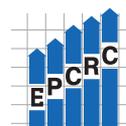


Mongolia: Impact from international air service liberalization

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ECONOMIC POLICY AND COMPETITIVENESS
RESEARCH CENTER

ЭДИЙН ЗАСГИЙН БОДЛОГО, ӨРСӨЛДӨХ
ЧАДВАРЫН СУДАЛГААНЫ ТӨВ

EPCRC

Central Tower 1010a
Sukhbaatar square
Ulaanbaatar
Mongolia

Tel: +976-11-321927
Fax: +976-11-321926
E-mail: info@ecrc.mn
Web: www.ecrc.mn

Supported by:



The Economic Policy and Competitiveness Research Center (EPCRC) is pleased to present the findings of the study on “Mongolia: Impacts of international air service liberalization.” EPCRC was established to promote the concept of competitiveness to the general public and contribute to Mongolia’s economic growth by examining the bottlenecks that hinder the country’s competitiveness. Every year, the center conducts in-depth studies on one or two crucial factors affecting the economy, such as the effectiveness of government regulation and the role of the private sector.

For 2011, EPCRC selected the air service industry as it supports the growth of tourism, trade, business travel to and from Mongolia, and wider economic growth. We partnered with InterVISTAS, an international firm with expertise in air transport, with the assistance from US Agency for International Development.

The aim of the study was to assess the current status of the Mongolian aviation industry, air traffic levels and wider economy and examine how air liberalization in Mongolia will impact:

- Passenger traffic volumes and air fares
- Air cargo traffic
- Job creation in the air transport industry and the wider economy
- Tourism
- Economic growth

In addition, this research also provides recommendations on the approach to liberalization and the potential regulatory and infrastructure implications. It is crucial that government recognizes the importance of improving its policies to promote private sector competitiveness, in order to succeed amidst international competition in our globalized world.

This report presents the findings and brief summary of the study only.
The full report is available at the research center's website: www.ecrc.mn in both English and Mongolian.

We hope that readers find our study timely and of importance to the country's social and economic growth.



Otgochuluu Ch.
Director, EPCRC

Mongolia presents a dynamic air service market with significant potential for growth as its national economy expands. Although the Government of Mongolia has executed bilateral *air service agreements* (bilaterals) with over 30 foreign states, there are only four major routes which regularly connect Ulaanbaatar to critical international hubs in Beijing, Moscow, Seoul and Tokyo. Most of Mongolia's bilaterals contain tightly controlled designations for carriers, routes, airports, capacity, frequency, and pricing.

There is considerable empirical evidence confirming that the liberalization of air services provides benefits for consumers including lower fares and more air services. Furthermore, liberalization will contribute to the overall improvement of the Mongolian economy in terms of a growing gross domestic product (GDP) and increasing employment throughout Mongolia.

The purpose of the study was to examine the potential impact of air service liberalization in Mongolia and to provide some insights as to how Mongolia might approach more liberalized air services.

Evidence of the impacts of liberalization

As documented in the study, there is considerable evidence that liberalization of international air markets has provided substantial benefits for air passengers and the wider economy. For example, liberalization of the EU aviation market (one of the most prominent and large-scale examples of liberalization), led to a 34% decline in discount fares and a doubling in the rate of growth in air traffic in the EU. Liberalization has also benefited emerging economies: the liberalized UK-India bilateral resulted in a 108% increase in passenger traffic, an 8-17% decline in fare and the entry of new Indian carriers. Similarly, the liberalization of the Malaysia-Thailand bilateral resulted in a 37% increase in traffic volumes.

Furthermore, other studies have demonstrated a link between increased air traffic and growth in employment and Gross Domestic Product (GDP). For example, a study estimated that each 10% increase

in international air services led to a 0.07% increase in GDP, which can translate into millions (or even billions) of dollars of incremental GDP.¹

In summary, liberalization leads to increased air service levels and lower fares, which in turn stimulates additional traffic volumes and can bring about increased economic growth and employment, as illustrated below:



Impact of liberalization in Mongolia

Full liberalization (i.e., “open skies”) will ultimately have the greatest positive economic impact on Mongolia and is forecast to produce the results discussed in the study. But there are political and economic realities that will likely prevent full liberalization from being adopted immediately. Therefore, immediate adoption of full open skies may not be practicable. However, maintaining the status quo for air services would result in the withholding of significant economic benefits for the citizens of Mongolia.

The impacts of further liberalization on the Mongolian international air market were estimated using a gravity model developed by InterVISTAS which forecasts traffic between any two countries (or groups of countries) based on the two countries’ economic characteristics, trade levels, geographic relationship and the characteristics of the air service bilateral between the two countries. By specifying changes to the terms of the bilateral, the model can be used to estimate the traffic impact resulting from liberalization.

The long term estimated impacts of full international bilateral liberalization were:

- International traffic to/from Mongolia increases by 112% within 2-3 years of implementation.
- Traffic to/from Asia accounts for nearly two thirds (65%) of the total projected increase in traffic (China, South Korea and Other Asia). Many of these Asian markets (notably China) are projected

¹ InterVISTAS Consulting Inc., “Measuring the Economic Rate of Return on Investment in Aviation”, December 2006.

to achieve high levels of economic growth in the next decade. Increased air services and air traffic to/from these countries will support Mongolia further leveraging its own growth through better ties with other emerging economies. At the same time, liberalization will also stimulate air service to large, established markets such as Europe and North America.

- It is projected that liberalization will reduce passenger air fares by an average of 42%. Assuming full liberalization and based on the traffic increases projected in the report, the total fare savings across all Mongolian air passengers on international flights is estimated to be US\$ 121 Million (MNT 158.4 Billion).
- Liberalization is also projected to increase international air cargo volumes by 62% and increase domestic air traffic (through onward connections) by 43% to 87%.

Economic benefits to Mongolia

Liberalization is also projected to generate significant economic benefits for Mongolia including:

- A total of 117,000 additional international visitors per annum are projected as a result of liberalization, representing a 21% increase over 2010 visitor levels. These visitors are estimated to spend a total of US\$94 Million (MNT 123.1 Billion) in the Mongolian economy.
- Air service liberalization is projected to generate 21,540 full-time jobs in the aviation, tourism and other sectors of the Mongolia economy. This represents an increase of approximately 2.1% in total employment in Mongolia.
- An additional US\$ 189.9 Million (MNT 253Billion) in Gross Domestic Product (GDP) per annum. This equates to an increase of 2.5% in national GDP.

As Mongolia seeks to develop national transportation systems, there have been discussions regarding the negotiations of Open Skies Agreements with potential airline partners. These discussions focus on the impact of rapid economic development in the coming years, specifically, how the liberalization of civil aviation will promote increased business and tourism related travel.

International visitors currently travel to/from Mongolia primarily by air. As Mongolia is a landlocked country, air travel is critical to Mongolia's trade, economy, and its ability to access overseas markets. Although the Government of Mongolia has executed bilateral *air service agreements* (bilaterals) with over 30 foreign states, there are only four major routes which regularly connect Ulaanbaatar to critical international hubs: Beijing (BJS), Moscow (SVO), Seoul (ICN) and Tokyo (NRT). Most of Mongolia's bilaterals are of the *Bermuda I* type, with tightly controlled designations for carriers, routes, airports, capacity, frequency, and pricing.

There is considerable empirical evidence confirming that the liberalization of air services provides benefits for consumers including lower fares and more air services. Furthermore, liberalization will contribute to the overall improvement of the Mongolian economy in terms of a growing gross domestic product (GDP) and increasing employment throughout Mongolia.

The Government of Mongolia has recently stated plans to conduct a comprehensive review of national civil aviation policies. Specifically, the Economic Policy and Competitiveness Research Center (EPCRC) aims to provide an assessment to help frame public dialogue and policy choices on achieving measurable benefits of liberalization of air services to consumers and the overall economy in Mongolia.

IMPACT OF LIBERALIZATION ON AIR TRAFFIC IN MONGOLIA

1. TRAFFIC IMPACTS OF LIBERALIZATION

The following sections examine the impact of liberalization on passenger traffic level, air cargo volumes and fare (cost of service).

1.1. Impacts on passenger traffic

Based on the gravity model described above, the projected increase in international traffic resulting from liberalization is summarized in Figure 1 represents the long-term impact manifesting 2-3 years after liberalization is enacted. Liberalization of Mongolia's air service bilaterals is estimated to increase international traffic to/from Mongolia by 595,000 annual passengers, an increase of 112% relative to 2010 traffic levels of 528,975.

Figure 2 shows the traffic increases stimulated by liberalization, broken down by market. The largest estimated increase is traffic to/from China, which is forecast to increase by 184,000 annual passengers, a 138% increase over 2010 levels. In part, this is driven by Mongolia's strong trade relationship with China: 44% of Mongolia's total trade is with China.²

Traffic to/from Asia accounts for nearly two thirds (65%) of the total projected increase in traffic (China, South Korea, and Other Asia). Many of these Asian markets (notably China) are projected to achieve high levels of economic growth in the next decade. For example, the IMF Economic Outlook October 2010 forecast average economic growth for Developing Asia of 8.5% per annum up to 2015, compared with 2.6% per annum for the U.S. and 1.7% per annum for the Euro area.³ Increase air services and air traffic to/from these countries will support Mongolia further leveraging its own growth through better ties with other emerging economies. At the same time, liberalization will also stimulate air service to large, established markets such as Europe and North America.

2 Source: National Statistical Office (<http://www.nso.mn>). Figure based on 2008 import and export data.

3 <http://www.imf.org/external/pubs/ft/weo/2010/02/pdf/text.pdf>

Figure 1: Passenger traffic impact of liberalization

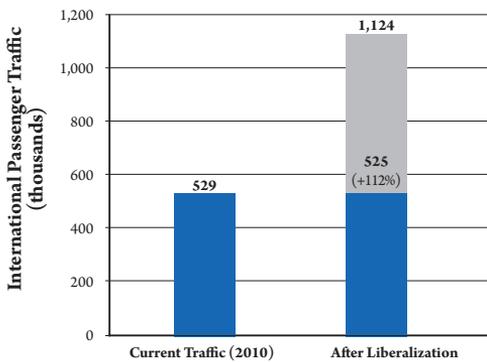


Figure 2: Traffic impact of liberalization by market

Market	Traffic Increase (Thousands)	Percentage Increase	Share of Total Increase
China	184	+138%	31%
South Korea	125	+86%	21%
Other Asia	85	+162%	14%
Russia	31	+116%	5%
Europe/Middle East	86	+99%	14%
North America	77	+96%	14%
Other	7	+41%	1%
Total	595	+112%	100%

1.2. Impacts on air cargo

Liberalization can have significant implications for air cargo. Many bilateral agreements have liberalized provisions for all-cargo services, including seventh freedom rights. All-cargo services are

sometimes used as a means to test the consequences of liberalization before extending the process to include passenger services.

The characteristics of air freight differ greatly from passenger traffic:

- Air freight is very heterogeneous: it can include documents, machinery, foodstuffs, live animals and literally anything else that people wish to ship.
- Air freight shipments range greatly in size, from single-page documents to huge movements requiring charter of several wide body all-cargo aircraft.
- Air cargo can exhibit severe directional imbalances. In general, air passenger flows tend to directionally balance – nearly all passengers who fly from a country return back to that country (and most on the same route). By contrast, air cargo can exhibit strong flows in one direction (e.g., exports from one country to another) which are not necessarily matched in the opposite direction (e.g., there are limited imports from the same country). This imbalance has major implications for capacity management and pricing (e.g., freight rates for the “weak” directional flow can be very low).
- The means of transport can differ: some freight is carried on dedicated freighter aircraft while significant volumes of freight are also carried in the bellyhold of passenger aircraft (that remaining after luggage requirements).⁴

⁴ “Combi” aircraft can also be used, which allow a mixed use of passenger and cargo capacity, although use of these aircraft is on the decline due to safety and economic reasons.

In very direct way, development of air cargo services to/from Mongolia will play a key supporting role in developing Mongolia's trade and its overall economic development. Section 2.4 discusses a number of papers that have established air cargo's role in the development of trade and the economy. Air cargo is particularly important for Mongolia given that the country is landlocked and currently has limited rail and road infrastructure in the country.⁵

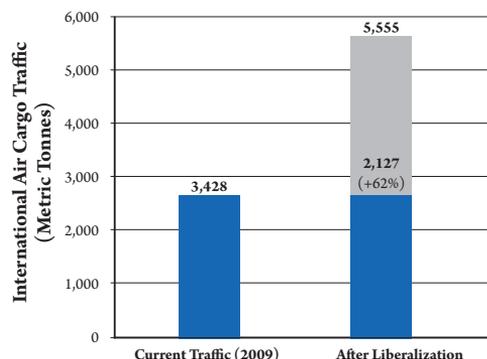
Estimates of the cargo volumes to/from Mongolia stimulated by liberalization have been estimated using the following information:

- A calculation of the bellyhold capacity provided on the additional air services stimulated by liberalization of passenger services.⁶ It is assumed that air carriers will price this bellyhold capacity to achieve a 60% average load factor.
- Section 2.3.1 summarized a paper by Micco and Serebrisky (2004), which estimated that full liberalization (quality of regulation plus open skies) could reduce freight rates by up to 22%. An assumed air fare elasticity of -1.5 was used to estimate the consequent change in freight quantity.⁷

The projected increase in air cargo volumes is provided in Figure 3.

Air cargo volumes are projected to increase from 3,428 (metric) tons to 5,555 tons, an increase of 2,127 tons or 62% relative to 2009 volumes.⁸

Figure 3: Impact of liberalization on air cargo



5 Mongolia's main rail corridor is the Trans-Mongolian Railway running from Russia through Ulaanbaatar into China. In total, Mongolia has 1,908 kms of railway track, of which the Trans-Mongolian Railway accounts for 1,110 kms (Source: CIA World Factbook). In addition, Mongolia has 3,015 kms of paved roads and 46,234 kms of unpaved roads (Source: CIA World Factbook).

6 Based on the capacity available after allowing for passenger's luggage requirements.

7 Fare elasticity measure's consumers' sensitivity to fare price changes for a particular good or service. As the fare increases, the quantity demanded (e.g., the volume of freight transported) is expected to decline and vice versa. Since the quantity demanded generally decreases when the fare increases, this ratio is usually expected to be negative. Air freight has been found to be particularly price sensitive (in this case, a 10% decline in price is expected to result in a 15% increase in freight demand). For example, see: D. Gillen, W.G. Morrison and Stewart, C. (2002), "Air Travel Demand Elasticities: Concepts, Issues and Measurement," October, 2002.

8 The increase in freight volumes is shown relative to 2009 levels as 2010 data was not available.

1.3. Impacts on pricing

The fare reductions were estimated on the basis that much of the traffic stimulation is due to fare reductions. This assumption is supported by the research presented in the study (Section 2.3) which found that liberalization generally results in significant reductions in air fares. In estimating the fare reduction, it was assumed that on country-pairs which already have direct service prior to liberalization, all of the

traffic stimulation is attributable to the fare reductions; while on country pairs that did not currently have direct service, two thirds of the traffic increase is attributable to fare reductions (thus, one third is attributable to improved service levels – direct service, increased frequency, etc.).

As such, the fare reduction was calculated as follows:

Country Pairs Already With Direct Service

$$\% \text{ Fare Reduction}_i = (1 + \% \text{ Traffic Increase}_i)^{\wedge} \text{Fare Elasticity}_i - 1$$

Country Pairs With No Prior Direct Service

$$\% \text{ Fare Reduction}_i = (1 + 2/3 \times \% \text{ Traffic Increase}_i)^{\wedge} \text{Fare Elasticity}_i - 1$$

Information or data on fare elasticities specific to the Mongolian market were not available. Instead, the fare elasticities were taken from an IATA study which provides fare elasticities for different geographic markets.⁹ For example, IATA elasticities were available for Asia-Europe, for Asia-North America traffic, and so on. The most applicable elasticity from IATA report was selected for each country pair. Typically, these elasticities ranged from -0.8 to -1.5.

The estimated impact on passenger fares is summarized in Figure 4. It is projected that liberalization will reduce passenger air fares by an average of 42%. This is in line with experiences elsewhere: a study on the

liberalization of the EU aviation market found fare reductions averaging 34%.¹⁰

Assuming full liberalization and based on the traffic increases described earlier, the total fare savings across all Mongolian air passengers on international flights is estimated to be US\$ 121 Million (MNT 158.4 Billion).¹¹

As noted in the previous section, previous research indicates that liberalization can result in air freight rates declining by up to 22%. It anticipated that freight rates to/from Mongolia will decline by a similar proportion if open skies liberalization is undertaken.

9 "Estimating Air Travel Elasticities", An InterVISTAS Consulting Inc. report for IATA, December 2007.

10 "European Experience of Air Transport Liberalisation", Joint Presentation by the European Union and the European Civil Aviation Conference to the 5th Worldwide Air Transport Conference (ICAO), 24-29th March 2003.

Parts of the EU market had already been liberalized by individual members states prior to the EU's full liberalization. For example, the UK and the Netherlands had already signed an open skies agreement. As a result, the impact of EU liberalization are lower than those of Mongolia.

11 The total fare savings are for Mongolian air passengers only and do not include the fare savings for foreign visitors to Mongolia. Foreign visitors are also expected to benefit from lower fare levels.

Figure 4: Passenger fare impact and total fare savings from liberalization

	% Reduction in Average Fare	Total Fare Savings for Mongolians (MNT)	Total Fare Savings for Mongolians (US\$)
Liberalization Impact	42%	158.4 Billion	121 Million

All financial figures are in 2010 prices.

2. SECONDARY IMPACTS ON THE DOMESTIC AIR SERVICES

Domestic traffic totaled 136,828 passengers in 2010, with Eznis Airways and Aero Mongolia operating the vast majority of Mongolia’s domestic services.

While this study does not consider further liberalization of the domestic market, it is anticipated that liberalization of international service will have an impact on domestic traffic volumes. Some of the incremental passengers will likely connect with domestic services in order to start or complete their journey in areas of Mongolia away from Ulaanbaatar.¹² In particular, there is expected to be demand for service to/from mining regions in the South and tourist attractions around the country.

Information was not available on the current proportion of international passengers connecting onto domestic services. Anecdotal information indicates that most tourists to Mongolia use local tour operators to make arrangements for travel within the country, including

booking domestic flights as part of the tour package. As these passengers are in essence self-connecting (the domestic carriers do not have interline agreement with any of the international carriers), it is very difficult to track their connections.

Instead, the impact on the domestic market has been assessed using scenario analysis. Based on experience in other markets and expert judgment, it is assumed that between 10% and 20% of the incremental international passengers would connect onto domestic services. Based on this assumption, it was possible to estimate the impact on the domestic market, as summarized in Figure 5. If 10% of international passengers connect on domestic services, this would produce a 43% increase in domestic traffic. If 20%, the growth in domestic traffic is 87%. It is clear from this analysis that liberalization of the international air services could have major impacts for the Mongolian domestic market.

Figure 5: Secondary impact on domestic passenger traffic

Assumed % of Connecting International Passengers	Additional Domestic Passenger Traffic	Growth in Domestic Market*
10%	59,000	+43%
20%	119,000	+87%

** Relative to 2010 traffic levels.*

¹² It is anticipated that virtually all the additional international services will be still utilize ULN.

ECONOMIC IMPACT OF LIBERALIZATION

The increase in air service and traffic is forecast to stimulate employment and economic growth in a number of ways:

- **Aviation Sector:** additional economic activity in the aviation sector is generated by the servicing, management, and maintenance of the additional air services.
- **Tourism Sector:** air service facilitates the arrival of larger numbers of tourists to a country; this includes business as well as leisure tourists. The spending of
- **Catalytic Impacts:** includes the role of air transportation in facilitating growth and productivity in the general economy by increased trade, business activity and greater personal productivity.

The following sections describe the potential economic impacts for Mongolia as a result of air service liberalization.

1. IMPACT ON TOURISM

In 2010, a total of 557,414 international visitors arrived in Mongolia.¹³ In 2010, these visitors spent a total of US\$ 222.4 Million (MNT 292.3 Billion), an average of US\$ 399 (MNT 524,300) per visitor.¹⁴

Based on previous booking patterns, it is estimated that approximately 39% of the incremental air traffic stimulated by liberalization will be visitors to Mongolia (the remainder will be Mongolian residents). It is anticipated that visitors by air will spend considerably more than the overall average rate of US\$ 399, which is heavily skewed towards visitor by land.¹⁵ Visitors arriving by air tend to stay for longer and have greater need for accommodation and ground transportation. Therefore it

is assumed that the incremental visitors by air will have a spend rate double the average (US\$ 798). Sensitivity analysis on this assumption is provided in the next section.

Based on these assumptions, Figure 6 shows the incremental visits stimulated by liberalization. A total of 117,000 international visitors per annum are projected as a result of liberalization. This represents a 21% increase over 2010 visitor levels (557,414).¹⁶ These visitors are estimated to spend a total of US\$94 Million (MNT 123.1 Billion) in the Mongolian economy. The employment impacts of this additional visitor and tourist spend is discussed in the next section.

13 Source: Mongolian National Tourism Center, <https://mongoliatourism.gov.mn>.

14 Ibid.

15 Based on the air traffic data described in Chapter 3, it is roughly estimated that only 13% of visitors to Mongolia arrive by air.

16 The increase in visitors (21%) is considerably less than the growth in passenger traffic (112%) due to the high proportion of visitors arriving by land.

Figure6: Additional visits stimulated by liberalization

	Additional Visits	Total Visitor Spend (MNT)	Total Visitor Spend (US\$)
Incremental Visits	117,000	123.1 Billion	94 Million

All financial figures are in 2010 prices.

1.1. Sensitivity tests

As data on spending by visitors arriving by air was not available, the spending rate of these visitors was estimated assuming that they spent double the average of all visitors. This was a reasoned estimate based on typical spend rates in other parts of the world.

However, as the spend rate was based on an assumption, sensitivity test were carried out to examine the impact of this assumption. Two tests were conducted assuming different levels of visitor spend:

- **Low:** visitors are assumed to spend at the average rate of all visitors to Mongolia (both air and land visitors): US\$399 per visitor.

- **High:** visitors are assumed to spend at three times the current average ($3 \times 399 = \text{US\$}1,197$). This 50% higher than assumed spend rate used in the primary analysis.

The estimate spend under these assumptions are provided in Figure 7, along with the results from the primary analysis. Note that the number of visitors is the same in all scenarios, only the spend rate changes. As can be seen, the total spend is US\$ 47 Million in the low scenario and US\$ 141 Million in the high scenario, a range of +/-50% relative the primary analysis.

Figure 7: Sensitivity test on the visitor spend rates

	Additional Visits	Total Visitor Spend (MNT)	Total Visitor Spend (US\$)
Primary Analysis (US\$ 798 per visitor)	117,000	123.1 Billion	94 Million
Low Scenario (US\$ 399 per visitor)	117,000	61.6 Billion	47 Million
High Scenario (US\$ 1,197 per visitor)	117,000	184.7 Billion	141 Million

2. IMPACT ON EMPLOYMENT

This section provides estimates of the employment generated in three areas:

- Aviation;
- Tourism;
- Catalytic impacts.

2.1. Employment impacts in the aviation sector

Increases in air traffic will require additional resources to handle the additional passengers and aircraft. Employment in the aviation sector is related to the servicing, management and maintenance of additional air services, which includes activities at airlines, airports, air navigation and other aviation-related businesses. Furthermore, this additional aviation activity has “spin-off”

impacts into the wider economy known as indirect or multiplier impacts. For example, these include: food wholesalers that supply food for catering on flights, trucking companies that move goods to and from the airport, refineries processing oil for jet fuel, etc. These indirect impacts generate additional employment in a range of industries.

The resulting estimates are provided in Figure 8. Liberalization is projected to generate an additional 2,010 (direct) full-time equivalent (FTE) jobs in the aviation sector. Including the indirect jobs, the total reaches 4,310 new full-time equivalent jobs. As with the traffic figures, these are the long term projections some 2-3 years after liberalization.

Figure8: Additional employment generated in and by the aviation sector

	Direct Employment (FTEs)	Indirect Employment (FTEs)	Total Employment (FTEs)
Liberalization Impact	2,010	2,300	4,310

2.2. Employment impacts in the tourism sector

Air service facilitates the arrival of tourists (both business and leisure) to a country or region. The spending of these tourists can support a wide range of tourism related businesses: hotels, restaurants, theatres, car rentals, etc. In addition, the tourism industry generates significant indirect impacts in businesses that supply and support tourism. For example, food wholesalers for hotels and restaurants, taxi firms, hotel laundering services, delivery trucks, etc.¹⁷

Liberalization is projected to result in an additional 117,000 visitors to Mongolia spending a total of US\$ 114 Million in the national economy. Based on the methodology and parameters described in Annex B, the estimated incremental employment related to the tourism sector is summarized in Figure 9. The incremental tourism is projected to generate 5,600 FTE jobs within the tourism sector itself, plus 6,620 FTE jobs in indirect employment for a total of 12,220 FTE jobs.

¹⁷ By this definition, air transport could be considered part of the indirect industries benefiting from tourism. The multipliers used in this analysis exclude air transport as part of the indirect impact of tourism, to avoid double counting.

Figure 9: Additional employment generated in and by the tourism sector

	Direct Employment (FTEs)	Indirect Employment (FTEs)	Total Employment (FTEs)
Liberalization Impact	2,010	2,300	4,310

2.3. Catalytic impacts

Air transportation has been linked to economic and productivity growth. Air transportation facilitates employment and economic development in the national and regional economy through increased trade, attracting new businesses to the region and encouraging investment. In particular, catalytic effects can include some or all of the following:

- **Trade effects** – air transport liberalization opens new markets to many businesses as a result of new destinations, better flight connections and higher frequencies offered. This leads to a broader demand for existing products.
- **Investment effects** – a key factor many companies take into account when taking decisions about location of office, manufacturing or warehouses is proximity of an international airport.
- **Productivity effects** – air transportation offers access to new markets which in term enables businesses to achieve greater economies of scale. Air access also enables companies to attract and retain high quality employees.

These catalytic impacts can have significant implications for employment. For example a study by Button and Taylor (2000) found that as many as 44-73 jobs are generated for each additional 10,000 E/D international

passengers while the study by Brueckner (2002) found that 22 jobs were generated by each additional 10,000 E/D passengers.¹⁸

The catalytic impacts in Mongolia have been estimated using parameters calibrated from international data from previous examples of expanded air service. The parameters have been then tailored to the Mongolian situation, reflecting local employment, economic and business conditions.

Figure 10 shows the forecast employment stimulated in the wider economy (excluding air transport and tourism) by the catalytic impacts of increased air services. Liberalization is forecast to generate 5,010 FTE jobs in catalytic impacts.

Figure 10: Additional employment generated by catalytic effects

	Catalytic Employment (FTEs)
Liberalization Impact	5,010

2.4. Total employment impact

The total employment stimulated by liberalization is provided in Figure 11. Air service liberalization is projected to generate 21,540 FTE jobs in the long term. This represents an increase of approximately 2.1% in total employment in Mongolia.¹⁹

18 Button, K. and Taylor, S. (2000), "International air transportation and economic development", *Journal of Air Transport Management*, Vol. 6, Issue 4, October 2000. Brueckner, J. (2002), "Airline Traffic and Urban Economic Development".

19 The total employed population at the end of 2010 was 1,089,600. Source: Monthly Bulletin of Statistics, National Statistical Office of Mongolia, November 2010.

Figure 11: Total incremental employment stimulated by liberalization

	Employment (FTEs)
Aviation Sector	4,310
Tourism Sector	12,220
Catalytic Impacts	5,010
Total	21,540

3. IMPACT ON GROSS DOMESTIC PRODUCT

In addition to employment, another measure of economic impact is the contribution to Gross Domestic Product (GDP). GDP is a measure of the total national output of an economy - the total monetary value of all goods and services produced domestically. It includes income earned domestically by foreigners, but does not include income earned by domestic residents on foreign ground. The estimates of additional GDP generated by liberalization provided below includes the employment income associated with the

jobs described in the previous sections as well as the profits of the benefiting businesses and any related taxes or subsidies.

The total GDP generated by increased activity in the aviation and tourist sectors, as well as indirect and catalytic impacts, is presented in Figure 12. Air service liberalization is forecast to generate US\$ 189.9 Million (MNT 253 Billion) in GDP per annum. This equates to an increase of 2.5% in national GDP.²⁰

Figure 12: Additional gross domestic product generated by liberalization

	Incremental GDP (MNT)	Incremental GDP (US\$ at PPP)
Liberalization Impact	253 тэрбум	189.9 сая

All financial figures are in 2010 prices.

²⁰ Mongolia's GDP in 2010 is estimated to be US\$ 10.16 Billion (at PPP). Source: CIA World Factbook, <https://www.cia.gov/library/publications/the-world-factbook>.

RECOMMENDATIONS FOR THE LIBERALIZATION OF MONGOLIA

1. Issues and approaches for Mongolia

The study outlines the impact of liberalization of air services in emerging economies and demonstrates the positive impacts of liberalization under almost all circumstances. InterVISTAS' modeling and prior liberalization examples demonstrate that opening the Mongolian market would produce a rapid increase in passenger and cargo traffic. However, the current government policy in Mongolia must balance the need to stimulate additional traffic, with all the economic benefits that such stimulation entails, with a policy of improving the competitive position of MIAT, the national flag carrier, and its private national carriers to prepare them for more open competition in a liberalized market. There is unmet demand for air services into Mongolia, particularly during the busy spring and summer seasons, but improving the competitive position of MIAT and other national carriers is also a critical factor.

Liberalization of air markets has produced positive results for flag carriers in the past (e.g., Dubai, Singapore, and others). However, many of these examples represent strong national carriers with significant fleets and assets to engage in, and endure, strong competition. Other national flag carriers have failed (or suffered significant losses) when faced with opening of markets (e.g. Sabena,

Alitalia, Olympic, Air Jamaica). If the survival and future development of MIAT remains a national priority, the Government of Mongolia must adopt a stepped, measured approach to both strengthening MIAT as a viable entity, while still moving toward a liberalized air service policy that will provide economic benefits to the entire Mongolian economy.

Mongolia represents a relatively unique situation, because of a number of factors:

- As a landlocked nation, Mongolia is particularly dependent upon air transportation, both domestically and internationally;
- Mongolia possesses a relatively small national population dispersed over a large geographic area;
- Dramatic economic growth has stimulated demand for air services to and from Mongolia
- Seasonal air service demand (summer) is particularly high, with dramatic drop in demand during the autumn and winter seasons; and
- Internal destinations, which are keys to growth, are remote, and many domestic airports will require major upgrades (ILS, paving runways, etc.)

MIAT, the national flag carrier, could be in a precarious position with increased competition, as it is not presently structured to compete in an open

environment against the major carriers from Mongolia's bilateral markets (particularly China, Korea, and Russia). The carriers flying into Mongolia have vast fleets, larger capacity aircraft, and significant economic resources (including broad air carrier networks and alliances) from which to draw. Although MIAT has announced plans for eventual fleet expansion, intending to double its fleet from three to six aircraft, this expansion could be four to six years in the future.

It is also critical that the Government of Mongolia recognize the investments made and committed by the privately owned national carriers and support a policy to encourage them to expand their services internationally. While strengthening MIAT, a strong policy to support privately owned Mongolian carriers must be put in place to allow them to offer international route services and compete in a liberalized market along with MIAT. Eznis and Aero Mongolia, the major privately owned domestic carriers, are poised for growth and have recently made major commitments to step up their capabilities with a plan of further investments into their operations. The potential for growth of domestic air

services is high, particularly to the west and south of the country. Eznis is adding two Avro RJ85 aircraft to its fleet, while Aero Mongolia is planning to add either a B737 or A320 to its fleet of Fokker F50 aircraft. Both airlines are building maintenance facilities to increase their in-house maintenance and engineering capabilities in preparation for their fleet expansion. With this expansion of their fleets, both carriers will be ready to add additional international routes and will likely fully support liberalization.

The government policy at this time appears to be somewhat cautious, keeping existing bilateral constraints in place, particularly with regard to Korea and China. Given its significant potential impact, the government is apparently willing to consider liberalization, but only on an incremental basis, as MIAT strengthens through fleet expansion, corporate restructuring and building up of cash reserves.

The following section proposes one path toward liberalization that could, if implemented successfully, address both of these concerns.

2. Scenario for liberalization in Mongolia

Ultimately, full liberalization (i.e., “open skies”) will have the greatest positive economic impact on Mongolia. But, as discussed above, there are political and economic realities that will likely prevent full liberalization from being adopted immediately. Primarily, current government policy is focused on strengthening MIAT to be more competitive and to have an adequate fleet to supply the required capacity in a more competitive market. Therefore, immediate adoption of full liberalization (“open skies”) may not be either practical or desired. Nonetheless, maintaining the status quo for air services results in the withholding of significant economic benefits for the citizens of Mongolia.

There is a middle road between the

presently restricted markets and open skies, however. Capacity, frequency, and designation changes short of full open skies can be examined in selected markets to ease current bottlenecks and permit some growth of the market – with positive impact on Mongolian economy and Mongolian aviation. In the long run, the government must find a method to strengthen MIAT in preparation for a broad opening of air service markets, while reaping the benefits of increased air traffic into and out of Mongolia.

The following steps provide a potential outline for meeting important government objectives in the long-term, while furthering the growth of Mongolian air markets and national economy in both the short- and medium-term:

1. **Establish target.** The first step would be to evaluate the benefits of liberalization (using this study and others) and then to establish a target for a level of deregulation/liberalization, taking into account effects to tourism, the national economy, and the overall aviation industry. Thus, the government would set a goal for limited or full air service liberalization and establish an initial target date to implement the necessary policy changes to meet that target.
2. **Establish conditions for liberalization.** The second step would be to examine the policy and regulatory framework that governs international air services to ensure that there are no impediments to the liberalization of air services and then to establish the conditions necessary to achieve liberalization. An initial review of the legal and regulatory framework indicates that there are presently no major legal impediments to liberalization. Once a policy is established to move toward liberalization, the government must establish the required conditions for full deregulation, including ensuring a level of readiness and expectations from all parties, including the Ministry, MCAA and the air carriers. This will require a cooperative atmosphere among the parties and a willingness to commit to (at this stage) a broad timeline towards achieving the goal of air service liberalization.
3. **Strengthening of MIAT.** Although the specific circumstances of MIAT are beyond the scope of this study, it is readily apparent that MIAT must be strengthened to become a strong, economically viable international air carrier. Because of MIAT’s size in relation to its competitors in international markets, there is justifiable trepidation regarding MIAT’s capabilities at this time to withstand strong competition in some

markets. In this step, the government would work to improve the ability of MIAT to compete in a more liberalized market. This would include a comprehensive review of potential marketing and strategic alliances, development of updated route and fleet optimization plans, completing a competitive service offering review and analysis of performance improvement options.

4. **Strengthening of privately owned national carriers.** While MIAT is being prepared for an increasingly competitive environment, particularly on Beijing and Seoul routes, the government must encourage domestic privately owned carriers to develop other international routes and augment Mongolia's capacity to compete with foreign carriers. This can be done by allowing the private carriers to serve destinations that are not of high priority for MIAT. Also, during peak seasons or when there is a capacity constraint on routes served by MIAT, the private carriers can be asked to provide services on those routes. In order to foster further investment and expansion of their capabilities, the government must consider reallocations of existing unused or underutilized designations based on private carriers' willingness and technical capabilities to service those routes.
5. **Development of liberalization strategy.** This step involves the determination of interim steps for gradual liberalization, and the development of a clear negotiation strategy for discussions with Mongolian air service bilateral partners. In developing this strategy, the government must take a holistic approach, examining the impact of liberalization on the entire Mongolian economy and on its air carriers, including MIAT, Eznis and Aero Mongolia. Existing bilaterals should be examined for opportunities to explore limited or gradual increases in capacity and frequency and, where, appropriate, carrier designations. In addition, Mongolia should examine opportunities for new bilateral or multilateral relationships that could provide opportunities for its carriers and for potential positive impact on Mongolian air services and the economy as a whole. Upon agreement of a negotiation strategy, the government can make initial inquiries with its aviation partners regarding receptiveness to limited changes in bilaterals as it explores a path to more complete liberalization.
6. **Implement limited liberalization.** Once long-range targets and policies have been established and a plan for the strengthening of MIAT is developed, the government should examine the possibility of negotiating limited increases in frequency and capacity in particularly constrained markets such as South Korea and China. As noted above and throughout this report, liberalization will produce a significant positive impact on the Mongolian economy, creating additional jobs in multiple sectors and increasing travel options for Mongolian citizens and visitors from abroad. With a viable plan in place for ensuring the viability of the national flag carrier, the government should examine limited liberalization steps that could be taken to immediately provide a positive impact on the Mongolian economy and to also permit the continued dynamic growth of private air carrier operations by Aero Mongolia, Eznis, and others. Options for increased frequencies, capacity or designations have the potential for immediate and significant impact on Mongolian tourism, the national economy, and job creation and can be undertaken in a way that is consistent with broad government policies and without harm to the national flag carrier.

7. **Synchronization of market liberalization.** The government should consider adopting a synchronized, measured approach to opening some markets with milestones or implementation schedules that coincide with positive developments in reorganizing MIAT and with the growing capabilities of other Mongolian carriers. Thus, the agreement of additional capacity or frequencies among bilateral partners could be implemented to ensure fairness on all sides, such as adding frequencies when Mongolian carriers add to their fleets and are capable of providing lift similar to that of the airlines of Mongolia's bilateral partners.
8. **Examination of domestic market.** At the same time the government begins to open the air service market to additional passengers and cargo, a study should be undertaken to review domestic lift capabilities with the goal of ensuring that Mongolian citizens in all geographic regions of the country have reasonable access to air services. Essential air service or other subsidization plans ensure both regular and emergency access to air transport. As the number of international passengers coming into Mongolia increases, it will be critical to strengthen and ensure the growth of domestic services during transition period to full liberalization.
9. **Address aviation fuel price issues.** One factor that keeps airfares at an expensive level is the cost of aviation fuel in Mongolia. While there may be reasons for high fuel prices in Mongolia (shipment expenses, lack of refinement nearby refinement capabilities, etc.), Mongolia has a reputation for having one of the highest costs for aviation fuel in the world. If Mongolian carriers are to be competitive with other carriers in the region, they need access to reasonably priced aviation fuel, at least at a price level similar to that enjoyed by their competitors. As part of a comprehensive strategy to develop air services throughout Mongolia, the issue of aviation fuel pricing must be addressed. While fuel costs may eventually decrease over time as the fuel distribution infrastructure in Mongolia matures, access to market-priced aviation fuel is critical to the competitiveness of Mongolian carriers and to increasing the access to air services for all Mongolian citizens that lower airfares will provide. It is recommended that the government undertake study of fuel costs and procurement systems to develop the necessary policies and tactics to reduce these costs to air carriers.
10. **Adherence to the liberalization plan.** The critical factor in the success of any plan to liberalize Mongolia's air services will be the adherence to the milestones, schedules and programs adopted under such a plan. While the basic elements of a program to move toward liberalization are highlighted here, the government will need to ensure that programs and plans remain on an agreed schedule so that Mongolia can begin to reap the benefits of liberalization, even on a limited basis, as quickly as possible. This will require initial agreement from all parties involved, including the affected air carriers, and consistent and continual oversight of the process.

OVERVIEW OF THE MONGOLIAN AVIATION MARKET

1. Passenger traffic

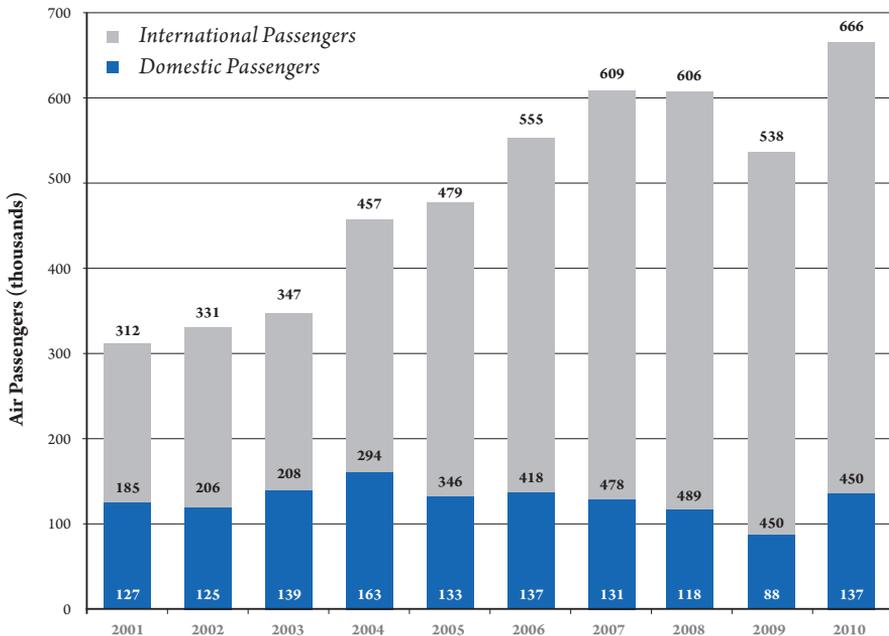
In 2010, total annual air passenger traffic in Mongolia reached 665,803 passengers, as shown in Figure 13. International passenger traffic in Mongolia totaled 529,000 passengers (accounting for 79% of total passenger traffic), while domestic traffic totaled 137,000 passengers (accounting for 21% of total passenger traffic).

Between 2001 and 2007, international passenger traffic has exhibited strong

growth, averaging 17% per annum. In 2008 and 2009, international traffic declined due, in part, to the global economic recession. Traffic volumes recovered strongly in 2010 (up 18% from 2009).

Domestic passenger traffic has been fluctuating over the last decade, reaching its peak in 2004 with 163,000 domestic passengers. Domestic traffic grew by 55% in 2010 relative to 2009.

Figure 13: Domestic and international passenger volumes (2001-2010)



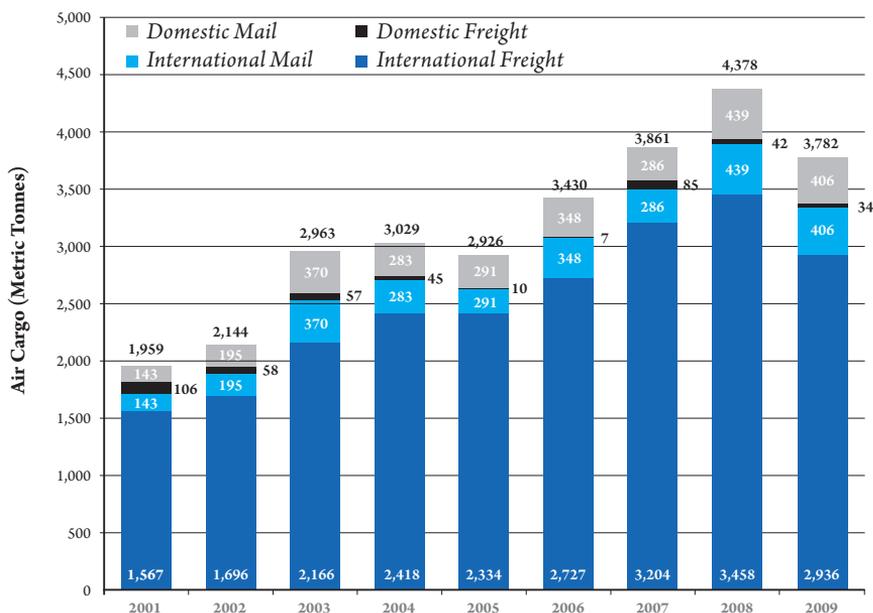
Source: Statistical Bulletin of the Mongolian Civil Aviation Authority.

2. Air cargo traffic

Figure 14 illustrates the historical levels of air cargo traffic in Mongolia, split into international and domestic freight and mail. Air cargo increased by an average rate of 12% per annum between 2001 and 2008. Traffic declined 14% in 2009, with the global recession the likely major cause.

International freight is the largest component of air cargo, accounting for 2,936 tons (77%) in 2009. Including international mail, international air cargo accounted for 3,342 tons (88%) of total air cargo.

Figure 14: Air freight carried (2001-2009)



Source: Statistical Bulletin of the Mongolian Civil Aviation Authority.

3. Major airlines and routes

Mongolia has 23 airports but only 14 have paved runways. Chinggis Khan International Airport (ULN) is the largest airport in the country handling virtually all the country's international traffic and acting as a hub for MIAT Mongolian Airlines (MIAT), Aero Mongolia, and Eznis Airways.²¹ ULN is located about 18 kilometers southwest of the capital Ulaanbaatar, and also accounts for the large

majority of the country's domestic services (ULN acts as a hub for most domestic services to other points in Mongolia; there are a small number of services that connect other airports directly, bypassing ULN).

Figure 15 shows the airline market shares in the domestic market in 2010. Three major Mongolian carriers operate in the domestic market:

²¹ The other airport with scheduled international service is Ölgii Airport with service to Kazakhstan.

- MIAT Mongolian Airlines is Mongolia's national airline, headquartered in Ulaanbaatar. MIAT Mongolian Airlines, founded in 1954, holds a code-share agreement with Korean Air and Aeroflot and operates domestic and international flights from and to ULN. International flights are operated to Moscow, Berlin, Beijing, Seoul, and Tokyo from ULN.²² MIAT now accounts for very little of the domestic market operations, and has carried an increasingly small share of domestic passengers (in 2008, the carrier handled over 13,000 domestic passengers).
- Eznis Airways, founded in 2006, offers scheduled and charter flights and is the largest domestic airline in Mongolia. In summer 2009, the airline also started offering international flights to Hailar in China. A year later in summer 2010, Eznis Airways started international services to Ulan-Ude in Russia.²³
- Aero Mongolia was founded in 2002. The airline offers domestic and international services to 12 domestic destinations and four international destinations (Altai and Irkutsk in Russia, and Urumqi and Hohhot in China).²⁴

Figure 15: Domestic market airline shares in Mongolia (2010)

Airline	2010 Domestic Passengers	
	Passengers	Market Share
Eznis Airways	77,274	56%
Aero Mongolia	59,273	43%
MIAT	281	1%
Total	136,828	100%

Source: Statistical Bulletin of the Mongolian Civil Aviation Authority.

Major domestic destinations served from ULN include Oyutolgoi, Dalanzadgad, Khovd, Tavantolgoi, Ovoot, Ulgii, Murun and Ulaangom.

Figure 16 shows the airline market shares in the international market. National carrier MIAT accounts for 50% of all traffic. Mongolia's other carriers, Eznis Airways and Aero Mongolia, account for about 2% of international traffic. The remaining international traffic is carried by foreign carriers such as Korean Air, Air China, Aeroflot, SCAT (Kazakhstan).

Figure 16: International market airline shares in Mongolia (2010)

Airline	2010 International Passengers	
	Passengers	Market Share
MIAT	266,040	50%
Korean Air	112,073	21%
Air China	82,373	16%
Aeroflot	49,539	9%
Aero Mongolia	8,802	2%
Eznis Airways	5,672	1%
Other	4,476	1%
Total	528,975	100%

Source: Statistical Bulletin of the Mongolian Civil Aviation Authority.

22 MIAT-Mongolian Airlines website. A small number of seasonal services to Hong Kong, Osaka (Japan) and Irkutsk (Russia) are also operated.

23 Eznis Airways website.

24 Aero Mongolia website.

Figure 17 shows passenger traffic on international routes to/from Mongolia in 2010. Seoul (South Korea) is largest international route, operated by MIAT and Korea Air, accounting for nearly 210,000

passengers or 40% of all international traffic. Beijing is the second largest route, followed by Moscow and Narita. These top four routes accounted for 92% of all international traffic in 2010.

Figure 17: Traffic on international routes to/from Mongolia (2010)

Route (and Airlines Operating Route)	2010 International Passengers	
	Passengers	Market Share
Seoul (MIAT, Korea Air)	209,901	40%
Beijing (MIAT, Air China)	193,261	37%
Moscow (MIAT, Aeroflot)	56,841	11%
Narita (MIAT)	26,167	5%
Berlin (MIAT)	16,028	3%
Other China (Eznis, TianJin Airlines)	14,443	3%
Other Japan (MIAT)	3,019	1%
Other Russia (Eznis, Ural Airlines)	1,230	0%
Other	8,085	2%
Total	528,975	100%

Source: Statistical Bulletin of the Mongolian Civil Aviation Authority.

4. Origin and destination markets

The passenger traffic figures in Figure 17 show the volumes of traffic on direct services operated to/from Mongolia. This does not necessarily represent the final origin/destination of the passengers. For example, some passengers flying to Moscow may be making onward connections to Europe. Similarly, some passengers from Seoul may have connected there and actually originated their trip in North America. Figure 18 presents the traffic figures in terms of the final origin/destination (O/D) country of the passengers. The figures are based on travel booking data.

On an O/D basis, the largest markets remain those with direct service: South Korea, China, Japan, Russia, and Germany. The O/D passenger volumes for most of these countries were lower than the route volumes, indicating a significant degree of connecting traffic. For example, route traffic to/from Moscow totaled nearly 57,000, while the number of passengers starting

or ending their journey was only 26,000. This suggests that approximately 31,000 of the passengers to/from Moscow were connecting (e.g., some of passengers may have been travelling to/from Europe). One exception to this is Japan: O/D volumes exceeded route volumes, suggesting some passengers to/from Japan were connecting elsewhere (most likely Seoul). In total, it is estimated that approximately one third of passengers to/from Mongolia were travelling via a connecting point.

A notable unserved market is the U.S., which was the fourth largest O/D market despite the lack of direct service. Other significant unserved markets were in Europe and Asia. The analysis of the booking data also revealed the directionality of travel. Exactly two thirds of passengers were Mongolian residents travelling to and from other countries while one third were foreign visitors to Mongolia.

Figure 18: Top 10 origin/destination markets for Mongolia (2009)

Country	Passengers (Thousands)	% of Total Passengers
South Korea	145	27%
China	133	25%
Japan	48	9%
U.S.	43	8%
Russia	26	5%
Germany	22	4%
France	14	3%
Italy	9	2%
Czech Republic	9	2%
UK	8	1%
Other	72	14%
Total	529	100%

Source: Travelport Bookings Data and Mongolian Civil Aviation Authority.

Note: Traffic figures are based on the final origin or destination of the air passenger, not their immediate connecting point. Figures may not sum up to the totals due to rounding.

5. International air service agreements signed by Mongolia

The Government of Mongolia has executed summary information on nine of those bilateral air service agreements with bilaterals. over 30 foreign states. Figure 19 provides

Figure 19: Key Characteristics of the air service agreements in Mongolia

Country	Authorized Points	Capacity	Pricing	Airline Designation	Fifth Freedom
Finland	Any	Predetermination	Single Disapproval	Dual/Multiple	No
Germany	Unknown	Predetermination	Country of Origin	Dual/Multiple	No
Hong Kong	Named	Predetermination	Single Disapproval	Dual/Multiple	No
India	Unknown	Predetermination	Single Disapproval	Dual/Multiple	No
Japan	Unknown	Predetermination	Single Disapproval	Dual/Multiple	No
Russia	Unknown	Predetermination	Single Disapproval	Dual/Multiple	No
Singapore	Any	Predetermination	Double Disapproval	Dual/Multiple	Yes
Sweden	Unknown	Predetermination	Country of Origin	Dual/Multiple	No
UK	Any	Bermuda	Double Disapproval	Dual/Multiple	No

Source: ICAO World Air Services Agreement Database.

In general, the bilaterals to which Mongolia is a signatory are fairly restrictive in nature, with controls on capacity, pricing, airline designation and fifth freedom operations. It should be noted that governments typically require reciprocity when negotiating the terms of a bilateral. Therefore, it is possible that restrictions within bilaterals are not due to the policies of the Mongolian government but due to the policies of the opposite country.

Figure 20 provides additional information on the specific capacity limits on the

air service agreements with three major markets: China, South Korea, and Japan. The number of allowed flights per week is restricted for all three markets. The Korean market has a flight frequency limit of six flights per week. Since South Korea is Mongolia's top O/D market in terms of passenger numbers, these frequencies are fairly restrictive and regularly violated by giving special permission for additional flights during the summer peak season.²⁵

Figure 20: Capacity limits under bilateral air service agreements for top 3 O/D markets in Mongolia

Country	Capacity Allowed (Flights per Week)	Seat Limit
Korea	6 (special permissions for additional flights during summer)	None (since 2003)
China	28 (14 for Beijing)	None
Japan	5 (3 for Tokyo, 2 for Osaka)	None

Source: Bayarsaikhan S.: "Case of International Air Transport Market"

Since 2008, Mongolia is also a signatory to the MALIAT agreement with Brunei, New Zealand, Singapore, Samoa, Cook Islands, Tonga and the United States but for cargo operations only. In 2009, Mongolia has

also signed a "horizontal agreement" with the EU which, while not open skies, allows carriers greater freedom to operate between points in Mongolia and the EU.²⁶

6. Tourism

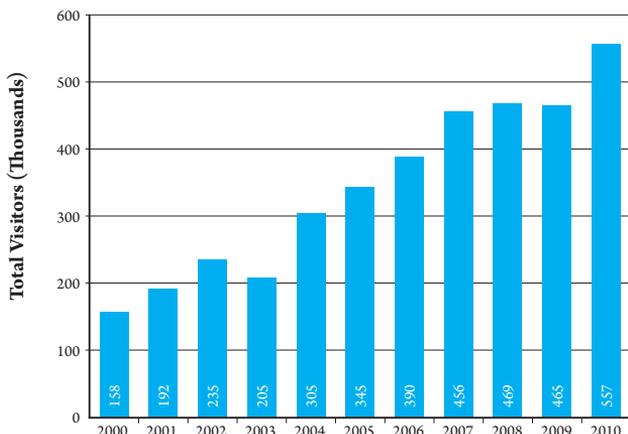
Tourism is a relatively new economic sector with potential to grow substantially. Figure 21 shows the total number of visitors to Mongolia since 2000. Over the last 10 years, international visitor traffic to Mongolia has increased by an average of 13.4% per

annum, reaching 557,414 in 2010. These figures are for visitor arrivals by all modes (i.e., ground and air). Based on the O/D traffic data described in Section 3.4, it is estimated that 17% of visitors arrive by air.

²⁵ Source: Bayarsaikhan S., "Case of International Air Transport Market"

²⁶ A horizontal agreement is an agreement negotiated by the Commission on behalf of the Member States, in order to bring all existing bilateral air services agreements between Member States and a given third country in line with Community law.

Figure 21: Inbound visitors to Mongolia (2000-2010)

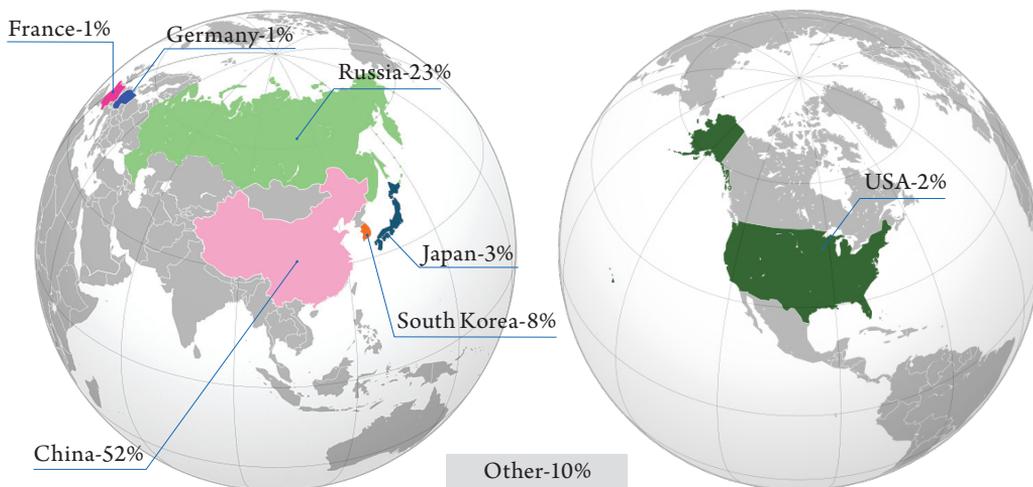


Source: Mongolian National Tourism Center 2010 and Mongolia Bulletin of Statistics, Dec 2010

Figure 22 provides a breakdown of visitors to Mongolia by source country. China accounted for over half (52%) of all visitors in 2010, while Russia accounted for 23%. These two neighboring countries

accounted for three quarters of all visitors in 2010. South Korea is the third largest source market (8%), followed by Japan (3%) and the United States (2%).

Figure 22: Proportion of inbound visitors by country (2010)



Source: Mongolia Bulletin of Statistics, Dec 2010

