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FINAL TECHNICAL REPORT
ECONOMIC IMPACT STUDY - 2005



 **Hartsfield-Jackson
Atlanta International Airport**

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EXECUTIVE SUMMARY

This study examines the 2005 economic impact of the Hartsfield-Jackson Atlanta International Airport (H-JAIA) on metropolitan Atlanta, as defined by the 28-county Atlanta-Sandy Springs-Marietta, Georgia Metropolitan Statistical Area (MSA). Findings in this study were developed by:

1. Surveying airport administration and tenants to quantify on-airport direct employment.
2. Establishing the proportions among air arrivals of visitors, local residents, and travelers using the Airport to connect with flights to other destinations using visitor survey data provided by Airport Interviewing & Research, Inc. For visitors, AIR data were used to establish trip purpose, levels of spending and patterns of spending.
3. Modeling economic impact by adapting the Impact Analysis for Planning (IMPLAN) Modeling Package to the 28-county metropolitan region to (1) develop an economic profile using data primarily from the US Department of Commerce (Bureau of Economic Analysis) and US Department of Labor to estimate jobs, wages, and personal income (direct effect) when one or more of these factors were not available through our data collection; and (2) develop a model of the MSA to represent inter-metropolitan flows of business sales. This includes business orders to suppliers generated by on-airport businesses, off-airport businesses serving airport visitors and Airport-reliant businesses (indirect effects). It also includes business sales generated by the spending of additional workers' income on consumer purchases (induced effects).
4. Analyzing the role of air cargo shipments in the economies of the metropolitan region, as well as Georgia and the nation. This utilized data from H-JAIA, in conjunction with the AIR survey to profile passenger activity and with data from the Foreign Trade Division of the US Census Bureau (packaged by WISERTrade).

CLASSIFICATION OF IMPACTS

The operation of H-JAIA, providing terminal and related services for air travelers and cargo movement, is only one part of the Airport's total regional economic impact. Visitors to the Atlanta area from international and domestic locations use H-JAIA to visit the area for business or leisure, and their spending supports additional business activity within the region. Also, companies in the region that produce manufactured and agricultural goods that are exported by air from Atlanta would be at a disadvantage without proximity to a major international airport. Altogether, these on- and off-site business activities fall into five categories:

- Airport-based economic activities (Airport terminal-related and tenants)
- Off-airport businesses serving Airport travelers
- Off-airport businesses dependent on the Airport for cargo movement
- Suppliers of goods and services to Airport and air-dependent business

- Re-spending of worker income (supported by Airport-based activities, visitor spending, air-dependent businesses, and suppliers of goods and services)

FINDINGS

Employment at H-JAIA increased from 55,313 in 2002 to 56,505 in 2005. This increase of more than 1,000 jobs is consistent with growth of aviation operations, passengers served, and cargo shipped and received at the airport in this period. From 2002 to 2005:

- Ninety thousand more operations were conducted at H-JAIA. Total annual operations increased from just fewer than 890,000 to more than 980,000.
- H-JAIA served nine million additional passengers, with the number of arriving and departing travelers increasing from 76.9 million to 85.9 million.
- Almost 85,000 additional metric tons of air freight and air express cargo flowed through the airport in this time span. The volume of international cargo grew by 26 percent, while the volume of domestic cargo grew by 4 percent. By 2005, H-JAIA ranked as the 5th busiest U.S. airport in terms of total weight of international air cargo handled (incoming and outgoing)¹.

The types of jobs on-airport that showed the largest growth between 2002 and 2005 include retail, freight forwarding, and ground transportation services. Expansion of these sectors is a consequence of the significant

growth in passenger and cargo volumes

TOTAL ECONOMIC CONTRIBUTION

The total economic contribution of H-JAIA to metropolitan Atlanta is the sum of the business activity directly associated with operation of the Airport and the spending of its users, as well as the additional business activity associated with orders to suppliers and re-spending of worker income. These various elements of economic impact are each defined and shown in **Table ES.1**.

In 2005, H-JAIA directly accounted for \$10.6 billion in business activity supporting the 56,505 jobs at the Airport. Off-site business activities that depend directly on local air service for staff movements, cargo deliveries, or customer visits (visitor spending) together raise the direct Airport impact to \$23.5 billion in business sales with approximately 201,000 jobs in metro-Atlanta. There are also indirect and induced multiplier effects associated with suppliers of goods and services to the directly affected businesses, and the re-spending of additional worker income on consumer goods and services. Adding in these effects raises the total economic role of H-JAIA to approximately \$44.8 billion in business sales, which includes \$15.3 billion in wages and proprietors' income, supporting more than 393,000 jobs in the region.

¹ Sources: WISERTrade using data from the US Census Bureau, Foreign Trade Division. Calculations by EDR Group.

Table ES-1

**Summary of Economic Impacts of Hartsfield-Jackson Atlanta International Airport
in Metropolitan Atlanta**

Impact Classification	Revenues	Wages and Salaries	Jobs
I. DIRECT IMPACT: AIRPORT-DRIVEN ACTIVITY			
Airport-Based	\$10,585,985,416	\$3,192,837,815	56,505
Off Site: Supported by Visitor Spending	\$7,731,618,409	\$2,545,603,556	127,229
Off Site: Related Jobs/Air-dependent Firms	\$5,148,914,064	\$1,146,857,644	17,185
<i>Subtotal</i>	<i>\$23,466,517,889</i>	<i>\$6,885,299,015</i>	<i>200,918</i>
II. INDIRECT IMPACT: SUPPLIERS OF GOODS AND SERVICES			
Due to Airport and Related Activities	\$3,437,295,928	\$1,387,528,373	30,784
Due to Visitor Spending	\$2,296,129,441	\$828,870,848	17,531
Due to Related Jobs/Air-dependent Firms	\$2,399,451,877	\$839,542,940	13,856
<i>Subtotal</i>	<i>\$8,132,877,246</i>	<i>\$3,055,942,161</i>	<i>62,171</i>
III. INDUCED IMPACT: RE-SPENDING OF WORKER INCOME			
Due to Airport and Related Activities	\$5,855,033,126	\$2,379,224,338	57,948
Due to Visitor Spending	\$4,988,129,220	\$2,045,087,166	49,026
Due to Related Jobs/Air-dependent Firms	\$2,362,316,832	\$937,159,020	23,038
<i>Subtotal</i>	<i>\$13,205,479,178</i>	<i>\$5,361,470,524</i>	<i>130,012</i>
AIRPORT DIRECT IMPACT	<i>\$23,466,517,889</i>	<i>\$6,885,299,015</i>	<i>200,918</i>
TOTAL REGIONAL IMPACT	<i>\$44,804,874,313</i>	<i>\$15,302,711,700</i>	<i>393,101</i>

CHAPTER ONE

INTRODUCTION AND OVERVIEW

This report provides study findings of the economic impact of Hartsfield-Jackson Atlanta International Airport (H-JAIA). This chapter introduces the study, provides an overview of methodology used, and summarizes the Airport's overall economic contribution to metropolitan Atlanta.

Chapters Two through Five describe the findings of the economic impacts generated by H-JAIA. Chapter Two reports in detail the impacts derived from Airport-based activities. Chapter Three describes the impacts of visitor spending by air arrivals to the metropolitan Atlanta area. Chapter Four reviews the economic contribution of shippers that transport their goods to domestic and international markets via H-JAIA. These shippers are air-reliant, meaning that their businesses rely on air-freight. Chapter Five presents tax impacts of on-airport activities and visitor spending, including key federal aviation taxes, and state and local revenues.

Chapter Six reviews the construction impacts of the Hartsfield-Jackson Development Program (H-JDP). The impacts of the multi-year Development Program are part of on-airport activities reviewed in Chapter Two, and are broken out and discussed separately in this chapter.

Chapters Seven and Eight compare findings of this study to the 2002 economic impact study of H-JAIA and to findings of other major airports.

H-JAIA is the leading passenger airport in the

United States and the 14th² busiest domestic air cargo airport in terms of weight landed. In 2005, over 980,000 aircraft operations were conducted at the Airport, serving almost 86 million incoming and outgoing passengers and moving almost 770,000 metric tons of cargo.³

This report examines the impact of H-JAIA on the economy of metropolitan Atlanta as defined by the 28-county Atlanta-Sandy Springs-Marietta, Georgia Metropolitan Statistical Area (MSA). The MSA encompasses nearly 8,400 square miles, with a population of approximately 4.5 million people and an economy that supports about three million jobs.

The operation of H-JAIA, providing terminal and related services for air travelers and cargo movement, is only one part of the Airport's total regional economic impact. Airport-dependent businesses and airline travelers visiting the area for business or leisure support additional business activity within metropolitan Atlanta. Together, these on- and off-site business activities fall into five categories:

- Airport-based economic activities (Airport terminal-related and tenants)
- Off-airport businesses serving Airport travelers
- Off-airport businesses dependent on the Airport for cargo movement

² Based on FAA data through 2004.

³ Source: www.atlanta-airport.com

- Suppliers of goods and services to Airport and air-dependent business and to off-airport businesses that serve visitors
- Re-spending of worker income (supported by Airport-based activities, visitor spending, air-dependent businesses, and suppliers of goods and services)

The total economic contribution of H-JAIA is the sum of the business activity directly associated with operation of the Airport, the spending of its users, and the additional business activity associated with orders to suppliers and re-spending of worker income. The sum of on-airport activities at H-JAIA, visitor spending by air visitors to the region, and regional exports supported by air cargo amount to nearly \$23.5 billion in business sales, which in turn supports nearly 201,000 direct jobs paying \$6.9 billion in wages.

There are also indirect multiplier effects associated with suppliers of goods and services to directly-affected businesses, and the induced impacts generated by re-spending of additional worker income on consumer goods and services.

Counting direct, indirect, and induced impacts, H-JAIA generates more than 393,000 jobs for metropolitan Atlanta and \$44.8 billion in business revenues, of which \$15.3 billion is personal income. **Table 1.1** summarizes the economic contribution of H-JAIA to the metropolitan Atlanta economy. Sections 1.1 to 1.3 provide a review of the different types of economic impacts generated by the Airport.

1.1 AIRPORT TERMINAL RELATED JOBS

There are 56,505 people who work at H-JAIA, including more than 32,000 employees of passenger airlines that serve the Airport. The breadth of jobs at H-JAIA involves:

- Airlines, both passenger and cargo activities
- Air terminal operation, including security, building maintenance, and facility management
- Public agencies such as the Federal Aviation Administration (FAA), US Customs and Border Protection (CBP), Agriculture, Fish and Wildlife, and Drug Enforcement Agency, as well as Airport administration (including police and fire departments)
- Airline support services, including catering, in-flight entertainment, aircraft handling, fueling, and maintenance
- Freight services, including courier, delivery, customs broker, and trucking
- Concessions, including restaurants, retail stores, and passenger services
- Ground transportation services, including rental car, taxi and limousine service, and bus companies

1.2 OFF-AIRPORT JOBS SERVING AIRPORT TRAVELERS

H-JAIA processed 85.9 million passenger-trips in 2005, representing 42.5 million arrivals, 43.0 million departures, and 400,000 direct transit trips. Arrivals include persons transferring planes to other destinations, residents of the region traveling home, and non-residents coming in to visit the Atlanta area. From the perspective of regional economic impact, transferring passengers spend relatively little money during their short stay at the Airport. Spending within the region by residents returning home also does not count as an economic impact, since residents spend most of their money in the region anyway. Therefore, only visitors bring

significant amounts of new money into the region.

Overall, approximately 3.4 million international passengers plus another 39.1 million domestic passengers came to Atlanta in 2005 via H-JAIA. More than 62 percent of domestic arrivals and 52 percent of international arrivals are either local residents

coming home or making flight connections at H-JAIA for other destinations. Overall, 2005 saw more than 15 million visitors arrive in the Atlanta region through the Airport. (See **Table 1.2.**) These visitors spent almost \$8 billion in the region, on hotels, restaurants, retail purchases, recreation and local travel (taxi, car rental, and public transportation).

Table 1.1

Economic Contribution of H-JAIA to Metropolitan Atlanta

IMPACTS	AIRPORT GENERATED (incl Dev Pgm)	VISITOR INDUSTRY	RELATED JOBS	TOTAL IMPACT
Jobs				
Direct	56,505	127,229	17,185	200,918
Indirect	30,784	17,531	13,856	62,171
Induced	<u>57,947</u>	<u>49,026</u>	<u>23,038</u>	<u>130,012</u>
Total Jobs	145,236	193,786	54,079	393,101
Business Revenue (\$Mil)				
Direct	\$10,585.9	\$7,731.6	\$5,148.9	\$23,466.5
Indirect (Local Purchases)	\$3,437.3	\$2,296.1	\$2,399.5	\$8,132.9
Induced (Labor Re-spending)	<u>\$5,855.0</u>	<u>\$4,988.1</u>	<u>\$2,362.3</u>	<u>\$13,205.4</u>
Total Business Revenue	\$19,878.2	\$15,015.8	\$9,910.7	\$44,804.8
Personal Income (\$Mil)				
Direct	\$3,192.8	\$2,545.6	\$1,146.9	\$6,885.3
Indirect	\$1,387.5	\$828.9	\$839.5	\$3,055.9
Induced	<u>\$2,379.2</u>	<u>\$2,045.1</u>	<u>\$937.2</u>	<u>\$5,361.5</u>
Total Personal Income	\$6,959.5	\$5,419.6	\$2,923.6	\$15,302.7
Avg Income/Employee (\$/yr)				
Direct	\$56,505	\$20,008	\$66,737	\$34,269
Indirect	\$45,073	\$47,280	\$60,589	\$49,154
Induced	\$41,058	\$41,714	\$40,678	\$41,238
Weighted Avg Income/Employee	\$47,919	\$27,967	\$54,060	\$38,928
Atlanta MSA Avg Income/Employee	\$39,274	\$18,475	\$44,310	\$39,274

Sources: Interviews of tenants and Airport administration; AIR; US Department of Commerce provided by IMPLAN; and WISERTrade using data from the US Census Bureau, Foreign Trade Division. Calculations by EDR Group.

Table 1.2

2005 Non-Local Visitors to Metropolitan Atlanta Arriving through H-JAIA			
	Business Travelers	Leisure Travelers	Total
Domestic	7,983,198	6,254,029	14,237,227
International	431,436	582,234	1,013,670
Total	8,414,634	6,836,263	15,250,897

Sources: www.atlanta-airport.com and AIR. Calculations by EDR Group.

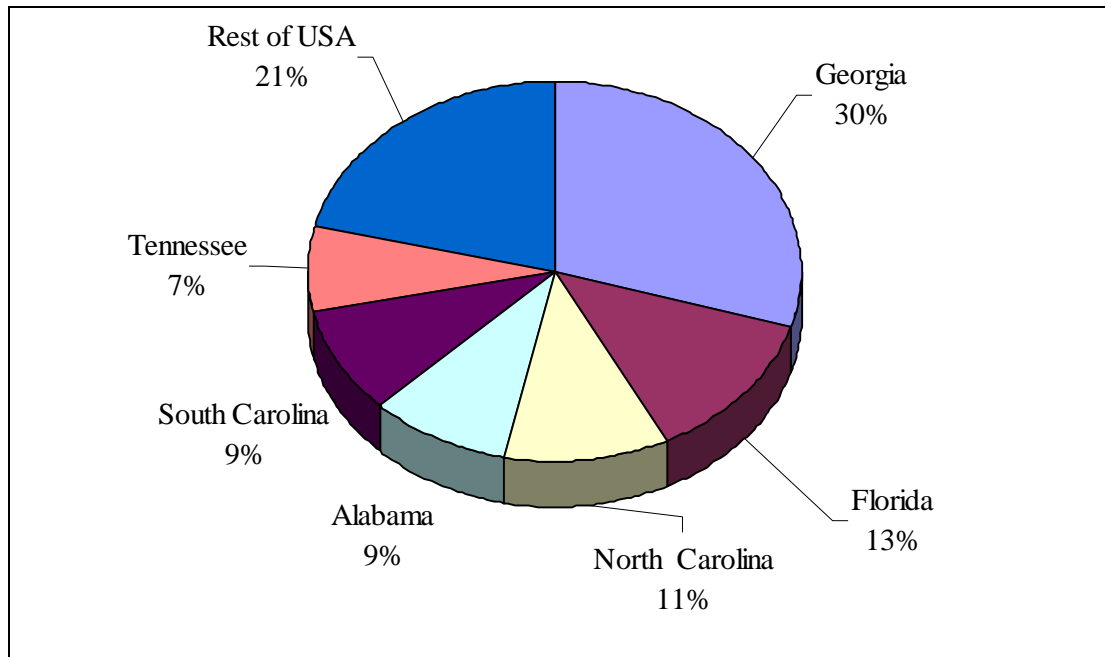
1.3 RELATED INDUSTRIES: JOBS THAT RELY ON AIR CARGO

In 2005, manufactured and agricultural goods weighing a total of 327,000 metric tons were exported to international and domestic destinations from H-JAIA, and the total value was roughly \$28 billion. Of this total value, roughly 30 percent originated in the state of Georgia of which 19 percent originated within the Atlanta metropolitan area.

In terms of air cargo, the significance of H-JAIA is felt throughout the southeast United States. As shown in **Figure 1-1**, goods originating in six states accounted for approximately 79 percent of the value of air cargo exported from H-JAIA, and the rest of the U.S. accounted for about 21 percent of exports from the Airport.

Figure 1-1

2005 Exports from H-JAIA by Percent of Total Value



Sources: WISERTrade using data from the US Census Bureau, Foreign Trade Division. Calculations by EDR Group.

1.4 METHODOLOGY FOR THE ANALYSIS OF OVERALL ECONOMIC IMPACTS

Airport jobs and commerce on the Airport premises create strong economic stimuli for the area. This Airport business activity itself stimulates an increased demand for other local goods and services. Not only do the businesses based on the Airport pay local and state taxes, but the off-airport businesses that depend upon airport-based activity pay taxes as well. This multiplier effect has a strong overall impact on the economy.

The discussion of total impacts is based on the following analyses:

- (1) **A survey of all Airport tenants and the Airport Administration.** This research provided profiles of on-airport jobs by establishment and type of business activity.
- (2) **Surveys of Airport travelers, conducted in 2005 by AIR⁴.** The survey provided profiles of trip purpose, international or domestic origin, segmentation of visitors from local residents and connecting passengers, and amount of money spent by visitors using the Airport.
- (3) **Data from H-JAIA and WISERTrade using data from US Census Bureau, Foreign Trade Division⁵ to develop a detailed profile of air exports from H-JAIA by commodity and origin of**

⁴ Airport Interviewing and Research, Inc., 07/2004, H-JAIA Airport Survey.

⁵ The World Institute for Strategic Economic Research (WISERTrade) was formed July 1, 2004 to continue the international trade data work of its predecessor, MISER, which closed its doors at the University of Massachusetts on June 30th. In 1988, MISER was chosen by the US Census Bureau to be one of its first Business and Industry Data Centers with special focus on foreign trade statistics. See www.wisertrade.org.

movement. Detailed data are only available for international trade from the Census Bureau. Therefore, the detailed commodity flows found in the census data were expanded proportionally based on the relationship of total exports from H-JAIA.

- (4) **Econometric models for the 28-county MSA and the state of Georgia based on the IMPLAN Economic Model System.** IMPLAN was used to estimate wages and sales (or budget expenditures for public entities) for Airport tenants, where only employment totals were available. The ratios of personal income and sales/expenditures per worker are derived primarily from US Department of Commerce and Department of Labor data sets, and are county-specific. IMPLAN was also used to derive multiplier effects, including business orders to suppliers, generated by on-airport businesses, off-airport businesses serving Airport visitors and airport-reliant businesses, and business sales generated by the spending of the additional workers income on consumer purchases. These indirect impacts are described below.

1.4.1 Suppliers of Goods and Services (Indirect Multiplier Effects)

Orders from Businesses at the Airport

Activities occurring at the Airport generate additional orders for goods and services from suppliers. These include orders for:

- Printing and publishing for the Airport operator and the airlines
- Banking, insurance, legal, accounting, and technical services for Airport businesses
- Off-site bus and parking services for Airport employees

- Food products for airport restaurants
- Wholesale merchandise to be sold by airport stores
- Furniture and equipment for offices, hotels, restaurants, and stores located at the Airport.

- Purchases of services such as haircuts, cleaning, car repair, and insurance

This re-spending of income supports additional jobs within the metropolitan Atlanta region.

Orders from Off-Airport Businesses Serving Air Travelers

Activities serving air travelers outside of the Airport also generate additional orders for goods and services from suppliers. These include orders for:

- Fueling and maintenance services for use by off-airport taxis, rental cars, tour buses, and public transportation

Construction and support operations of convention and hospitality facilities for convention visitors

- Food products for off-airport restaurants
- Wholesale merchandise to be sold by off-airport stores
- Furniture and equipment for off-airport hotels, restaurants, and stores

1.5 RE-SPENDING OF WORKER INCOME (INDUCED MULTIPLIER EFFECTS)

The workers at H-JAIA, at off-airport businesses serving air visitors and at supplier businesses, earn income, and most of that income is re-spent on consumer purchases, including:

- Retail purchases of food, clothing, home furnishings, cars, stereos, computers, and other products

CHAPTER TWO

IMPACTS FROM ON-AIRPORT ACTIVITIES

2.1 DIRECT EMPLOYMENT

In 2005, 56,505 people were employed at H-JAIA, according to data from the surveys of Airport management and tenants. In addition to the 32,357 employees of passenger airlines, the Airport supports a wide variety of other aviation-related jobs in transportation, retail, and government services. These jobs involve:

- Freight services, including dedicated cargo aviation, courier, delivery, custom broker and trucking
- Air terminal operations, including security, building maintenance, and facility management
- Airline support services, including catering, in-flight entertainment, aircraft handling, fueling, and maintenance
- Concessionaire services, including restaurants and retail stores
- Ground transportation, including rental car and public bus transportation

Figure 2-1 shows the distribution of jobs at H-JAIA by major function. Sixty percent of Airport jobs are with passenger airlines that use H-JAIA and aviation support services, including catering firms and Fixed Base Operators (FBOs). A variety of government agencies, including the City of Atlanta, federal agencies such as the FAA and the Transportation Security Administration (TSA), and administrative functions including

janitorial services and skycaps account for 12 percent of on-airport employment. Terminal concessions, ground transportation, and freight services account for 7, 8, and 9 percent, respectively, of employment. Construction and consulting services make up 4 percent of the total.

2.2 OUTPUT AND WAGES

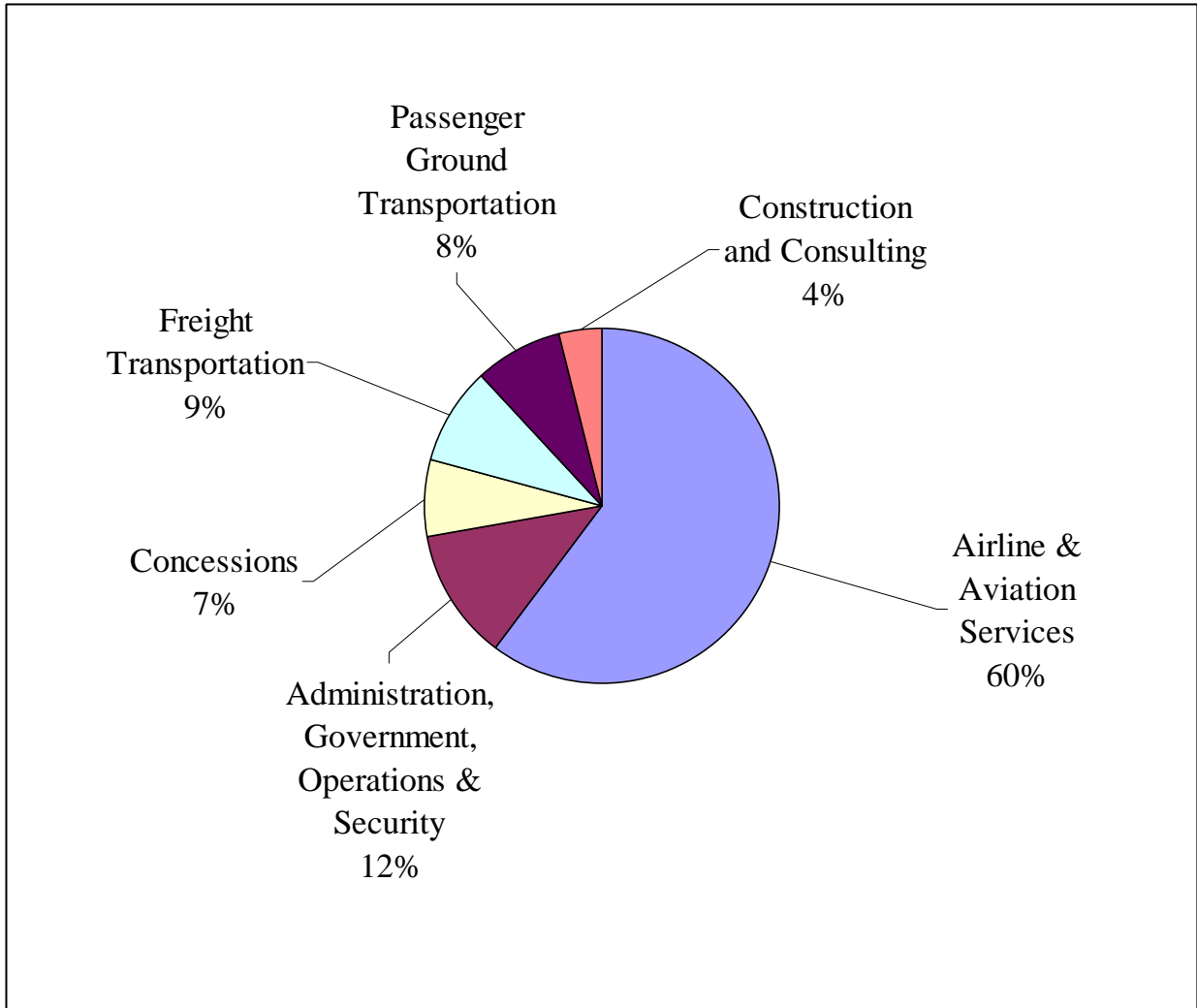
In 2005, industries and sectors⁶ at H-JAIA generated \$10.6 billion of business revenues (business sales and government budget expenditures)⁷. This included \$3.2 billion of personal income earned by the 56,505 workers at H-JAIA (See **Figure 2-2**). The average personal income of on-airport workers was \$56,505, substantially higher than the average personal income of \$39,274 in the Atlanta MSA. These data are based on an exact count of workers at the Airport. Revenue and personal income were calculated based on average revenues per worker and average earnings per worker from US Department of Commerce data for the MSA data reported by IMPLAN. To derive these averages, on-airport employment was categorized into 17 economic sectors, with sector composed of one to five industry sectors (a total of 42).

6 In general usage, a sector is a collection of industries that fall within a major division.

7 The U.S. Department of Commerce classifies industries in a hierarchy of 19 major divisions under the North American Industrial Classification System (NAICS).

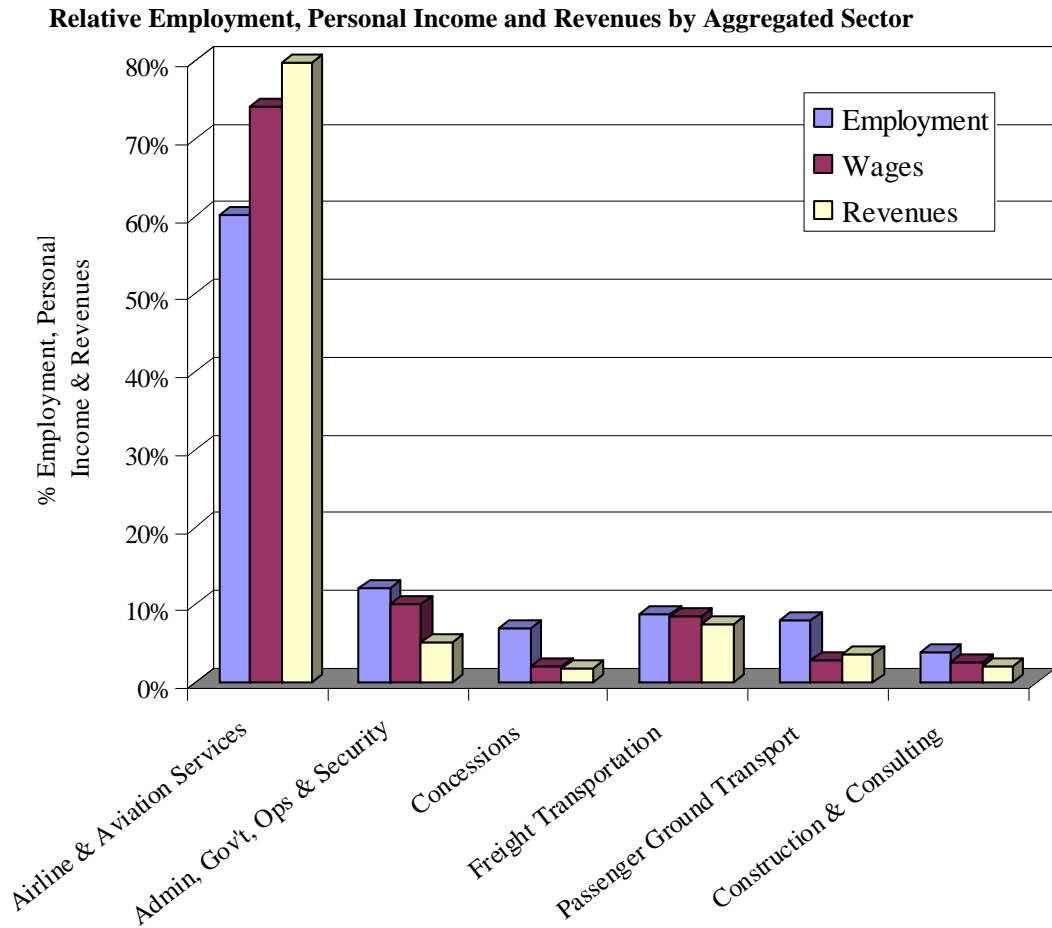
Figure 2-1

Distribution of On-Airport Jobs



Sources: Interviews of tenants and Airport administration.

Figure 2-2



Sources: Interviews of tenants and Airport administration, US Department of Commerce provided by IMPLAN. Calculations by EDR Group.

Findings from this analysis show that passenger airlines represent 60 percent of employment at H-JAIA, but also account for 74 percent of personal income earned by workers and 80 percent of revenues generated on the Airport. Airlines and Aviation Services is the only sector that shows a higher ratio of personal income, and productivity (revenues) than employment at H-JAIA at this aggregated employment, personal income, and revenue by aggregated sectors to the percent of revenue by sector.

2.3 INDIRECT AND INDUCED IMPACTS

The direct economic activities at H-JAIA lead to additional downstream impacts on suppliers, as well as re-spending of worker income. To calculate the impacts of these effects, indirect and induced multipliers were calculated for each of the 18 categories listed in **Table 2.1**.

Table 2.1

Direct Employment, Personal Income, and Business Revenues at H-JAIA

Classification of Activity by Type of Service	Employment	Personal Income	Revenues
Passenger Services and Airport Administration			
Passenger Airlines (excluding freight)	32,357	\$2,298,482,221	8,264,726,740
Catering Firms (non-airline owned)	634	\$9,076,687	\$30,946,953
FAA/TSA/INS/USPS	2,307	\$188,022,901	\$231,806,303
City of Atlanta Dept of Aviation	891	\$35,233,425	\$62,065,569
Airport Food and Beverage Concessions	2,621	\$37,523,653	\$127,936,851
Airport Retail Store Concessions	1,276	\$26,561,778	\$69,680,134
FBOs and Other Gen Aviation and Av. Svcs	997	\$55,262,910	\$155,216,678
Janitorial and Cleaning Services	1,495	\$28,886,605	\$82,051,964
Security Firms and Skycaps	1,287	\$36,078,735	\$65,127,653
Parking and Misc (i.e., non-profit orgs)	655	\$11,572,353	\$75,760,275
Sub Total	44,520	\$2,726,701,269	\$9,165,319,120
Freight Transportation Services			
Freight Airlines and Couriers	2,180	\$123,544,735	\$387,600,104
Freight Forwarders/Area Common Carriers	2,782	\$145,233,716	\$406,439,559
Mail	261	\$21,271,549	\$26,224,886
Sub Total	5,223	\$290,050,000	\$820,264,549
Passenger Ground Transportation Services			
Rental Cars	1,667	\$55,792,148	\$290,754,500
Taxis	841	\$9,974,779	\$30,624,317
Limos/Buses/Vans/Transit	2,033	\$24,112,634	\$74,030,009
Sub Total	4,541	\$89,879,561	\$395,408,826
Contract Construction and Consulting			
Capital Construction	1,725	\$60,977,946	\$154,067,371
Consulting and Engineering Projects	496	\$25,229,038	\$50,925,550
Sub Total	2,221	\$86,206,984	\$204,992,921
Total--Airport-Based	56,505	\$3,192,837,815	\$10,585,985,416

Sources: Interviews of tenants and Airport administration, US Department of Commerce provided by IMPLAN. Calculations by EDR Group.

In 2005, direct economic activities on-airport generated indirect and induced impacts of \$9.3 billion in business revenues in the Atlanta region, supporting 89,000 jobs and \$3.8 billion in personal income. The total economic contribution of H-JAIA to metropolitan Atlanta totaled roughly \$19.9 billion in revenues, yielding 145,000 jobs and almost \$7 billion in workers' wages and

proprietors' income (See **Table 2.2**). Suppliers of goods and services generated approximately \$3.4 billion in revenues, approximately 30,800 jobs, and \$1.4 billion of personal income (indirect impacts). The re-spending of personal income supported approximately 58,000 additional jobs, nearly \$2.4 billion in personal income, and generated almost \$5.9 billion in new business sales.

Table 2.2

Summary of Direct, Indirect, and Induced Economic Impacts of H-JAIA Based Activities in the Atlanta MSA

ECONOMIC IMPACTS	Business Revenues	Personal Income	Jobs
I. Direct Impact: Airport-Driven Activity			
Airport-Based	\$10,585,985,416	\$3,192,837,815	56,505
II. Indirect Impact: Suppliers of Goods and Services			
Due to Airport and Related Activities	\$3,437,295,928	\$1,387,528,373	30,784
III. Induced Impact: Re-Spending of worker Income			
Due to Airport and Related Activities	\$5,855,033,126	\$2,379,224,338	57,948
Total Regional Impact	\$19,878,314,470	\$6,959,590,526	145,237

Sources: Interviews of tenants and Airport administration, US Department of Commerce provided by IMPLAN. Calculations by EDR Group.

CHAPTER THREE

VISITOR SPENDING AND ASSOCIATED JOBS

In 2005, roughly 36 percent of domestic and international air travelers arriving at H-JAIA were non-residents visiting the region (representing 15.3 million of the 42.8 million enplanements at the Airport, excluding direct transit trips). Surveys of air travelers indicate that 7 percent were international visitors and 93 percent were visitors from other parts of the United States. Overall, 55 percent of visitors traveled for business reasons and 45 percent were traveling for leisure or personal reasons (See **Figure 3-1**).

3.1 VISITOR SPENDING

The survey of arriving visitors found that on average, business visitors stayed 1.8 nights and spent \$613 in the region during that visit and leisure travelers on average stayed 1.6 nights and spent \$445 in the region. Although this varied according to domestic/international status, business travelers spent more per visit than other visitors to the Atlanta region (See **Figure 3-2**).

Overall, visitor spending amounted to \$8.2 billion. Roughly \$400 million was for ground transportation at H-JAIA, including car rentals, taxi cab rides and other service which are counted in Chapter Two, On-Airport Impacts. Therefore, revenues derived from on-airport spending, including ground transportation were netted out of visitor spending totals to avoid double-counting.

Visitors generated more than \$7.7 billion of business sales off-airport in the region, on hotels, restaurants, retail purchases,

recreation, and local travel. The breakout of this spending by sector is shown in **Table 3.1**.

3.2 JOBS AND INCOME GENERATED BY OFF-AIRPORT VISITOR SPENDING

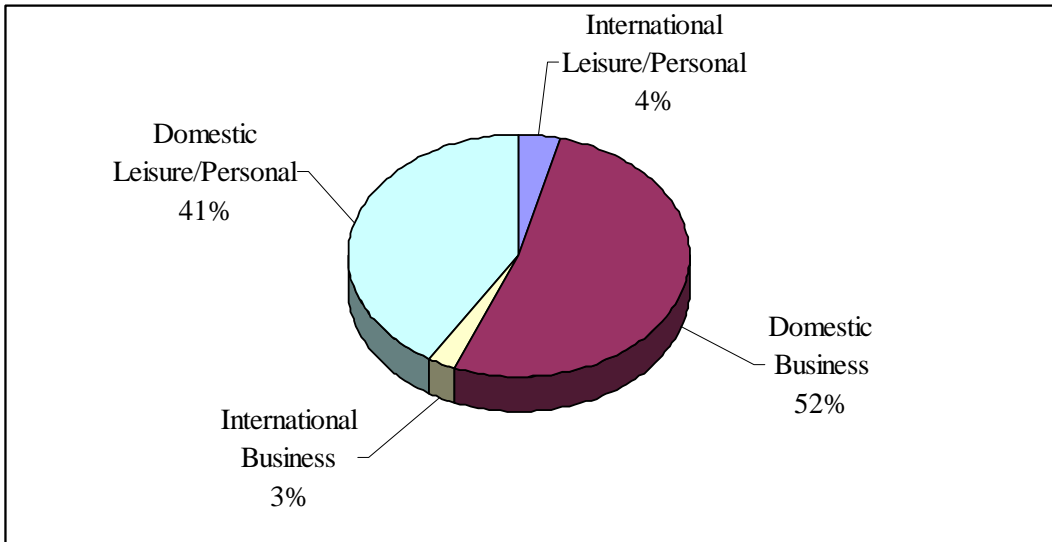
The \$7.7 billion spent in 2005 by visitors arriving via H-JAIA supported more than 127,000 jobs and approximately \$2.5 billion in personal income within metropolitan Atlanta, as shown below in **Table 3.2**.

To calculate direct jobs and wages from visitor spending, the IMPLAN modeling package was tailored to the 28-county metropolitan Atlanta region to build profiles of each of the six sectors shown in **Table 3.3** (hotel, restaurants and bars, entertainment, retail, local transportation, and travel agents).⁸ The second step was developing ratios of business sales (the actual visitor spending) to worker, and personal income to worker in each of the six sectors. These ratios are illustrated in **Figure 3-3**. With the development of these ratios, employment, and personal income (earnings) were calculated by (1) dividing business sales by the ratio of jobs to output; and (2) multiplying jobs by the ratio of personal income per job, as shown in the formulas below:

⁸ IMPLAN packages data from federal agencies on a county basis, including the US Dept. of Commerce and the US Dept. of Labor. EDR Group developed the sectors that reflect visitor spending and aggregated the 28 counties to build the MSA region.

Figure 3-1

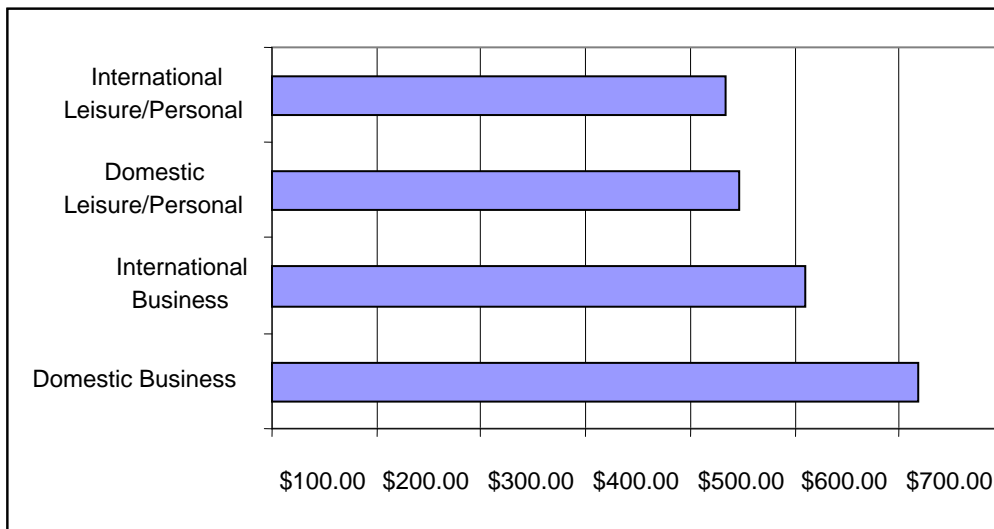
Profile of Air Visitors to Metropolitan Atlanta



Source: AIR. Calculations by EDR Group.

Figure 3-2

Relative Spending Per Visitor Trip by Classification



Source: AIR. Calculations by EDR Group.

Table 3.1

Off-Airport Spending in Metropolitan Atlanta By Air Visitors Arriving via H-JAIA
(Dollars are rounded to thousands)

Business Sectors	Net Off-Airport Spending
Hotel	\$2,872,931,000
Restaurants and Bars	\$1,361,514,000
Entertainment	\$845,184,000
Retail	\$1,916,849,000
Local Transportation	\$735,140,000
Total Spending	\$7,731,618,000

Source: AIR. Calculations by EDR Group.

Table 3.2

Jobs and Personal Income Generated by Air Visitors
(Dollars are rounded to thousands)

Business Sectors	Jobs	Personal Income
Hotel	38,426	\$931,394,000
Restaurants and Bars	27,893	\$399,330,000
Entertainment	15,936	\$366,167,000
Retail	37,303	\$757,724,000
Local Transportation	7,672	\$90,989,000
Sub Total	127,229	\$2,545,604,000

Note: Jobs include employees and proprietors. Personal Income includes wages and profits.
Source: AIR. Calculations by EDR Group.

Table 3.3

Ratios of Output and Earnings per Worker by Visitor Industry Sector

Sector	Earnings Per Worker	Sales/ Worker
Hotel	\$24,239	\$74,766
Restaurants and Bars	\$14,316	\$48,812
Entertainment	\$22,978	\$53,037
Retail	\$20,313	\$51,386
Local Transport	\$11,861	\$36,414

Note: Personal income includes wages and profits of local business owners.
Sources: AIR, US Departments of Commerce and Labor data.
packaged by IMPLAN. Calculations by EDR Group.

Figure 3-3

Ratios of Output and Earnings per Worker by Visitor Industry Sector



Step 1. Employment Generated by Visitor Spending = **Sum of** (visitor spending per sector) divided by (average of regional business sales per worker per sector)

Step 2. Personal Income Generated by Visitor Spending = **Sum of** (employment per sector as calculated in Step 1 above) times (average of regional personal income per worker per sector)

3.3 INDIRECT AND INDUCED IMPACTS

Activities serving air travelers or visitors outside of the Airport also generate additional orders for goods and services from suppliers. These include orders for:

- Fueling and maintenance services for use of off-airport taxis, rental cars, tour buses, and public transportation
- Construction and operations of conventions and hospitality facilities for convention visitors
- Food products for off-airport restaurants
- Wholesale merchandise to be sold by off-airport stores
- Furniture and equipment for off-airport hotels, restaurants, and stores

Jobs attributable to off-airport businesses serving air visitors generated \$2.5 billion in personal income in 2005 that was then spent on consumer purchases, including:

- Retail purchases of food, clothing, home furnishings, cars, etc.
- Purchases of services, houses, and other investment activities.

In 2005, the indirect and induced effects of spending by air visitors to the Atlanta region generated \$7.3 billion in business revenues in the Atlanta region in addition to the \$7.7 direct visitor spending reported in Table 3.1 above. These additional impacts supported 67,000 additional jobs (in addition to the 127,229 jobs from direct visitor spending),

which paid \$2.9 billion in personal income. The total economic contribution of visitors arriving through H-JAIA from direct, indirect and induced effects totaled almost \$15 billion in revenues, yielding 193,800 jobs and \$5.4 billion in workers' wages and proprietors' income (See **Table 3.4**). Suppliers of goods and services (indirect impacts) generated approximately \$2.3 billion of revenues, approximately 18,000 jobs and close to \$829 million of personal income. The respending of earnings (induced impacts) supported almost \$5 billion of revenues, along with 49,000 jobs and \$2 billion in personal income.

Table 3.4
**Summary of Direct, Indirect, and Induced Economic Impacts of the
 Contribution of Visitor Spending in the Atlanta MSA**

ECONOMIC IMPACTS	Business Revenues	Personal Income	Jobs
I. Direct Impact: Visitor Spending Activity			
Direct Visitor Spending	\$7,731,618,409	\$2,545,603,556	127,229
II. Indirect Impact: Suppliers of Goods and Services			
Due to Visitor Spending Off-Airport	\$2,296,129,441	\$828,870,848	17,531
III. Induced Impact: Re-Spending of Worker Income			
Due to Visitor Spending Off-Airport	\$4,988,129,220	\$2,045,087,166	49,026
Total Regional Impact	\$15,015,877,070	\$5,419,561,570	193,786

Sources: Interviews of tenants and Airport administration, US Department of Commerce provided by IMPLAN. Calculations by EDR Group.

CHAPTER FOUR

IMPACTS OF RELATED USERS (FREIGHT SHIPPERS)

For this study, “related users” are defined as manufacturers and agricultural industries that ship products by air through H-JAIA.⁹ The effects of the internet, globalization of the economy, and changing manufacturing processes have influenced the nature of business. Businesses have become more time-sensitive and, consequently, are increasingly dependent on Airport services for time-sensitive delivery of goods.

4.1 ROLE OF H-JAIA IN AIR EXPORTS

H-JAIA draws cargo customers from throughout the United States and is particularly important to the southeast. Data from the U.S. Census’ Foreign Trade Division Origin of Movement Series shows that manufactures and agricultural products are shipped to Atlanta from all sections of the United States for export to international destinations. In 2005, the total value of international goods shipped from H-JAIA was \$11.6 billion, and the value of goods that originated in Georgia was \$3.425 billion. As shown in **Table 4.1**, in 2005 goods originating in six states accounted for almost 80 percent of the value of air cargo exported from H-JAIA, and the rest of the country accounted for about 21 percent of exports from the Airport.

The 14 leading commodities exported through H-JAIA are profiled in **Table 4.2**. Together,

these commodities account for 95 percent of the value of exports from H-JAIA that originate nationally and 98 percent of exports originating from the Atlanta MSA. The most valuable four exports, industrial machinery including computers; electric machinery; sound and television equipment; and associated parts and optical, medical and other scientific instruments, represent 74 percent of goods exported through the Airport and 81 percent of air cargo that originate in the MSA and are exported through H-JAIA.

Assessing the Airport’s economic contribution in its role as an engine for exporting goods manufactured in Georgia and metropolitan Atlanta requires three assumptions that are listed below. The calculations derived from these assumptions are shown in **Table 4.3**.

1. Domestic and international cargo shipments in the course of a year include the same types and proportions of commodities, and thus imply the same source industries. Air value and air-weight data by commodity are available from the Census Bureau for international exports. In 2005, 135,640 metric tons of cargo¹⁰ were exported from H-JAIA to international destinations, and 326,898 metric tons departed for all international and domestic destinations combined. Approximately 1.41 metric tons are exported to domestic destinations for every ton of international exports. The pattern of commodities was held constant

⁹ This definition is based on past H-JAIA Economic Impact Studies.

¹⁰ Other than mail.

- and the value of each international export was multiplied by 2.41.
2. The 2005 national pattern of exports from H-JAIA is similar to the pattern of exports originating from Georgia. The “Origin of Movement Series” lists total value and weight by state of origin and port of export, but does not list commodities.
 3. The origin of movement export series is not available by sub-state totals from the Bureau of the Census. Therefore, the sizes of Georgia industries that exported through H-JAIA were compared with the sizes of the same industries in the MSA to impute a total value of goods that originate in the MSA and are exported via the Airport.

Table 4.1
Percent of Value of International Air Cargo Exported Through H-JAIA

State of Origin	Percent of Exports
Georgia	29.6%
Florida	13.0%
North Carolina	10.8%
Alabama	9.2%
South Carolina	9.0%
Tennessee	7.2%
Rest of USA	21.2%
Totals	100%

Table 4.2
Fourteen Leading Commodity Groups Exported through H-JAIA

• Industrial machinery, including computers	• Vehicles, except railway, associated parts
• Electric machinery; sound & tv equip; assoc parts	• Live animals
• Optic, photo, medic or surgical instruments	• Leather art; saddlery; handbags
• Aircraft, spacecraft, and parts thereof	• Glass and glassware
• Pharmaceutical products	• Articles of iron or steel
• Chemicals	• Essential oils etc; perfumery, cosmetics
• Plastics and articles thereof	• Printed books, newspapers; manuscripts

Source: WISERTrade using data from the US Census Bureau, Foreign Trade Division.

Table 4.3
Estimated Value of International and Domestic Air Exports from H-JAIA

Point of Origin	Total Value
National Total	\$27,876,487,634
Georgia Total	\$8,255,209,991
Atlanta MSA Total	\$5,148,930,590

Sources: WISERTrade using data from the US Census Bureau, Foreign Trade Division. IMPLAN packages using US Department of Commerce Data for Georgia and the 28 MSA counties. Calculations by EDR Group.

Note: Each value represents the total within the stated geography.

4.2 ESTIMATING THE ECONOMIC CONTRIBUTION OF THE ROLE OF AIR EXPORTS FROM H-JAIA TO THE MSA

and 616,000 jobs nationally.

Roughly \$5.1 billion of manufactured and agricultural products estimated to originate in the Atlanta region are exported by air from H-JAIA. These exports support 17,185 direct jobs and approximately \$1.1 billion in personal income within metropolitan Atlanta, as shown below in **Table 4.4**.

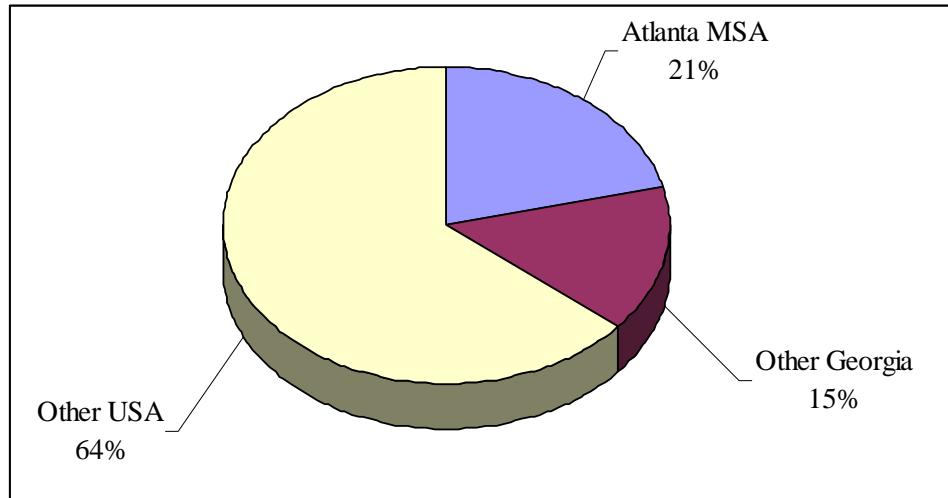
As with visitor spending, discussed in Chapter Three, calculations of direct jobs and personal income were derived using average regional personal income and sales per sector. First, the commodities shipped from H-JAIA were aggregated into 16 sectors. To calculate employment, the value of shipments for each sector was divided by the average personal income per sector and summed. To develop business sales per worker, employment per sector as calculated above was multiplied by the average business sales per sector and summed. The commodity to sector aggregation and average income and sales per sector are shown in the review of methodology in Appendix II.

Production of goods exported via H-JAIA in 2005 required approximately 17,000 workers in the Atlanta MSA, 29,000 in Georgia and about 78,000 nationally¹¹, as shown by percentage in **Figure 4-1**. Including both indirect and induced effects, as well as direct workers, air cargo shippers supported 54,000 jobs in the Atlanta MSA, 99,000 in Georgia

11 The 17,000 jobs in the MSA and possibly the 29,000 jobs in Georgia are highly-dependent on H-JAIA. If the Airport did not have the freight capacity to serve industries dependent on air cargo, it is likely that a substantial portion of companies in these industries would locate elsewhere. The national numbers are provided for illustration purpose. Other airports would be used if H-JAIA were not available for freight.

Figure 4-1

Distribution of Direct Jobs in Air-Reliant Export Shipped from H-JAIA, by Percent



Sources: H-JAIA, WISERTrade using data from the US Census Bureau, Foreign Trade Division. IMPLAN packages using US Department of Commerce Data for Georgia and the 28 MSA counties. Calculations by EDR Group.

Table 4.4

Summary of Direct, Indirect and Induced Economic Impacts of the Value of Goods Produced in the Atlanta MSA and Shipped From H-JAIA

ECONOMIC IMPACTS	Business Revenues	Personal Income	Jobs
I. Direct Impact: Airport Supported Exports			
Economic Contribution of Shippers in the MSA	\$5,148,914,064	\$1,146,857,644	17,185
II. Indirect Impact: Suppliers of Goods and Services			
Business to Businesses Sales Made by Air Reliant Shippers and Their Suppliers	\$2,399,451,877	\$839,542,940	13,856
III. Induced Impact: Spending of Worker Income			
Due to Consumer Purchases	\$2,362,316,832	\$937,159,020	23,038
Total Regional Impact	\$9,910,682,773	\$2,923,559,604	54,079

Sources: H-JAIA, WISERTrade using data from the US Census Bureau, Foreign Trade Division. IMPLAN packages using US Department of Commerce Data for Georgia and the 28 MSA counties. Calculations by EDR Group.

CHAPTER FIVE

TAX IMPACTS GENERATED BY ACTIVITIES AT H-JAIA

The income and business sales produced by economic activities at H-JAIA in turn generate federal, state, county and municipal tax revenues. This chapter presents estimates of state and local tax impacts from airport activities, as well as federal aviation taxes derived from aviation services.¹²

5.1 STATE AND LOCAL TAX IMPACTS

As seen in **Table 5.1**, state and local tax revenues traceable to operations at H-JAIA totaled about \$1.4 billion in 2005, including \$626 million from direct activities and \$810 million from resulting indirect and induced effects. These estimates are based on effective tax rates¹³ calculated from data provided by the Georgia Department of Revenue and the Tax Foundation against personal income generated by H-JAIA activities.¹⁴

12 Data developed in this chapter should be considered estimates and as an order of magnitude. As in previous studies of this airport, tax impacts are derived from per-capita measures.

13 “Effective tax rates” are the percents of tax revenues to income. These are different than nominal tax rates because effective rates account for exemptions and abatements on a gross scale. Effective tax rates were constructed for state, municipal and county revenues based on Department of Revenue and Tax Foundation tax data for Georgia and income data for the MSA from the U.S. Bureau of Economic Analysis. These rates were then applied to personal income generated by H-JAIA to estimate total tax impacts.

14 The 2004 Statistical Report is the most recently

Appendix IV includes a breakout of tax revenues to counties and selected cities in the Atlanta MSA. from on-airport generated activities.

5.2 FEDERAL AVIATION TAXES

Aviation operations at H-JAIA yield an additional \$1.25 billion in federal taxes, including about \$577 million from taxes on passengers and \$676 million of U.S. Customs revenues from air-freight shipments (See **Table 5.2**). These tax revenues are remitted to the federal treasury and do not directly benefit metropolitan Atlanta or the State of Georgia.

available as of this writing. Statistical reports from 2000 are available on <http://www.etax.dor.ga.gov>. 2005 local and state revenues per capita are available for all 50 states from the Tax Foundation, www.taxfoundation.org/taxdata. However, Tax Foundation Data do not separate municipal and county revenues.

Table 5.1
Estimated 2005 State and Local Tax Impacts (in \$Millions)

Jurisdiction	Revenues from Direct Activities	Revenues from Indirect and Induced Effects	Total Revenues
State	\$251.0	\$325.2	\$ 576.2
Municipal	\$220.6	\$285.8	\$ 506.4
County	\$154.4	\$200.0	\$ 354.4
Totals	\$626.0	\$810.9	\$1,437.0

Sources: 2004 Statistical Report, Georgia Department of Revenue, The Tax Foundation, U.S. Census Bureau for the 2005 Population Estimate for Georgia, and U.S. Bureau of Economic Analysis for statewide personal income. EDR Group also conducted extensive interviews with economists at the Tax Foundation, Georgia Department of Revenue and the Tax and Expenditure Data Center for Georgia Local Governments, Carl Vinson Center, University of Georgia. Taxes included in this analysis are income tax, sales tax and property tax.

Table 5.2
Estimated 2005 Federal Aviation Tax Revenues

Type of Tax	Revenues in \$millions
Immigration and Naturalization	\$23.6
International Arrival and Departure Tax	\$95.0
Domestic Passenger Taxes ¹	\$459.3
Sub-Total - Passenger Related Taxes	\$557.9
U.S. Customs (freight)	\$676.4
TOTAL	\$1,254.3

Sources: Federal Aviation Administration (www.FAA.gov and interviews with FAA staff), <http://www.atlanta-airport.com>, and www.WiserTrade.com to determine value of imports to H-JAIA as a basis for US Customs fees.

¹Domestic passenger taxes include Domestic Flight Segment Fee, Domestic Passenger Ticket Tax, Flights Between Continental US and Alaska and Hawaii. Not included are Passenger Ticket Tax for Rural Airports, Frequent Flyer Tax, or Passenger Facility Charges (PFCs).

CHAPTER SIX

IMPACTS OF THE H-JAIA DEVELOPMENT PROGRAM

The Hartsfield-Jackson Development Program (H-JDP) is one of the largest capital improvement programs currently underway in the United States. The impacts of the H-JDP are incorporated in the analysis of Chapter 2, On-Airport Impacts. Due to the importance of the Program, the H-JDP is discussed separately in this section, as well.

The H-JDP began in 2000 and is expected to be completed in 2015, approximately. It is composed of two parts, capital construction and consulting and engineering. The major projects of the Program are:

- New 9,000 foot Runway - in construction in 2005, this is H-JAIA's 5th Runway and was commissioned in May 2006
- New East International Terminal and additional gates on Concourse E (H-JAIA's existing international concourse) – The International Terminal was in final design phase and site preparation was underway in 2005, while construction of four additional gates on Concourse E was completed in 2001
- A Consolidated Rental Car Facility – in 2005 final design was being completed and the site was being prepared
- Improvements to the Central Passenger Terminal Complex – construction of initial projects were underway in 2005 as further planning and design was being completed for future projects
- A new South Gate Complex – a series of additional concourses - is also proposed for the future and in 2005 was in preliminary planning

6.1 DIRECT IMPACTS

In 2005, the H-JDP generated more than 2,200 direct jobs in the Atlanta MSA, paying an aggregate of \$86 million in personal income, which were based on \$205 million of business revenue. **Table 6.1** shows the total direct impact of the H-JDP, as well as the breakout between capital construction and consulting and engineering.

The H-JDP is expected to be a tremendous job generator over the course of the life of the program. **Table 6.2** provides a breakdown of the number of projected jobs by program element.

Table 6.1
Direct Impacts of the Hartsfield-Jackson Development Program

Sub-classification	Jobs	Personal Income	Business Revenues
Capital Construction	1,725	\$60,977,946	\$154,067,371
Consulting and Engineering	496	\$25,229,038	\$50,925,550
Total Direct	2,221	\$86,206,984	\$204,992,922

Sources: Interviews with tenants and airport administration, IMPLAN packages using US Department of Commerce Data for Georgia and the 28 MSA counties. Calculations by EDR Group. Totals may not add due to rounding.

Table 6.2
H-JDP Projected Jobs by Program Element

	Professional Services	Skilled/Unskilled
Fifth Runway	400	3600
CPTC	350	750
MHJIT (International Terminal)	1500	9000
CONRAC	400	3000
South Gate Complex	2400	9100

Source: H-JAIA

6.2 INDIRECT AND INDUCED EFFECTS

In 2005, indirect and induced impacts of the H-JDP in the Atlanta region generated \$210 million in business revenues above the direct impacted shown in Table 6.1, supporting 1,900 additional jobs, which paid \$83 million in personal income. The total regional economic contribution of the Development Program at H-JAIA was roughly \$415 million in business sales, generating more than 4,000 jobs and \$169 million in workers' wages and proprietors' income. (See **Table 6.3**).

Table 6.3
Summary of Direct, Indirect, Induced and Total Economic Impacts of the H-JDP

ECONOMIC IMPACTS	Business Revenues	Personal Income	Jobs
I. DIRECT IMPACT: VISITOR SPENDING ACTIVITY			
Direct Impacts of H-JDP	\$204,992,922	\$86,206,984	2,221
II. INDIRECT IMPACT: SUPPLIERS OF GOODS AND SERVICES			
Due to H-JDP	\$70,216,179	\$28,071,809	590
III. INDUCED IMPACT: RE-SPENDING OF WORKER INCOME			
Due to H-JDP	\$139,919,279	\$54,725,012	1,325
TOTAL REGIONAL IMPACT	\$415,128,380	\$169,003,805	4,136

Sources: Interviews of tenants and airport administration, US Department of Commerce provided by

IMPLAN. Calculations by EDR Group.

CHAPTER SEVEN

COMPARISON OF 2005 AND 2002 FINDINGS

This section compares the findings of the 2002 H-JAIA Economic Impact Study with the 2005 findings reported in this document. The basis of this comparison is the common elements of the two studies, which were impacts generated from activities occurring on-airport, as well as visitor spending.

The studies approached impacts of “related users” (freight shippers) differently. The 2005 study rigorously separated shipments through H-JAIA originating in the MSA from those in the rest of Georgia and the nation, and also calculated indirect and induced benefits for the MSA shipments.

A second major difference is that the 2005 study included proprietors’ income as part of direct impacts, while the 2002 study used wages but did not include proprietors’ income. For direct personal income impacts, the previous study cites data from the Bureau of Labor Statistics, which reports wages. The 2005 study strictly used the Bureau of Economic Analysis definition of personal income as including wages and proprietors’ income.

Third, the IMPLAN Modeling Package was used in 2005, while the RIMS II package was used in 2002. Each modeling package is based on the same Input-Output Data developed by the US Department of Commerce. Moreover, both the RIMS II and IMPLAN modeling packages include proprietors’ income in definitions of personal income.

7.1 ON-AIRPORT IMPACTS

Over the three years between studies, the on-airport impacts of H-JAIA show the following changes in metropolitan Atlanta:

- Jobs at H-JAIA increased from 55,314 reported in 2002 to 56,505 in 2005.
- Direct business revenues on-airport decreased from \$10.9 billion in 2002 to \$10.6 billion (\$9.8 million in constant 2002 dollars) in 2005. This is due to changes among sectors at the airport. In 2005, there were 2,400 fewer airline jobs at H-JAIA. Among all sectors found on the Airport, these jobs generate the highest ratio of revenue per worker. Conversely, sectors that saw significant gains from 2002 to 2005 include retail concessions (plus 1,490), freight forwarders (plus 1,312) and limousine, bus and van transportation (plus 965). However these gains may also be a result of the more rigorous data collection effort that was completed for the 2005 study.
- Wages on-airport increased from \$2.4 billion to \$3.2 billion. In part, this difference can be traced to two factors: inflation of 8.6 percent and inclusion of proprietors’ income in the 2005 study, which are roughly 12 percent. In constant dollars, and without proprietor’s income, 2005 on-airport wages would be roughly \$2.6 billion.

- As shown in **Table 7.1**, total economic activity has grown from 105,000 workers to 145,000; from \$15.4 billion of business revenues to \$19.9 billion (\$18.3 billion in constant 2002 dollars and from the private sector) and from \$5.6 billion in wages

reported in 2002 to \$7 billion in 2005 (\$6.4 billion in constant 2002 dollars without adjusting for proprietors' income).

Table 7.1
**Comparison of 2002 and 2005 H-JAIA
 Economic Impact Studies**

	2002	2005
Jobs	105,000	145,000
Business Revenue	15,400,000,000	19,900,000,000
Personal Income	5,600,000,000	7,000,000,000

7.2 VISITOR IMPACTS

In nominal dollars, spending by visitors dropped from \$7.8 billion in 2002 to \$7.7 billion in 2005 (equivalent to \$7.1 billion in constant 2002 dollars). Employment, personal income, and multiplier impacts are discussed below.

- Direct employment increased from 119,000 in 2002 to 127,000 in 2005. This is due to two factors. First, per the results of the H-JAIA visitor survey, the pattern of spending by visitors changed, and thus sales were distributed differently in the two study years among hotels, restaurants, retail establishments, entertainment and transportation, excluding services paid at the airport. Second, the amount of visitor spending per job varies between the two studies. Differences for the visitor industry sectors are shown in **Table 7.2**. At the bottom line, the 2002 study reported that on average \$94,000 of visitor spending was required per job and the 2005 study found that an average of \$58,000 of visitor spending supported each job. The overall number of direct jobs generated by visitor spending are higher in 2005 because ratio of sales to employment is lower than 2002.

- Personal income from direct visitor spending was \$1.8 billion in 2002 and \$2.5 billion in 2005 (\$2.3 billion in constant 2002 dollars). This difference is largely attributable to the changes of how visitors spent their money. In 2005, the hotel industry shows a higher wage per worker than any other visitor spending sector, and proportion of hotel spending increased from 28 percent in 2002 to 37 percent in 2005. (See **Table 3.3** in Chapter 3, above.)
- Total economic activity (including direct impacts and indirect and induced effects generated by visitor spending) has decreased from 226,000 workers to 194,000. Total business revenues grew from \$12.2 billion reported in 2002 to \$15 billion in 2005 (\$13.9 billion in constant 2002 dollars) and personal income reported as \$5.2 billion in 2002 rose in nominal terms to \$5.4 billion in 2005, but decreased in constant dollars to \$5.0 billion.

Table 7.3, displays the complete comparison of the 2005 and 2002 studies.

Table 7.2

Comparison of the Distribution of Visitor Spending and Business Sales per Job				
Visitor Spending Sector	Percent Distribution of Visitor Spending Dollars		Visitor Spending Needed to Support One Worker	
	2005	2002	2005	2002
Hotel	37%	28%	\$74,766	\$43,088
Restaurants	18%	25%	\$48,812	\$53,197
Entertainment	11%	15%	\$53,037	\$71,649
Retail	25%	26%	\$51,386	\$202,558
Transportation	10%	6%	\$36,414	\$97,114
Total Percent	100%	100%		
Average Visitor Spending/Job, All Sectors			\$58,377	\$94,179

Sources: AIR Survey, US Department of Commerce data for metro-Atlanta region provided by IMPLAN for 2005. 2002 data were derived from Exhibits V-1 and V-2 in the 2002 study.

Table 7.3

Comparison of On-Airport and Visitor Spending

IMPACTS	AIRPORT GENERATED (incl. Dev Pgm)		VISITOR INDUSTRY	
	2002	2005	2002	2005
	Direct	55,314	56,505	119,363
Indirect	18,127	30,784	68,035	17,583
Induced	<u>31,776</u>	<u>57,948</u>	<u>38,269</u>	<u>49,105</u>
Total Jobs	105,217	145,236	225,667	193,917
Direct	\$10,947.1	\$10,585.9	\$7,835.7	\$7,731.6
Indirect (Local Purchases)	\$1,774.0	\$3,437.3	\$2,362.3	\$2,302.4
Induced (Labor Re-spending)	<u>\$2,679.4</u>	<u>\$5,855.0</u>	<u>\$1,952.5</u>	<u>\$4,996.2</u>
Total Business Revenue	\$15,400.5	\$19,878.2	\$12,150.5	\$15,030.2
Direct	\$2,441.7	\$3,192.8	\$1,779.3	\$2,545.6
Indirect	\$622.4	\$1,387.5	\$1,532.7	\$831.4
Induced	<u>\$2,551.8</u>	<u>\$2,379.2</u>	<u>\$1,859.5</u>	<u>\$2,048.3</u>
Total Personal Income	\$5,615.9	\$6,959.6	\$5,171.5	\$5,425.3
Direct	\$44,143	\$56,505	\$14,907	\$20,026
Indirect	\$34,336	\$45,073	\$22,528	\$47,284
Induced	\$80,306	\$41,058	\$48,590	\$41,713
Weighted Average Income Per Job	\$53,374	\$47,919	\$22,917	\$27,985
Atlanta MSA Avg Income/Employee	\$40,535	\$39,274	\$16,452	\$18,475

Source: EDR Group.

CHAPTER EIGHT

COMPARISON WITH OTHER AIRPORTS

This section compares the findings of the 2005 H-JAIA Economic Impact Study with findings in the most recent economic impact studies of five major airports. The airports included in this comparison are as follows: Chicago O'Hare International Airport (ORD), Dallas/Fort Worth International Airport (DFW), John F. Kennedy International Airport (JFK), Memphis International Airport (MEM), and Phoenix Sky Harbor International Airport (PHX). The types of information available vary according to each report, as does the study methodology and the year of the base data, making direct comparisons challenging.

Tables 8.1 and 8.2, provided at the conclusion of this section, summarize direct economic impacts (both airport-based and visitor spending), as well as total economic impacts (including multiplier effects), of H-JAIA and each of the five comparable airports. **Table 8.1** reports the compared values in original dollars. **Table 8.2** reflects constant 2005 dollars.

8.1 CHICAGO O'HARE INTERNATIONAL AIRPORT

The 2001 report "Update of a Study on the Economic Impact of Chicago's Airports" prepared by Booz Allen Hamilton provides the most recent economic impact data for Chicago O'Hare International Airport. Year 2000 economic data is used in the study. Over 51,000 employees worked at ORD in 2000, including approximately 30,000 airline personnel. Overall, ORD generated approximately \$38-\$41 billion in total economic activity in 2000. Total employment

supported by ORD in 2000 was approximately 400,000 to 480,000 jobs, with a corresponding payroll of approximately \$10-\$13 billion.

8.2 DALLAS/FORT WORTH INTERNATIONAL AIRPORT

The most recent economic impact data available for Dallas/Fort Worth International Airport comes from the June 2003 report "Economic Impact of General Aviation in Texas," prepared by Wilbur Smith Associates, Inc. Although the study was published in 2003, it utilized economic data from 2001, and while the study focused on general aviation, commercial aviation impacts were included for those airports with commercial service. Direct economic activity attributable to DFW was more than \$2.6 billion, while visitor spending was responsible for \$5.7 billion in direct economic activity in 2001. When multiplier effects of \$6.0 billion were added to the impacts, DFW generated approximately \$14.3 billion in total economic activity in 2001. Total employment generated by DFW in 2001 was approximately 268,500 jobs, with a corresponding total payroll of nearly \$6.0 billion.

8.3 JOHN F. KENNEDY INTERNATIONAL AIRPORT

The August 2005 study "The Economic Impact of the Aviation Industry on the New York-New Jersey Metropolitan Region" prepared by the Port Authority of New York & New Jersey provides the most recent economic impact figures for John F. Kennedy International Airport using 2004 economic

data. Total direct impact generated by JFK was approximately \$11.3 billion in economic activity in 2004, with 69,400 airport-based jobs and payroll of \$3.7 billion. Visitor spending increased this impact, supporting over 55,220 jobs with a payroll of \$1.5 billion, and economic activity of \$4.6 billion. When multiplier effects were added to the impacts, JFK generated approximately \$27.6 billion in total economic activity in 2004. Total employment generated by JFK in 2004 was approximately 228,480 jobs, with a corresponding total payroll of nearly \$9.8 billion.

8.4 MEMPHIS INTERNATIONAL AIRPORT

The May 2005 report “The Economic Impact of Memphis International Airport” provides the most recent economic impact figures for Memphis International Airport using 2004 data. This report was completed by the Sparks Bureau of Business and Economic Research Center for Manpower Studies at the University of Memphis.

MEM generated nearly \$20.8 billion in total economic activity including multiplier effects in 2004. Total employment generated by MEM in 2004 was approximately 165,901 jobs, with a total corresponding payroll of nearly \$6.0 billion.

8.5 PHOENIX SKY HARBOR INTERNATIONAL AIRPORT

The 2003 study “The Economic Impact of Aviation in Arizona” completed by SH&E uses 2002 economic data and provides the most recent economic impact figures for Phoenix Sky Harbor International Airport. Total direct impact generated by PHX was approximately \$6.1 billion in economic activity in 2002, with 39,373 airport-based jobs and payroll of \$1.75 billion. Visitor spending increased this impact, supporting over 94,200 jobs with a payroll of \$1.87 billion, and economic activity of \$4.6 billion. When multiplier effects were added to the impacts, PHX generated approximately \$23.5 billion in total economic activity in 2002. Total employment generated by PHX in 2002 was approximately 281,000 jobs, with a corresponding total payroll of nearly \$8.1 billion.

Table 8.1

Economic Impacts: H-JAIA and Comparison Airports

Airport	Year	Direct (Airport-Based)			Direct (Visitor Spending)			Total Impacts (Including Multiplier Effects)		
		Jobs	Wages and Salaries	Revenues	Jobs	Wages and Salaries	Revenues	Jobs	Wages and Salaries	Revenues
DFW	2001	-	\$0	\$2,600,000,000	-	\$0	\$5,700,000,000	268,500	\$6,000,000,000	\$14,300,000,000
H-JAIA	2005	56,505	\$3,192,816,698	\$10,585,923,189	127,229	\$2,545,603,556	\$7,731,618,409	393,101	\$15,302,667,302	\$44,804,754,316
JFK	2004	69,400	\$3,665,000,000	\$11,293,000,000	55,220	\$1,494,000,000	\$4,628,000,000	228,480	\$9,812,000,000	\$27,611,000,000
MEM	2004	-	\$0	\$0	-	\$0	\$0	165,901 400,000	\$5,945,494,184	\$20,776,165,338
ORD	2000	51,000	\$0	\$0	-	\$0	\$0	480,000 to	\$10,000,000,000 to \$13,000,000,000	\$38,560,976,000 to \$41,000,000,000
PHX	2002	39,373	\$1,746,691,315	\$6,143,776,057	94,266	\$1,872,517,555	\$4,604,518,667	281,018	\$8,053,735,485	\$23,548,812,548

Table 8.2

Economic Impacts: H-JAIA and Comparison Airports (2005 Constant Dollars)

Airport	Year	Direct (Airport-Based)			Direct (Visitor Spending)			Total Impacts (Including Multiplier Effects)		
		Jobs	Wages and Salaries	Revenues	Jobs	Wages and Salaries	Revenues	Jobs	Wages and Salaries	Revenues
DFW	2001	-	\$0	\$2,867,193,676	-	\$0	\$6,285,770,751	268,500	\$6,616,600,791	\$15,769,565,217
H-JAIA	2005	56,505	\$3,192,816,698	\$10,585,923,189	127,229	\$2,545,603,556	\$7,731,618,409	393,101	\$15,302,667,302	\$44,804,754,316
JFK	2004	69,400	\$3,789,171,519	\$11,675,610,905	55,220	\$1,544,617,258	\$4,784,798,306	228,480	\$10,144,434,092	\$28,546,470,619
MEM	2004	-	\$0	\$0	-	\$0	\$0	165,901 400,000	\$6,146,929,667	\$21,480,069,299
ORD	2000	51,000	\$0	\$0	-	\$0	\$0	480,000	\$11,341,463,000 to \$14,743,902,000	\$38,560,976,000 to \$46,500,000,000
PHX	2002	39,373	\$1,896,213,529	\$6,669,702,412	94,266	\$2,032,810,887	\$4,998,679,798	281,018	\$8,743,160,313	\$25,564,664,206

APPENDICES

Appendix I

STATE OF GEORGIA

The total impact of H-JAIA on the state of Georgia amounts to 473,000 jobs, including indirect and induced effects, which generate almost \$18 million in personal income, based on \$54 billion of business revenues. Overall, jobs affiliated with the airport generate higher levels of personal income than statewide averages. **Table AI-1** shows the overall Georgia wide impact for H-JAIA.

The differences that lead to the higher Georgia numbers are listed below.

1. **On-Airport.** Though on-airport direct effects are the same as for the region, additional business to business sales (indirect) and consumer spending (induced) span a wider area, the whole state as opposed to metropolitan Atlanta. Therefore the multiplier effects are higher in the larger area, as economic activities that take place in Georgia, but outside of the metro-area are included in the analysis.
2. **Visitor Spending.** Direct visitor spending is assumed to be the same in Georgia as in the Atlanta MSA. This is most likely an undercount of spending, but data are not available to calculate additional spending outside the metropolitan area by visitors. As discussed in the accounting of on-airport impacts, subsequent indirect and induced effects span statewide, and are therefore higher.
3. **Related Industries.** More products that originate in Georgia are air-shipped through H-JAIA than the volume of products from the Atlanta MSA. Direct affects reflect the higher totals from the state, as well as the larger statewide multipliers.

Table AI-1
Overall Georgia Wide Impact for H-JAIA

IMPACT	AIRPORT GENERATED (incl Dev Program)	VISITOR INDUSTRY	RELATED JOBS	TOTAL IMPACT
Jobs				
Direct	56,505	127,229	29,229	212,963
Indirect	33,105	19,743	23,594	76,442
Induced	<u>74,645</u>	<u>62,602</u>	<u>46,471</u>	<u>183,718</u>
Total Jobs	164,256	209,575	99,293	473,124
Business Revenue (\$Mil)				
Direct	\$10,585.9	\$7,731.6	\$8,255.2	\$26,572.8
Indirect (Local Purchases)	\$3,565.1	\$2,435.8	\$3,859.6	\$9,860.5
Induced (Labor Re-spending)	<u>\$6,946.5</u>	<u>\$5,835.8</u>	<u>\$4,436.4</u>	<u>\$17,218.7</u>
Total Business Revenue	\$21,097.5	\$16,003.1	\$16,551.3	\$53,652.0
Personal Income (\$Mil)				
Direct	\$3,192.8	\$2,545.6	\$1,754.3	\$7,492.8
Indirect	\$1,394.8	\$854.9	\$1,301.2	\$3,550.9
Induced	<u>\$2,865.6</u>	<u>\$2,430.5</u>	<u>\$1,772.6</u>	<u>\$7,068.6</u>
Total Personal Income	\$7,453.2	\$5,831.1	\$4,828.1	\$18,112.3
Average Income/Employee (\$/yr)				
Direct	\$56,505	\$20,008	\$60,020	\$35,183
Indirect	\$42,133	\$43,302	\$55,148	\$46,452
Induced	\$38,389	\$38,825	\$38,144	\$38,475
Weighted Avg Income/Employee	\$45,376	\$27,823	\$48,624	\$38,282
Georgia Avg Income/Employee	\$35,076	\$16,731	\$40,079	\$35,076

Appendix II

STUDY METHODOLOGY

This Appendix reviews the use of the IMPLAN Model System and WISERTrade data.

IMPLAN

To estimate the indirect and induced (“multiplier”) economic effects for each project, this study utilized the IMPLAN model system. IMPLAN stands for “Impact Analysis for Planning” and is now the most widely used input-output economic modeling system in the US, with a client list of 500 public and private agencies including several federal agencies and numerous state agencies. It utilizes U.S. Commerce Department (“National Income and Product Accounts”) data on inter-industry technology relationships (also known as input-output structural matrices), countywide employment and income data from the Bureau of Economic Analysis (BEA) and Bureau of Labor Statistics (BLS), and its own industry and county-specific estimates of local purchasing rates (“regional purchase coefficients”). It is enhanced over most other input-output models in that it also includes coverage of public sector activity and consumer activity (reflected in its “social accounting matrix”). The industry detail is at the level of 509 industries, and is based on categories of the US Bureau of Economic Analysis (BEA), which correspond to 2 to 5 digit groups in the North American Industry Classification System (NAICS).

For this study, the direct job and income effects for on-airport, visitor spending and related jobs were documented and then assigned to specific sector groups, based on information from interviews and surveys completed for this project, and based on experience in aviation and freight economies internationally. The IMPLAN model was then calibrated for the 28-county Atlanta-Sandy Springs-Marietta, Georgia Metropolitan Statistical Area, as well as for the state of Georgia. It was then run, using the direct effects on specific industry groupings with the classifications of on-airport employment, off-airport visitor spending and manufactures and agricultural products shipped from H-JAIA. The result was an estimate of the indirect and induced (and overall) job, business revenue and income impacts for each segment of airport beneficiary. The analysis of retail impacts was adjusted to account for retail markup margins and the concentration of sales in airports and in visitor industries. Retail portions of multiplier effects also incorporate these margins.

Regardless of whether economic impacts are measured in terms of jobs, income or business sales, these impacts can be classified into three categories:

- ***Direct economic effects*** are the changes occurring at the project site as a direct consequence of the public investment, project or program. This is represented as the net increase in business activity associated with new relocations of business to the project site, expansion of existing businesses at that site, or new business startups there.
- ***Indirect economic effects*** are the broader effects on business activity for off-site suppliers to the directly-affected businesses. This can include production, distribution and transportation for suppliers of goods and services.

- *Induced economic effects* are further shifts in spending on food, clothing, shelter and other consumer goods and services, as a consequence of the change in workers and payroll of directly and indirectly affected businesses.

EDR Group assembled classifications of the 509 sectors in the IMPLAN modeling package to best mirror types of industries on H-JAIA, types of visitor spending and industries related to commodities exported from H-JAIA. The classification scheme used for this study for on-airport and visitor spending impacts are shown in **Table AII-1**.

Cargo Data

The economic contributions of related users, i.e., shippers who use H-JAIA, to the Atlanta region were calculated from WISERTrade, data on www.atlanta-airport.com/ and IMPLAN.

Step 1. Analyze U.S. Census Bureau's Foreign Trade Division Data Assembled by WISERTrade.

WISERTrade (formerly MISER, Massachusetts Institute for Social and Economic Research) has worked with state exports from the US Census Bureau since 1987 and produced the state export data that was on the National Trade Data Bank for many years. Its software is used by about 25 state international trade offices, several World Trade Centers, and a wide variety of data providers and data users throughout the US and abroad. WISER maintains an extensive international trade database including four U.S. State level export series, U.S. exports and imports by Customs District and by individual Port, and most recently, Japanese trade statistics. WISER makes its data available in a variety of formats. Data sets used in the analysis of Related Users are:

- State Exports by Port of exit by country, value and weights by method of transportation.
- US Exports/Imports by Port of Exit/Entry by 10-digit HS commodity by country.

These data document international trade via H-JAIA of products that originate in Georgia and the rest of the United States by value as well as by weight of air cargo. (See **Table AII-6** at the end of this appendix).

The State Exports by Port database allows us to determine how much of these exports originate in Georgia, as well as other others. As we reported in Chapter Four, the value of goods that originate in Georgia and are exported through H-JAIA amounts to \$3.4 billion, or roughly 30 percent of the national total. About 22.6 percent of metric tonnage exported from H-JAIA originates in Georgia, indicating that state products shipped from the airport have a higher value than products from the rest of the nation¹⁵.

15 Data reported by WISER and www.atlanta-airport.com are not exactly matched. For example, WISERTrade's export by weight data reports 134,892 metric tons were exported through H-JAIA in 2005 from all points of origin, which is 99.45 percent of the 135,640 metric tons reported by H-JAIA .

Table AII-1

Industry Classification of On-Airport and Visitor-Serving Industries

Airport Tenants Classification	IMPLAN Sectors Used	Visitor Spending Classification	IMPLAN Sectors Used
Passenger Airlines	Air Transportation	Retail	Electronics and Appliance Stores
FAA/Federal Government Agencies (not TSA)	Federal Government		Food and Beverage Stores
FBO	Wholesale Transportation Support Facility Support Electronic Repair Machinery Repair		Health and Personal Care Stores Gas Stations Clothing Stores Sporting Goods Stores Book Stores Music Stores General Merchandise
Security/Skycaps	Security Transportation Support	Entertainment	Performing Arts
Area Common Carriers	Wholesale Trucking Transportation Support Warehousing		Spectator Sports Museums/Historical Sites Zoos/Parks Bowling Alleys Other recreation
Construction	Industrial Buildings Commercial Buildings Institutional Buildings Road Construction Water/Sewer Construction	Eating/Drinking	Restaurants Bars
		Hotel	Hotels Motels Bed and Breakfasts
Freight Airlines/Couriers	Air Transportation Postal Service Couriers	Transportation	Ground Transportation
Local Government	Local and State Government		
Retail Eating/Drinking Rental Cars Taxis Limos/Buses/Vans/Transit Parking and misc.	Electronics and Appliance Stores Food and Beverage Stores Clothing Stores Sporting Goods Stores Restaurants Bars Car Rental Ground Transportation Ground Transportation Personal Services		
Janitorial Services	Building/Dwelling Services		
Catering Firms	Restaurants Bars		
Consulting and Engineering	Architecture and Engineering		

Source: IMPLAN

Table AII-2
Value of Commodities Exported Through H-JAIA From All Points of Origin and Originating in Georgia by Value

Point of Origin	2002	2003	2004	2005
All Commodities Originating in the US	\$7,710,439,441	\$8,297,060,635	\$10,360,164,216	\$11,566,809,166
Commodities Originating in GA	\$2,406,329,820	\$2,993,850,412	\$3,316,198,636	\$3,425,339,658
Percent Originating in GA	31.2%	36.1%	32.0%	29.6%

WISERTrade AXESWeb: State Exports by Port Database Prepared by [WISERTrade](#) using data from US Census Bureau, [Foreign Trade Division](#) Origin of Movement Series.

Step 2. Combine WISER and www.atlanta-airport.com

For calendar year 2005, H-JAIA reported that 135,640 metric tons of cargo other than mail departed by aircraft for international destinations, and 326,898 metric tons departed for international and domestic destinations combined. The ratio of total tonnage exported to international exports is 2.41: that is for every ton of international exports, 1.41 tons are shipped to domestic U.S. markets. Thus, the total value of international and domestic shipments from H-JAIA in 2005 is estimated at \$27.9 billion. Going forward, a key assumption is that domestic and international cargo shipments in the course of a year include the same types and proportions of commodities, and thus imply the same industries, and the same percentage of products originating in Georgia as a proportion of total shipments (29.6 percent). (See **Table AII-3**.)

Step 3. Application of IMPLAN

HS Commodities were aggregated by IMPLAN industrial sector. These aggregations were the basis for estimating direct employment and income reliant on these exports, as well as indirect and induced effects in the Metropolitan economy. The table of aggregation is presented in **Table AII-4**.

Data of the Foreign Trade Census Bureau’s Foreign Trade Division does not extend below state level. To estimate the value of goods produced in the Atlanta MSA that were shipped through H-JAIA, we used the US Department of Commerce and Department of Agriculture data that are packaged by IMPLAN to develop proportions of business revenues between the Atlanta MSA and Georgia for these sectors, as shown in **Table AII-5**.

Table AII-3
Estimated International and Domestic Air Freight Shipments Through H-JAIA in 2005, By Value and Commodity

Description	US International Exports Through H-JAIA	Exports Inflated by 2.41 to Account for US Domestic Shipments	GA Products Shipped Through H-JAIA, Based on Proportion of Int. Trade
Industrial machinery, including computers	\$3,514,256,028	\$8,469,502,116	\$2,508,117,932
Electric machinery etc; sound equip; TV equip; pts	\$3,017,219,673	\$7,271,623,980	\$2,153,384,018
Optic, photo etc, medic or surgical instruments etc	\$2,064,146,142	\$4,974,677,422	\$1,473,177,228
Aircraft, spacecraft, and parts thereof	\$820,310,180	\$1,976,981,401	\$585,453,836
Pharmaceutical products	\$447,319,822	\$1,078,059,239	\$319,251,317
Chemicals	\$444,080,986	\$1,070,253,510	\$316,939,766
Plastics and articles thereof	\$117,435,610	\$283,024,669	\$83,813,574
Vehicles, except railway or tramway, and parts etc	\$188,994,618	\$455,484,832	\$134,885,104
Live animals	\$56,958,955	\$137,273,433	\$40,651,499
Leather art; saddlery etc; handbags etc	\$51,166,923	\$123,314,397	\$36,517,737
Glass and glassware	\$66,322,320	\$159,839,529	\$47,334,115
Articles of iron or steel	\$59,388,470	\$143,128,665	\$42,385,440
Essential oils etc; perfumery, cosmetic etc preps	\$45,204,582	\$108,944,909	\$32,262,425
Printed books, newspapers etc; manuscripts etc	\$45,228,691	\$109,003,013	\$32,279,632
Top 14 commodities	\$10,938,033,000	\$26,361,111,115	\$7,806,453,624
Other agriculture	\$85,835,945	\$206,868,171	\$61,260,953
Other manufacturing	\$542,940,221	\$1,308,508,348	\$387,495,417
Total all commodities	\$11,566,809,166	\$27,876,487,635	\$8,255,209,994

Sources: WISERTrade using data from US Census Bureau, Foreign Trade Division, www. atlanta-airport.com. Calculations by EDR Group.

Table AII-4
IMPLAN Aggregation for “Related Industries”

HS Export Commodity Groups	IMPLAN Sectors Used	HS Export Commodity Groups	IMPLAN Sectors Used
Aircraft and Parts	Aircraft Manufacturing Space Vehicles and Parts Propulsion Units and Parts Aircraft Engine and Parts	Motor Vehicles	Cars and Light Trucks Heavy Duty Trucks Truck Trailer Trucks Motor Homes Trailers/Campers Vehicle Parts
Chemicals	Petrochemicals Dye Fertilizer Paint/Adhesive Ink Explosives Photo Chemicals	Pharmaceutical Products	Pharmaceutical and Medicine
		Photo/Optical Equipment	Optical Instruments Lenses Medical Instruments and Supplies
Electrical Machinery	Scales/Balances Telephones Communication Equipment A/V Equipment Electron Tubes Semi-conductors Power/Transformers Motor/Generators Wiring Devices Batteries Fiber Optic Cables Switchgear/Switchboards Relay/Industrial Controls Carbon Products	Plastics	Plastic Material and Resin Plastic Packaging Plastic Floor Covering Plastic Pipes Plastic Bottles Plastic Plumbing Fixtures
		Print	Books Printing Binding Commercial Printing
		Travel Goods, Handbags	Bag and Canvas Mills Accessories and Apparel Leather and Tanning
Essential Oils/Perfumery	Toilet Preparation	Other Agriculture	Seed Farming, Fruit and Vegetable Farming, Nuts and Grain Farming, Tobacco, Cotton, Cattle Ranching, Fishing, Pet Food, Grain Milling, Fats and Oils, Dairy Products
Glass	Glass Containers Other Glass Products		
Industrial Machinery	Sawmills Plastics/Rubber Machinery Paper Machinery Textile Machinery Printing Machinery Food Machinery Semi-conductor Machinery Office Machinery Computer Machinery	Other Manufacturing	Meat Processing, Copper, Nickel, Lead, Zinc, Gold, Silver and other Metals, Fabric Mills, Carpet Mills, Wood Products, Paper Products, Bathroom Products, Cement/Concrete, Gypsum, Smelting and Refining, Nonferrous Metals, Aluminum Foundries, Nonferrous Foundries and Forging, Watches/Clocks, Furniture, Athletic Goods, Toys, Musical Instruments

Table AII-5
Value of Goods Produced in Atlanta MSA and Shipped Though H-JAIA

Description	GA	Atlanta	Percent Business Revenues Atlanta MSA
Industrial machinery, including computers	\$2,508,117,932	\$1,913,481,929	76.29%
Electric machinery etc; sound equip; TV equip; pts	\$2,153,384,018	\$1,323,775,007	61.47%
Optic, photo etc, medic or surgical instruments etc	\$1,473,177,228	\$958,714,240	65.08%
Aircraft, spacecraft, and parts thereof	\$585,453,836	\$318,225,893	54.36%
Pharmaceutical products	\$319,251,317	\$90,153,890	28.24%
Chemicals	\$316,939,766	\$157,524,684	49.70%
Plastics and articles thereof	\$83,813,574	\$48,578,575	57.96%
Vehicles, except railway or tramway, and parts etc	\$134,885,104	\$96,758,814	71.73%
Live animals	\$40,651,499	\$7,105,320	17.48%
Leather art; saddlery etc; handbags etc; gut art	\$36,517,737	\$15,188,302	41.59%
Glass and glassware	\$47,334,115	\$33,848,238	71.51%
Articles of iron or steel	\$42,385,440	\$22,891,589	54.01%
Essential oils etc; perfumery, cosmetic etc preps	\$32,262,425	\$22,815,174	70.72%
Printed books, newspapers etc; manuscripts etc	\$32,279,632	\$22,236,612	68.89%
Top 14 commodities	\$7,806,453,624	\$5,031,298,267	64.45%
Other agriculture	\$61,260,953	\$12,302,443	20.08%
Other manufacturing	\$387,495,417	\$105,329,880	27.18%
Total all commodities	\$8,255,209,994	\$5,148,930,591	62.37%

Sources: US Department of Commerce and US Department of Agriculture Data Packaged by IMPLAN.
 Calculations by EDR Group.

Table AII-6
**International Exports Through H-JAIA Originating in the United States, by
 Value and 2-Digit HS Commodity Code**

HS Code	Description	ANNUAL 2005
	TOTAL ALL COMMODITIES	\$11,566,809,166
84	Industrial machinery, including computers	\$3,514,256,028
85	Electric machinery etc; sound equip; TV equip; pts	\$3,017,219,673
90	Optic, photo etc, medic or surgical instruments etc	\$2,064,146,142
88	Aircraft, spacecraft, and parts thereof	\$820,310,180
30	Pharmaceutical products	\$447,319,822
29	Organic chemicals	\$348,034,120
87	Vehicles, except railway or tramway, & parts etc	\$188,994,618
39	Plastics and articles thereof	\$117,435,610
38	Miscellaneous chemical products	\$81,189,222
70	Glass and glassware	\$66,322,320
73	Articles of iron or steel	\$59,388,470
1	Live animals	\$56,958,955
42	Leather art; saddlery etc; handbags etc; gut art	\$51,166,923
49	Printed books, newspapers etc; manuscripts etc	\$45,228,691
33	Essential oils etc; perfumery, cosmetic etc preps	\$45,204,582
93	Arms and ammunition; parts & accessories thereof	\$34,116,034
95	Toys, games & sport equipment; parts & accessories	\$33,358,339
71	Nat pearls, prec stones, prec met, coin, etc.	\$32,552,559
94	Furniture; bedding etc; lamps etc; prefab	\$32,282,812
82	Tools, cutlery etc. Of base metal & parts thereof	\$29,159,632
81	Base metals; cermets; articles thereof	\$24,654,082
56	Wadding, felt etc; sp yarn; twine, ropes etc.	\$21,526,999
83	Miscellaneous articles of base metal	\$20,481,209
92	Musical instruments; parts & accessories thereof	\$20,434,418
40	Rubber and articles thereof	\$18,817,872
68	Art of stone, plaster, cement, asbestos, mica etc.	\$18,104,960
97	Works of art, collectors pieces and antiques	\$18,088,045
21	Miscellaneous edible preparations	\$17,002,670
96	Miscellaneous manufactured articles	\$16,947,723
32	Tanning & dye ext etc; dye, paint, putty etc; inks	\$16,939,533
54	Manmade filaments, inc. Yarns & woven fabrics	\$15,987,097
48	Paper & paperboard & articles (inc paper pulp art)	\$14,600,150
4	Dairy prods; birds eggs; honey; ed animal pr	\$14,267,923
76	Aluminum and articles thereof	\$14,218,216
59	Impregnated etc text fabrics; tex art for industry	\$13,621,179
28	Inorg chem; prec & rare-earth met & radioact compd	\$12,449,773
75	Nickel and articles thereof	\$12,101,988
74	Copper and articles thereof	\$11,561,951
15	Animal or vegetable fats, oils etc. & waxes	\$11,274,509
61	Apparel articles and accessories, knit or crochet	\$10,753,847
62	Apparel articles and accessories, not knit etc.	\$10,622,177

Table AII-6
**International Exports Through H-JAIA Originating in the United States, by
 Value and 2-Digit HS Commodity Code**

HS Code	Description	ANNUAL 2005
	TOTAL ALL COMMODITIES	\$11,566,809,166
98	Special classification provisions, nesoi	\$9,788,256
55	Manmade staple fibers, incl yarns & woven fabrics	\$9,154,611
37	Photographic or cinematographic goods	\$8,914,495
57	Carpets and other textile floor coverings	\$8,701,510
58	Spec wov fabrics; tufted fab; lace; tapestries etc	\$8,239,181
60	Knitted or crocheted fabrics	\$6,379,868
52	Cotton, including yarn and woven fabric thereof	\$6,258,926
63	Textile art nesoi; needlecraft sets; worn text art	\$6,223,752
41	Raw hides and skins (no furskins) and leather	\$6,215,770
2	Meat and edible meat offal	\$6,152,893
69	Ceramic products	\$6,144,595
72	Iron and steel	\$5,803,289
91	Clocks and watches and parts thereof	\$5,688,041
34	Soap etc; waxes, polish etc; candles; dental preps	\$5,311,938
24	Tobacco and manufactured tobacco substitutes	\$5,150,236
86	Railway or tramway stock etc; traffic signal equip	\$5,102,474
12	Oil seeds etc.; misc grain, seed, fruit, plant etc	\$4,101,149
35	Albuminoidal subst; modified starch; glue; enzymes	\$3,269,655
3	Fish, crustaceans & aquatic invertebrates	\$3,108,276
64	Footwear, gaiters etc. And parts thereof	\$2,876,727
25	Salt; sulfur; earth & stone; lime & cement plaster	\$2,413,184
13	Lac; gums, resins & other vegetable sap & extract	\$2,376,033
78	Lead and articles thereof	\$2,183,670
65	Headgear and parts thereof	\$2,045,930
44	Wood and articles of wood; wood charcoal	\$1,832,271
36	Explosives; pyrotechnics; matches; pyro alloys etc	\$1,504,336
8	Edible fruit & nuts; citrus fruit or melon peel	\$1,481,822
7	Edible vegetables & certain roots & tubers	\$1,462,032
79	Zinc and articles thereof	\$1,048,095
89	Ships, boats and floating structures	\$1,003,145
6	Live trees, plants, bulbs etc.; cut flowers etc.	\$924,637
27	Mineral fuel, oil etc.; bitumin subst; mineral wax	\$903,535
16	Edible preparations of meat, fish, crustaceans etc	\$817,239
23	Food industry residues & waste; prep animal feed	\$707,065
51	Wool & animal hair, including yarn & woven fabric	\$606,865
10	Cereals	\$387,558
50	Silk, including yarns and woven fabric thereof	\$331,960
22	Beverages, spirits and vinegar	\$325,053
19	Prep cereal, flour, starch or milk; bakers wares	\$299,029
46	Mfr of straw, esparto etc.; basketware & wickerwrk	\$295,797
45	Cork and articles of cork	\$285,956
5	Products of animal origin, nesoi	\$273,108

Table AII-6
International Exports Through H-JAIA Originating in the United States, by Value and 2-Digit HS Commodity Code

HS Code	Description	ANNUAL 2005
	TOTAL ALL COMMODITIES	
17	Sugars and sugar confectionary	\$250,183
20	Prep vegetables, fruit, nuts or other plant parts	\$206,703
80	Tin and articles thereof	\$183,693
26	Ores, slag and ash	\$155,256
11	Milling products; malt; starch; inulin; wht gluten	\$153,588
47	Pulp of wood etc; waste etc of paper & paperboard	\$141,685
67	Prep feathers, down etc; artif flowers; hair art	\$108,170
53	Veg text fib nesoi; veg fib & paper yns & wov fab	\$99,774
18	Cocoa and cocoa preparations	\$92,702
66	Umbrellas, walking-sticks, riding-crops etc, parts	\$70,962
31	Fertilizers	\$54,724
43	Furskins and artificial fur; manufactures thereof	\$46,299
9	Coffee, tea, mate & spices	\$44,489
14	Vegetable plaiting materials & products nesoi	\$5,923

Source: WISERTrade AXESWeb: State Exports by HS Database. Prepared by WISERTrade using data from US Census Bureau, Foreign Trade Division

Table AII-7
Wages and Output Per Worker For Related Sectors Based on TablesAII-4 - AII-6

Sector	Personal Income Per Worker	Business Sales Per Worker
Live Animals	\$26,448	\$132,514
Travel Goods, Handbags, Leather	\$24,600	\$101,801
Printed Books, Newspapers	\$40,797	\$80,342
Chemicals	\$70,355	\$499,472
Pharmaceuticals	\$118,512	\$702,738
Essential Oils. Perfumery	\$49,507	\$434,246
Plastics	\$41,137	\$258,159
Glass	\$45,364	\$237,086
Iron and Steel	\$65,671	\$376,973
Industrial Machinery	\$68,366	\$287,635
Photo Equipment	\$69,297	\$278,145
Electrical Machinery	\$65,910	\$305,943
Motor Vehicles	\$84,195	\$623,183
Aircraft and Parts	\$77,965	\$410,871
Other Agriculture	\$29,224	\$242,099
Other Manufacturing	\$45,060	\$256,596

Sources: US Department of Commerce and US Department of Agriculture Data Packaged by IMPLAN. Calculations by EDR Group.

Appendix III

DISTRIBUTION OF INDIRECT AND INDUCED IMPACTS IN THE METRO-ATLANTA ECONOMY

This Appendix presents the indirect and induced multiplier activity that was triggered by the direct activities at the Hartsfield-Jackson Atlanta International Airport and air travel visitors to the region in 2005 on the rest of metro-Atlanta's economy. The economic multiplier, or multiplier impacts are the measurable increases to the economy of the 28 county MSA that result from the airport's purchase of goods and services, airport-related employees spending their wages, and air travel visitor spending. Below, the multiplier impacts are presented by industry for off-airport businesses throughout the metropolitan economy. As explained in the main text, these benefits include sales by local suppliers of goods and services to the airport and to area businesses that host air visitors (hotels, restaurants, entertainment establishments). Benefits also derive from the respending of the airport's payroll and the payrolls of businesses serving air visitors to H-JAIA.

Figure AIII-1 reports the additional (multiplier) impacts from the on-going activities of H-JAIA on Atlanta area industries. These impacts reflect the purchases of goods and services by airport-related businesses and the spending of wages by airport employees.

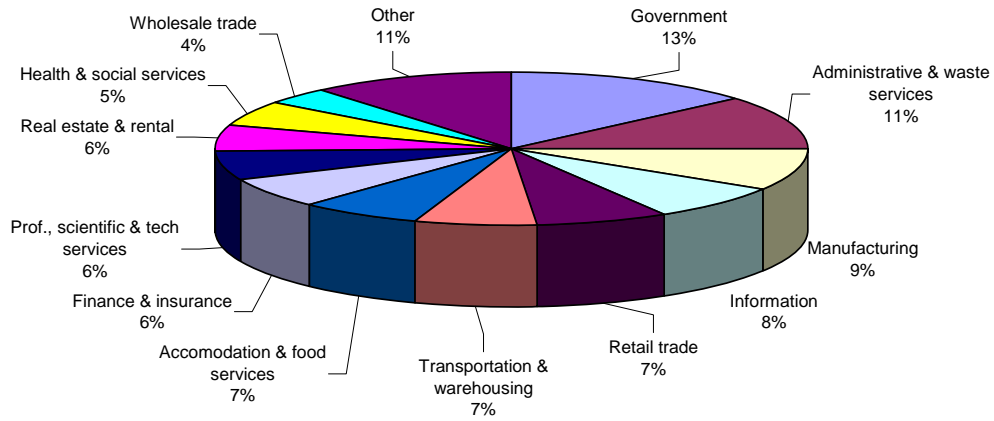
Figure AIII-2 reports the additional multiplier impacts from air visitor spending on specific industries in Atlanta MSA. These impacts reflect spending on goods and services by regional businesses that serve air visitors, as well as the spending of wages by those employed in hotels, restaurants, retail and entertainment businesses.

Figure AIII-3 is the total of the induced affects generated by airport-based activities and visitor spending.

Induced Effects of On-Airport Activities

The indirect and induced impact of those businesses located at the airport in the Atlanta MSA contributes \$9.3 billion across throughout the economy of metropolitan Atlanta economy. **Figure AIII-1** shows the distribution of the multiplier effects of business revenues by industry.

Figure AIII-1.
Distribution of \$9.3 Billion Indirect and Induced Impacts in the Metro Atlanta Economy by Industry, Generated by On-Airport Activities.



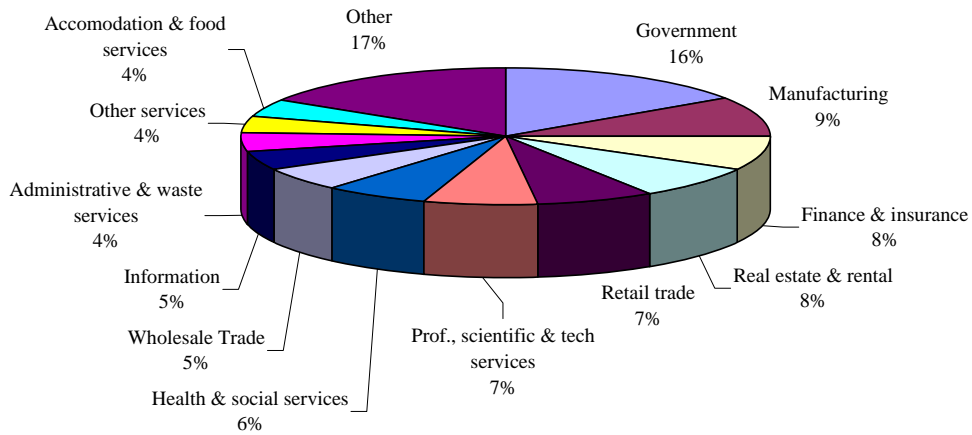
“Other” industries include: *other services, construction, utilities, management, arts and entertainment, educational services, agriculture, and mining.*

Source: IMPLAN Model Package

Induced Effects of Visitor Spending

The indirect and induced impacts of visitor spending on the Atlanta MSA were estimated at \$7.3 billion in addition to direct visitor spending. **Figure AIII-2** shows the distribution of the induced effects of business revenues by industry in the Atlanta MSA.

Figure AIII-2
**Distribution by Industry of \$7.3 Billion of Indirect and Induced Business Revenues
 Generated by Visitor Spending for Air Travelers in Metro Atlanta**



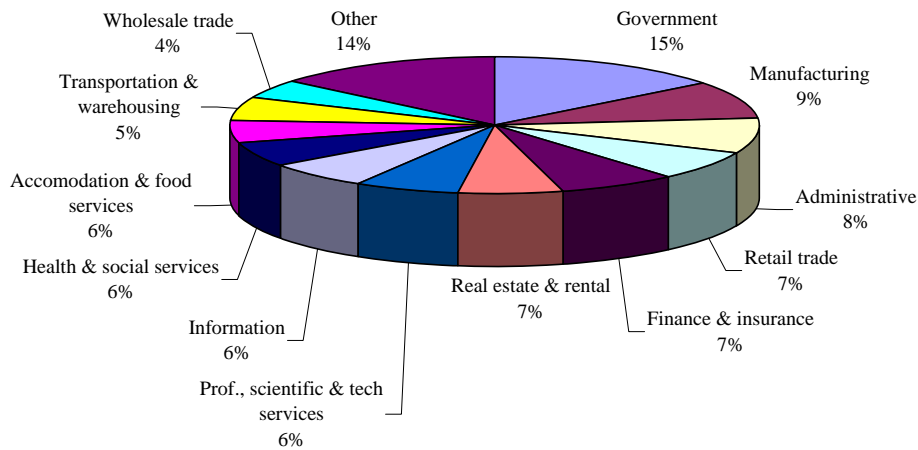
“Other” industries include: *construction, utilities, transportation and warehousing, management, arts and entertainment, educational services, agriculture and forestry, and mining.*

Source: IMPLAN Model Package.

Total Indirect and Induced Contribution to Metropolitan Atlanta of On-Airport and Visitor Spending

Together, on-airport operations and spending of visitors in the Atlanta region who arrive via H-JAIA generate almost \$16.6 billion of business activities in the metropolitan economy by business to business sales (indirect effects) and consumer spending (induced effects). These multiplier revenues account for more than 155,000 jobs and include roughly \$6.6 billion in wages and proprietors' income. **Figure AIII-3** shows the distribution of the combined totals of the multiplier effects of business revenues for on-airport and visitor spending activities by industry in the Atlanta MSA.

Figure AIII-3
Distribution by Industry of \$15.576 Billion of Indirect and Induced Business Revenues Generated On-Airport and by Visitor Spending of Air Travelers in Metro Atlanta



“Other” industries include: *other services, construction, utilities, management, arts and entertainment, educational services, agriculture, and mining.*

Source: IMPLAN Model Package

Appendix IV

DISTRIBUTION OF IMPACTS BY COUNTIES AND MAJOR CITIES OF RESIDENCE

This Appendix presents the distribution of direct jobs and income, and the distribution of tax benefits among counties and major cities in the Atlanta MSA. Local impacts are based on a sample of over 9,000 on-airport employees by zip code assembled from interviews with airport employers. The sample was stratified in two categories, airline employees and other employees, and then each segment was expanded to account for the 56,505 workers at H-JAIA. Overall, 90% of employees of on-airport businesses are Georgia residents, and 83% are residents of one of the 28 counties in the MSA. The calculations of employees by residence formed the basis of estimating direct personal income and city and county tax revenues. Additional tax revenues were estimated to reflect municipal and county revenues generated by indirect and induced income generated by direct on-airport activities.

Below, the following tables are presented to illustrate the distribution of benefits of H-JAIA throughout the Atlanta MSA.

- Tables AIV-1 and AIV-2 present the distribution of on-airport direct jobs by employees' place of residence.
 - Table AIV-1 shows the distribution of direct on-airport jobs among residents of the 28 counties of the Atlanta MSA.
 - Table AIV-2 represents the distribution of on-airport jobs in major cities of the MSA.
- Tables AIV-3 and AIV-4 illustrate the distribution of personal income associated with jobs on H-JAIA
 - Table AIV-3 shows the distribution of direct personal income among residents of the 28 counties of the Atlanta MSA
 - Table AIV-4 presents the distribution of direct personal income in major cities of the MSA.
- Tables AIV-5 and AIV-6 shows the distribution of tax revenues in counties and cities of the MSA based on direct activities.
 - Table AIV-4 shows the distribution of county tax revenues.
 - Table AIV-4 presents the distribution of municipal tax revenues.

Table AIV-1

On Airport Employment by County of Residence

MSA County	On-Airport Employees
Barrow	39
Bartow	47
Butts	121
Carroll	303
Cherokee	288
Clayton	5,938
Cobb	3,653
Coweta	2,818
Dawson	13
DeKalb	6,760
Douglas	910
Fayette	2,463
Forsyth	164
Fulton	17,859
Gwinnett	1,275
Haralson	34
Heard	21
Henry	3,040
Jasper	26
Lamar	33
Meriwether	75
Newton	168
Paulding	224
Pickens	13
Pike	102
Rockdale	257
Spalding	248
Walton	136
Other GA	3,964
Other US	5,511
TOTAL	56,505

Sources: Sources: Interviews of tenants and Airport administration. Calculations by EDR Group.

Table AIV-2
**On Airport Employment by City of
 Residence in the Atlanta MSA**

City in Metro Area	On-Airport Employees
Alpharetta	145
Atlanta	9,123
College Park	3,731
Decatur	1,818
East Point	1,262
Fairburn	490
Fayetteville	1,038
Forest Park	370
Hapeville	549
Jonesboro	1,616
Marietta	856
Morrow	480
Newnan	1,614
Norcross	188
Peachtree City	826
Riverdale	2,120
Roswell	106
Stone Mountain	1,020
Union City	481

Sources: Sources: Interviews of tenants and Airport administration. Calculations by EDR Group.

Table AIV-3
**Personal Income Generated by Direct On Airport
 Economic Activity by County of Residence
 In \$1,000s**

County	Personal Income
Barrow	\$2,786.7
Bartow	\$3,110.1
Butts	\$8,078.0
Carroll	\$20,053.9
Cherokee	\$19,266.1
Clayton	\$304,824.0
Cobb	\$228,709.0
Coweta	\$185,676.8
Dawson	\$928.9
DeKalb	\$334,624.6
Douglas	\$56,652.6
Fayette	\$151,944.0
Forsyth	\$10,441.5
Fulton	\$863,227.9
Gwinnett	\$77,236.3
Haralson	\$2,181.2
Heard	\$1,252.3
Henry	\$185,938.3
Jasper	\$1,857.8
Lamar	\$2,322.2
Meriwether	\$4,826.8
Newton	\$10,018.4
Paulding	\$14,480.5
Pickens	\$928.9
Pike	\$6,543.6
Rockdale	\$14,604.4
Spalding	\$15,450.7
Walton	\$8,724.8
Other GA Counties	\$269,012.9

Sources: Interviews of tenants and Airport administration. Department of Commerce income data packaged by IMPLAN. Calculations by EDR Group.

Table AIV-4
**Personal Income Generated by Direct On
 Airport Economic Activity by City of
 Residence in the Atlanta MSA.
 In \$1000s**

County	Personal Income
Alpharetta	\$10,283.0
Atlanta	\$446,969.3
College Park	\$179,284.5
Decatur	\$83,774.4
East Point	\$58,590.8
Fairburn	\$28,042.2
Fayetteville	\$62,714.0
Forest Park	\$17,331.3
Hapeville	\$22,470.6
Jonesboro	\$85,353.9
Marietta	\$53,018.6
Morrow	\$25,545.5
Newnan	\$108,129.4
Norcross	\$10,889.6
Peachtree City	\$51,330.6
Riverdale	\$105,699.2
Roswell	\$6,098.4
Stone Mountain	\$52,026.7
Union City	\$23,105.3

Sources: Interviews of tenants and Airport administration. Department of Commerce income data packaged by IMPLAN. Calculations by EDR Group.

Table AIV-5
**County Tax Revenues Including Direct, Indirect and Induced
 Effects Generated From On Airport Jobs.
 By County of Residence of Employees.
 In \$1000s.**

County	Revenues Based on Direct Personal Income	Revenues Based on Direct, Indirect and Induced Personal Income
Barrow	\$66.2	\$144.3
Bartow	\$73.9	\$161.1
Butts	\$191.9	\$418.3
Carroll	\$476.5	\$1,038.6
Cherokee	\$457.7	\$997.8
Clayton	\$7,242.2	\$15,786.3
Cobb	\$5,433.8	\$11,844.4
Coweta	\$4,411.5	\$9,615.9
Dawson	\$22.1	\$48.1
DeKalb	\$7,950.3	\$17,329.6
Douglas	\$1,346.0	\$2,933.9
Fayette	\$3,610.0	\$7,868.9
Forsyth	\$248.1	\$540.7
Fulton	\$20,509.2	\$44,705.0
Gwinnett	\$1,835.0	\$3,999.9
Haralson	\$51.8	\$113.0
Heard	\$29.8	\$64.9
Henry	\$4,417.7	\$9,629.4
Jasper	\$44.1	\$96.2
Lamar	\$55.2	\$120.3
Meriwether	\$114.7	\$250.0
Newton	\$238.0	\$518.8
Paulding	\$344.0	\$749.9
Pickens	\$22.1	\$48.1
Pike	\$155.5	\$338.9
Rockdale	\$347.0	\$756.3
Spalding	\$367.1	\$800.2
Walton	\$207.3	\$451.8
Other GA Counties	\$6,391.4	\$13,931.7

Sources: Interviews of tenants and Airport administration. Georgia Department of Revenue and Tax Foundation. Calculations by EDR Group.

Table AIV-6
**Municipal Tax Revenues Including Direct, Indirect and Induced
 Effects Generated From On Airport Jobs.
 By City of Residence of Employees.
 In \$1000s.**

City in Metro Area	Revenues Based on Direct Personal Income	Revenues Based on Direct, Indirect and Induced Personal Income
Alpharetta	\$349.1	\$761.0
Atlanta	\$15,174.4	\$33,076.4
College Park	\$6,086.6	\$13,267.3
Decatur	\$2,844.1	\$6,199.4
East Point	\$1989.1	\$4,335.8
Fairburn	\$952.0	\$2,075.2
Fayetteville	\$2,129.1	\$4,640.9
Forest Park	\$588.4	\$1,282.5
Hapeville	\$762.9	\$1,662.9
Jonesboro	\$2,897.7	\$6,316.3
Marietta	\$1,800.0	\$3,923.5
Morrow	\$867.3	\$1,890.4
Newnan	\$3,670.9	\$8,001.7
Norcross	\$369.7	\$805.8
Peachtree City	\$1,742.7	\$3,798.5
Riverdale	\$3,588.4	\$7,821.9
Roswell	\$207.0	\$451.3
Stone Mountain	\$1766.3	\$3,850.1
Union City	\$784.4	\$1,709.8

Sources: Interviews of tenants and Airport administration. Georgia Department of Revenue and Tax Foundation. Calculations by EDR Group.