic level lower than is efficient. This is because the country with less competitive, less efficient carriers might well try to protect its airlines and try to delimit markets within which its carriers can make profits.

An international cartel, initiated by the International Air Transport Association (IATA), stabilized international airfares and avoided substantial competition. It is true that IATA itself still exists and that traffic conferences of IATA are held regularly to set fares route by route, but IATA's ability to tame competition has been much reduced and its main role has sifted to cooperative functions such as acting as the clearinghouse for debt and credit between airlines. As a result, the degree of competition in international markets depends on the bilateral agreements, especially the capacity control clauses of these agreements.

The Japanese government has held to a rather traditional policy stance in international aviation negotiations. However, as stated above, air transport policy reached a turning point in 1986, when the Council for Transport Policy, which consisted of neutral members, submitted a report that showed a new direction for aviation policy of Japan. With respect to international aviation, the report advised that multiple designations should be extended to markets on a reciprocal basis. The background of this council's report was the provisional agreement with the United States made in the previous year, in which new carriers from both Japan and the United States were allowed to enter markets. By this agreement, ANA and JAS became international carriers, and United Airlines, American Airlines, and Delta Airlines started to fly in Japan-U.S. markets.

Indeed, this provisional agreement was not a liberal agreement that gave carriers much freedom of capacity and price setting, but it should be noted that it triggered a change in Japanese air transport policy. And this was the starting point for a relaxation of conditions for new entry and a capacity expansion in international air transport markets with other countries. This is very clear, if we think of the Japan-U.S. negotiation process.

The Japan-U.S. provisional agreement did not become a liberal agreement because the Japanese government believed that there existed an inequality of rights and interests in the Japan-U.S. bilateral agreement, and that this inequality hampered fair competition in the air transport market between the two countries. The Japanese government insisted as

follows. First, in the original agreement, the United States had unlimited fifth freedom rights ("beyond rights") beyond Japan, while Japan had only one point of that right beyond the United States. Second, the number of full-right carriers for the United States was greater than for Japan. Full-right carriers can increase or decrease capacity without advance notice. Third, there was an imbalance in capacity shares in north Pacific markets. Fourth, as a result, U.S. carriers had higher market shares than Japanese carriers over the Pacific.

If this characterization were accurate, it would have been quite natural for the Japanese government to insist that liberalizing the agreement with the United States would benefit U.S. carriers. However, not all of these assertions are thought to be appropriate. As many researchers point out, at least as far as imbalances in capacity share and market share, one cause of such imbalances is that Japanese carriers failed to expand their capacity. It is true that beyond rights are unequal between the two countries, but these rights are not as attractive to Japanese carriers as to U.S. carriers because there seems to be no lucrative market for Japanese carriers in beyond-U.S. routes.

Generally speaking, complaints from foreign countries about Japanese international aviation policy focus on the difficulty of entering the Japanese markets or increasing their capacity. These complaints are thought to stem partly from Japan's policy itself and largely from airport congestion problems.[18]

The negotiating process between Japan and the United States shows that it is not easy to liberalize international air transport through bilateral agreements. In order to conclude liberal agreements, a coincidence of interests between the countries or substantial concessions by one country are needed. In the case of the liberal agreement concluded between the Netherlands and the United States in the summer of 1992, the United States was after the symbolic effects of this agreement on other European countries and the Netherlands made use of the negotiation to strengthen the global alliance of KLM and Northwest Airlines.

Any equilibrium based on a point of compromise will be unstable; thus a new apparatus is needed in order to liberalize regulatory frameworks in the international setting. Some proponents suggest that a multilateral agreement or treaty would be better scheme for achieving institutional change directed to a more liberal environment in international aviation. In a multilateral setting, unified standards for regulatory operations would be concluded, and regulatory operations would become more transparent. Apparently, this trend contributes to liberalization. The U.S. government points out its validity, proposing it in some international organizations.

18. For a detailed discussion of the U.S.-Japan bilateral agreement, see Yamauchi and Ito (1996).

At this time, several multilateral agreements in international aviation have been concluded. The Chicago Convention in 1944, the starting point of the international aviation system after World War II, itself is a multilateral treaty, although it has no economic regulatory framework. In 1980, the United States and the European Civil Aviation Conference (ECAC) signed a memorandum of understanding on passenger-fare-setting rules. Since the ECAC is the representative organization of the aviation departments of European countries, this memorandum of understanding was the first multilateral agreement relating to economic regulations on airlines. In 1992, the Council of Transport Ministers in the European Community (now the European Union) adopted the third package of the Common Air Transport Policy, which deregulated the whole European air transport market substantially. This was a typical multilateral agreement to liberalize international aviation.

Ideally, a multilateral scheme is the most favorable apparatus for liberalizing and developing international air transport. However, it should be noted that it is extremely difficult to get to a multilateral framework. In the EU case, where the Common Air Transport Policy was introduced, the new system was strongly initiated by the European Commission, the administrative body of the European Union. This is because the Common Air Transport Policy brings the commissioners huge benefits in the form of centralized authority over policy operations. Actors as aggressive as these commissioners are rare in general economic settings. A particular country cannot be a promoter of multilateral agreements because there emerge keen conflicts of interest. The multilateral approach was discussed at the International Civil Aviation Organization meeting in 1994, but only limited approval was obtained. In conclusion, to liberalize international aviation, a multilateral approach is the right way, but to accomplish it, gradual reform will be needed.

Another apparatus for liberalizing international air transport is competition in a domestic market itself. As pointed out by Kasper (1996), in the United States, air carriers started to optimize their route networks and operations when faced with the competitive environment created by deregulation in 1978, and now the route networks to be optimized include international routes. The globalization of national economies as a whole make it crucial for airlines to construct global networks in order to be competitive. This in turn requires a more liberal framework for international aviation. We can see evidence of such an industry-oriented procompetitive policy in the United States. In any case, the important thing is not who advocates the policy, but how good is the market performance, or allocative efficiency, brought about by the policy.

Regrettably, in the case of the Japanese air transport industry, competition in the domestic market is not severe enough to force the airlines to pursue new international markets in order to optimize their networks or

make them more attractive to passengers. In fact, although ANA always expresses its desire to extend its international routes, these extension plans seem to be within an existing bilateral framework. The high-cost nature of Japanese carriers makes it more attractive to remain within the existing framework, and also limited competition in the market keeps carriers in inefficient operation.

6.5 Outlook for Japan's Air Transport Policy: A Conclusion

On 5 December 1996, the MoT announced a new direction for transport policy, including air transport. The contents of the announcement were as follows. The supply-demand balance clause included in the Civil Aeronautics Law would be abolished in a year or so. The new landing slots created by completion of the new runway at Haneda Airport would be allocated through a transparent process and in a procompetitive way, and some portion of the existing slots would be transferred among airlines to make competition more workable. In a sense, this statement can be regarded as a drastic policy change, because the supply-demand balance clause gives administrative power to the MoT and the capacity limit at Haneda is the bottleneck hindering effective competition.

The supply-demand balance clause provides that a new entry or an incremental flight by an incumbent carrier will be approved if and only if the authority judges that the balance of supply and demand in the market will not be disturbed by the new entry or additional flight. This is a quantitative control on supply, and the clause has effectively blocked new entry. The clause has also given the MoT wide-ranging administrative discretion because, according to the clause, it is not airline managers but government officials who decide whether there is excess demand or not. Thus the abolition of the clause could mean much more room for effective competition than in the present situation, and this prospect could be strengthened by the new policy statement on slot allocation at Haneda.

However, it should be noted that the MoT's "new new policy" is not an American-type total deregulation policy. It is possible that the present licensing scheme will remain substantially, although its statutory expression might differ from the present one. Therefore, the wide range of administrative discretion may remain unchanged. The trigger for the "new new policy" was a policy recommendation made by the Deregulation Subcommittee of the Administrative Reform Committee, which is a consultative committee for the prime minister. The subcommittee advocated more comprehensive deregulation, but the MoT did not agree with the original proposal. Since the "new new policy" is the result of compromise between the subcommittee and the MoT, it is ambiguous what direction the MoT will take.

In this paper, it was shown that Japan's air transport policy has evolved gradually to a more liberal and procompetitive approach. However, the speed of the evolution has been very slow. In the domestic market, the legacy of the old regime remains, and the market structure has hardly changed. The effects of regulatory change in the past decade were evaluated, but the results are not clear, and the estimated welfare gain is very small.

Japan is still a traditionalist in international aviation policy. It is true that faced with policy change, airlines were forced to restructure their businesses and make them lean, but it seems to me that the airlines' response to the new situation has been "too little, too slow."[19]

In March 1998, Japan and the United States agreed to a new memorandum of understanding. In the negotiation process, while the United States government strongly insisted that Japan accept a liberal agreement, since the Japanese government refused it persistently the memorandum of understanding was not said to be a liberal agreement. The official reason why Japan opposed a liberal agreement was that there remained inequalities of rights and interests in the bilateral agreement mentioned in section 6.4.

However, the essence of the memorandum of understanding was to introduce greater competition into the north Pacific market. The new agreement allows full-right carriers to choose any city-pair market between the two countries if there is no landing slot problem, to exercise beyond rights more freely than at present, and to make use of code sharing even between same-country carriers. Moreover, the agreement equalizes the number of full-right carriers between the two countries, which meets Japan's complaint about inequality in the original bilateral agreement, while for non-full-right carriers, flight increases are allowed. The new agreement was reached with substantial compromises by both countries, but it is certain that competition among carriers will increase, and increased competition will benefit consumers as well as the air carriers themselves.

It is often pointed out that the Japanese government has always behaved in a paternalistic manner, especially in the industrial policy field, and probably this is true for the air transport industry. Given that the American economy was revitalized through competitive market processes and that newly industrializing countries are strengthening their international competitiveness quickly, Japan's stance in industrial and regulatory policy should not be the same as in previous days. And clearly, air transport policy is no exception.

19. On the airlines' strategy for the new situation, see Yamauchi (1993).

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Comment Takatoshi Ito

Hirotaka Yamauchi gives a good description of the deregulation process in the airline industry in Japan. He covers the prolonged process of deregulation up to the current state (1997–98). Airlines in Japan, before 1986, were severely limited in their pricing and routing (like their American counterparts before the U.S. deregulation of 1978). It is interesting to note (as described in detail by Yamauchi) that the domestic deregulation of 1986 was triggered by international negotiations in which Japan pushed to introduce a new cargo airline. Hence, even the deregulation of the late

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1980s was the result of international pressure rather than of an internal debate.

The paper is modest in its critical evaluation of the deregulation process. I would argue that deregulation was too slow. If the MoT had been bold enough to deregulate prices and routes completely in the mid-1980s, when they abandoned the old regime (JAL for international routes, ANA for domestic routes, and TDA for regional routes), the airline companies would have been forced to compete fiercely at a time when business as a whole was still booming. Instead, their costs—increased wages for pilots and flight attendants (rent sharing with workers) and burdens from inefficient subsidiaries—increased during the "bubble economy" period in the late 1980s. This made Japanese airlines less competitive by international standards. As the U.S. airline industry consolidated in the early 1990s, it became apparent that it was more cost-effective in competition over the Pacific. The share of U.S. carriers significantly increased in the 1990s.

Major innovations in U.S. airline services, such as HSNSs, deep discounts with early purchases and conditions, and effective use of CRSs, have not developed in Japan. Routing and pricing had been deregulated in steps in the mid-1990s. As of spring 1998, discounts of up to 50 percent off the regular fare became possible. Routing innovation has not taken place. Airfares have been declining markedly.

What is needed in evaluating Japanese airline policy is a quantitative evaluation of consumer benefits from various deregulation measures. Yamauchi's paper scratches the surface of this issue when he shows the trend of average domestic airfare measured as operating revenue divided by passenger kilometers (fig. 6.5). Ideally, airfares should be compared for each market or for the same distances, since marginal cost declines as distance grows. Difficulties in estimating consumer benefits remain. The value of increased frequency of service, through check-in, and other innovations in airline service is difficult to capture.

Advocates of deregulation faced resistance in Japan. Those who are against deregulation cite the danger of cutting service to remote islands (due to the end of cross-subsidization), thus threatening universal service, and the potentially increased probability of airline accidents due to cuts in maintenance costs. The role of economists is to provide objective evaluations of these claims and accurate accounts of the U.S. experience with airline deregulation.[1] This paper is a first step toward this kind of critical evaluation of deregulation.

1. On the U.S. experience with airline deregulation, see, e.g., Bailey, Graham, and Kaplan (1985) and Morrison and Winston (1986).

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Comment Changqi Wu

The relationship between the development of the airline industry and the evolution of national air transport policy is full of controversy. There seem no compelling efficiency reasons, such as the economies of scale that give rise to natural monopolies in the electricity supply industry, to justify tight government regulation. Nevertheless, governments all over the world have taken measures, in one period or another, to regulate and to protect the air transport industry from its birth. European countries under the flag carrier system legitimized the state ownership of airlines with hidden government subsidies. In the United States, it was through airmail delivery that government subsidies were sneaked in. In all those years, the airline industry was under tight regulation regarding routes, landing slots, and fares. The lack of competition led to high airfares and less frequent service. Air travel became a luxury enjoyed by only a few.

Starting in 1978 in the United States, a fundamental change took place in the airline industry. Since then, "deregulation" and "open sky" have become the buzzwords of air transport policymakers. The deregulation of the airline industry has raised new questions and challenges and enriched the literature of regulatory economics and antitrust economics. Studies of problems in the airline industries, old and new, improve our understanding.[1] Unfortunately, the bulk of this literature is based on the experiences of the United States and European countries. Little has been written on what has happened in Japan.

Hirotaka Yamauchi provides a concise review of the evolutionary process that has taken place in the Japanese domestic airline industry over the past forty-five years. He also highlights the three phases of this evolution and comments critically on two policy initiatives of the Japanese government. These initiatives have helped to shape the current market structure of the airline industry in Japan.

Unlike the big bang approach to deregulation taken in the U.S. airline industry, the market liberalization process in Japan has been slow and

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1. For a good summary of the early debates, see Bailey, Graham, and Kaplan (1985).

piecemeal. The author discusses the three phases in air transport policy: (1) In the 1972–86 period, the relatively free entry of the 1950s was replaced by a so-called aviation constitution that put in place a market structure of three airlines. These airlines divided all routes and created essentially a monopoly in each of three segmented markets. (2) In the 1986–96 period, the territorial monopolies were challenged and replaced by controlled competition among domestic airlines over routes, fares, and services. (3) From 1996 onward, a new initiative was introduced. As we learn from the paper, the 1996 policy initiative clearly represents a more profound policy shift than the previous ones. It is expected to bring fundamental changes to the industry in the years to come. However, it seems to be too early at this stage, as the author points out, for these changes to have any significant effects that are empirically testable. Partly for this reason, he devotes much of the paper to discussing the rather limited policy changes in 1986. In the following, I shall comment on Yamauchi's study.

Market Structure and Competition

Because competition between airlines is largely based on routes, it is weak unless more than one airline serves the same route. One of the most important policy issues is whether the government should allow multiple carriers to serve the same route. This issue has arisen again and again in Japan over the past forty-five years. For instance, after a number of new airlines entered the market in the 1950s, it was the Japanese government that facilitated the creation of a superstable market structure that divided the whole domestic market into three different market segments. The MoT then allocated these routes among three airlines.

The MoT was clearly aware in the 1970s that following rapid growth in demand for air travel, the market was large enough to accommodate more competing airlines. At the same time, it was concerned about the degree of concentration in the industry. That explains why the MoT insisted on the creation of a third airline instead allowing the mergers of the two weak airlines into the two stronger ones in 1970. Nevertheless, the MoT through its administrative instructions made sure that there was no effective route competition among the airlines. Instead, the three airlines operated as separate monopolies, each in its segmented market. The experience of Japan's airline industry provides one more piece of evidence that government-engineered market structure changes do not lead to effective competition. Neither consumers nor society as a whole benefited from the potential improvement in economic efficiency.

Airfare Scheme as a Barrier to Entry

In a competitive market, the balance of demand and supply conditions establishes the price level. A price level maintained by a cartel arrange-

ment is higher than that determined by competitive market conditions. Thus it cannot be sustained without an enforcement mechanism. Government regulation of the airfare system not only endorsed this airfare system but might actually have created it. The tight regulation of airfares constituted a major barrier to entry in the sense that potential entrants could not use price as a means to attract customers and expand their market shares.

After the new policy initiative in 1986, there existed a limited degree of competition over airfare. The author describes briefly the trend in average airfare level calculated based on total revenue and total passenger kilometers traveled. If the author had provided detailed information on changes in airfares and how the airlines set their fares, readers would have a better clue to whether airfares were used as competitive weapons. Readers could also assess the impact of competition if given detailed information on changes in prices on different types of routes. It would be particularly interesting to link airfares with operating costs of airlines, given the differences in cost structure among Japanese airlines. In the 1996 policy initiative, MoT introduced into the domestic market a zone fare system that allows diversities of airfares on different routes. This may improve economic efficiency as long as these fares are set by a well-designed auction mechanism.

Analysis of Cost of Japanese Airlines

In an attempt to assess the effect of government policy changes in 1986, the author has estimated the parameters of a model for Japanese carriers' unit costs. What is not clear in this exercise is the time period covered. The discussion of the economic reasons for the cost reduction seems murky. The author attempts to explain the decline in unit cost by economies of scale due to differences in aircraft size. Because a large aircraft can carry more passengers than a small one, large airlines therefore enjoy more benefits from economies of scale. When looking at the measurement of unit cost, we can see that it is both numbers of passengers and travel distances that matter. One should distinguish the impacts from the two sources. As pointed out by the author, international competition plays a crucial role in determining the unit cost level of Japanese airlines. Airlines exposed to international competition are forced to be competitive in the international market. They can learn from their experiences in international operations to improve their competitive positions on domestic routes. These airlines can definitely benefit from such experiences in terms of more efficient flight scheduling and other aspects of management. It is not very clear why this reason is used to explain the unit cost decline of JAL but not that of ANA. As stated in the discussion, ANA entered the international market as a result of the 1986 government policy initiative. After obtaining long-haul flight routes, ANA also faced the pressure of international competition. Such pressure should have contributed posi-

tively to cost-cutting efforts at ANA. One possible way to capture this effect is to introduce a dummy variable to capture the difference in characteristics of the airlines.

Vertical Relations between Airlines, Travel Agencies, and Airports

As we learn from other papers in this volume, there existed various degrees of inefficiency in the Japanese distribution system. Those deficiencies may constitute a kind of barrier to entry, protecting upstream manufacturers from potential entrants and alleviating competition among incumbents. The relation between the airlines and the travel agencies can also be regarded as such a vertical relation. The author's discussion of the relation between airlines and the ticketing agencies is interesting. Given the fact that there are only three airlines and must be a large number of travel agencies, it is surprising to learn that travel agencies determine the level of airfares. Unless these travel agencies are well organized or there are professional associations to coordinate prices, it is hard to imagine that airfares are determined by travel agencies instead of airlines.

Another interesting issue is how to allocate airport landing slots. In addition to the typical efficient allocation issue, airlines may also use landing rights and landing slots as a kind of barrier to entry. The experiences with deregulation in the United States and theoretical studies show that it is possible to design an efficient auction mechanism (Grether, Isaac, and Plott 1989). Unfortunately, the author does not provide information detailed enough for readers to understand how landing slots were allocated at Japanese airports.

Overall this is a useful paper. Yamauchi not only analyzes the evolution of the airline industry in Japan but also makes predictions about future developments. I am sure readers can benefit from his insights into the evolution of the policy environment in Japan.

References

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