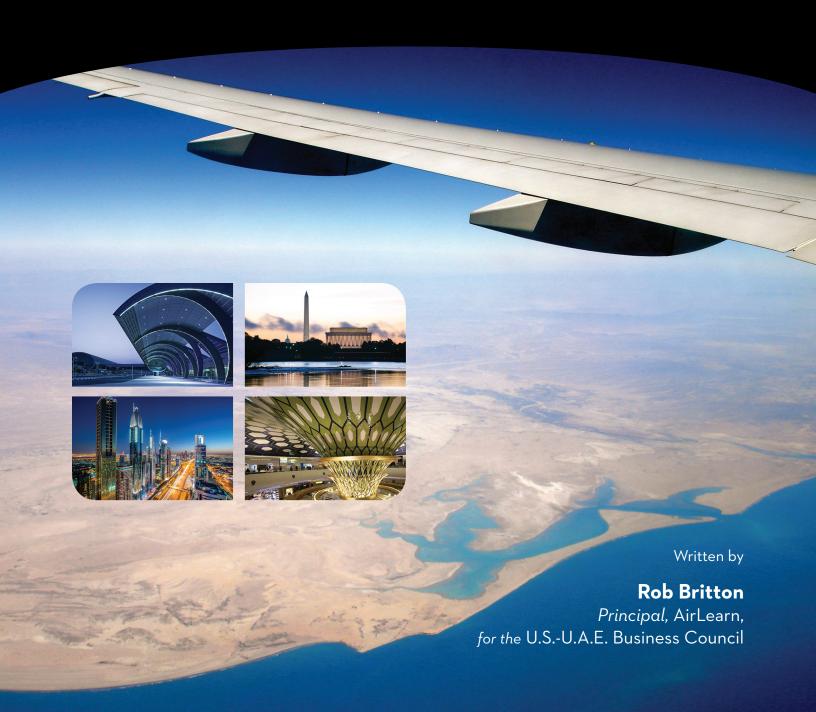


# U.S.-U.A.E. Commercial Aviation: Taking Flight the World's Fastest Growing Bilateral Aviation Relationship



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The total benefit to the U.S. economy from trade with the U.A.E. in commercial aviation exceeded \$16 billion in 2012.

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#### Introduction and Key Findings

Less than a decade after the first nonstop flights between the United Arab Emirates and the United States in June 2004 (daily service between Dubai and New York-Kennedy), passenger service between the two countries has grown 1,500 percent, faster than any bilateral aviation relationship in the world.

To meet this new demand for travel to the U.A.E. and beyond, Dubai-based Emirates Airline, Abu Dhabi-based Etihad Airways, and the U.S. carriers Delta Air Lines and United Airlines now offer more than 61,000 seats on 182 nonstop flights each week, to and from nine U.S. gateway cities. In 2013, over 2.4 million passengers will travel nonstop between the U.A.E. and U.S., and total capacity (in seats) between the two countries is nearly as large as U.S.-Australia or U.S.-Spain.

Many factors contribute to this significant growth, including the U.A.E.'s emergence as the Middle East's center for business and commerce, a deepening U.A.E.-U.S. bilateral relationship and the development of the U.A.E.'s two international airlines and airports (Abu Dhabi and Dubai) as key connecting hubs.

This report will document the breadth and depth of the multifaceted commercial-aviation relationship. In 2012 alone, it generated more than \$16 billion in benefit to the U.S., more than 100,000 jobs, and over \$1.6 billion in tax revenue.\(^1\) Significantly, aviation represents the single biggest component of the overall U.S.-U.A.E. trade relationship, which last year saw exports from the U.S. to the U.A.E. increase 42 percent to a record \$22.6 billion.

We will begin with a perspective on the overall trading relationship, which in 2012 totaled \$24.8 billion, a 35 percent increase over 2011. The report will then document the remarkable growth of Emirates and Etihad Airways both globally and within the United States, which together with U.S. carriers Delta and United, now serve nine U.S. gateways. Most of the report will summarize the impact of Emirates' and Etihad Airways' spectacular growth — unprecedented in the history of commercial aviation — in the following seven areas:

#### Highlights of the Economic Benefit

- In 2012, the U.S.-U.A.E. commercial-aviation relationship generated more than \$16 billion in benefit to the U.S. (direct spending and spinoffs), more than 100,000 jobs, and over \$1.6 billion in tax revenue.
- Current U.A.E. airliner orders that total \$37 billion (at list prices) will over time support more than 200,000 high-paying U.S. manufacturing jobs. In 2012, airliner exports to the U.A.E. sustained 30,800 jobs.
- The four airlines that offer nonstops between the two countries helped generate more than \$5.8 billion in positive benefit in 2012 (total combines overseas visitor expenditure plus airline impact employment, purchases, and indirect and induced effects).
- In 2012, air service at the nine U.S. gateways generated more than 2,200 airport jobs.
- Exports to the U.A.E. of U.S.-manufactured aircraft, engines, spare parts, ground equipment, and a range of related services
- Emirates, Etihad Airways, United, and Delta employment of U.S. nationals in their nine gateways (Chicago, Dallas/Fort Worth, Houston, Los Angeles, New York, San Francisco, Seattle, Atlanta, and Washington, D.C.), and direct airport expenditure
- 3. Impact in the U.S. of spending by overseas visitors arriving on the four airlines that provide nonstop service
- 4. Indirect impact of these airlines' purchase of U.S. goods and services, and of visitor expenditure
- 5. Induced impact, which is the follow-on effect on the U.S. economy as direct and indirect dollars are spent and re-spent; this impact is called the multiplier effect, and in this study it is comprised both of spinoff effects from the U.S. exports as well as from visitor spending in the U.S.
- 6. Tax and fee revenue from direct and indirect expenditure to federal, state, and local governments

<sup>&</sup>lt;sup>1</sup> Detail on the way we calculated these numbers is provided later in the report; we used industry-standard methods and careful assumptions consistent with previous reports on the economic impact of commercial aviation and tourism.

#### The U.A.E.: A Steadfast Ally

In this era of increased tension and conflict, the United States and the United Arab Emirates share the same priority to promote peace and stability, not only in the Middle East but more broadly around the world. The U.A.E. has long understood that it needs to "carry its weight," and has taken a strong role in maintaining regional stability, in coordination with U.S. and other allied forces. The U.S. Navy's most frequent port of call outside the U.S. is at Jebel Ali port in Dubai, and Emirati troops participated in humanitarian and security missions alongside American troops in Afghanistan. Indeed, the U.A.E. is one of three countries total and the only Arab nation to participate with the United States in five coalition efforts over the past 20 years: Afghanistan, Libya, Somalia, Bosnia-Kosovo, and the First Iraq War.

 More subtle, yet palpable, catalytic benefits to facilitate trade and economic development in nonaviation sectors

#### The Burgeoning Trade Relationship

Despite a population of less than 8.3 million (only 1.1 million of whom are nationals, the vast majority being expatriates), the U.A.E. buys more from the United States than any country in the Middle East and North Africa — in 2012, about \$22.6 billion worth of U.S. goods and services from all 50 states, from big things like Boeing 777s to small items like door hinges from a family business in Missouri. This is far more than exports to larger countries nearby, such as Egypt, with a ten-timeslarger population of 82 million, or fast-growing Turkey, with 74 million.

In a decade, U.S. exports to the U.A.E. have quadrupled, far outpacing the growth of exports as a whole. For example, exports to Canada in recent years have grown at an average annual rate of just over one percent. The U.A.E. ranks #28 (in GDP) among world economies, but is the United States' 17th-largest export customer. From 2002 to 2012, the U.A.E. was the fastest-growing U.S.

export destination (among those countries importing more than \$5 billion each year), growing greater than 500 percent. And on a per capita basis, among export destinations larger than one million people, the U.A.E. ranks third, behind Canada and Singapore.

The fact that the U.A.E. is a strong and growing customer is a result, in large measure, from its broad and committed policy of economic diversification — the country is sensibly leveraging its abundant energy supplies to reduce its dependence on them (it's worth noting here that the U.S. does not import any crude oil or gas from the U.A.E.). Other factors contributing to this growth are sustained political stability, a notable openness and welcoming attitude to trade and investment, ease of establishing new businesses, and a strong commitment to education and development of human capital. These policies have led the emergence of Dubai and Abu Dhabi as regional business and finance hubs — a magnet for expatriates and a prime location for multinational companies' regional headquarters.

Robust U.A.E. purchases enrich the entire U.S. economy, and much of the export growth has been in the highwage manufacturing industries that have been so visible in recent public debate: areas like aerospace, defense, construction equipment, automobiles, and electrical machinery. Total employment effects of exports to the U.A.E. are more than 200,000, with jobs in Washington, Texas, and California leading the way. This job creation spreads to every state in the union. "Household name" firms include Ford, 3M, Caterpillar, Mars, Boeing, and Lockheed Martin, but hundreds of small and medium-sized businesses are finding receptive markets, too.

High-value-added services are also growing, and a wide range of U.S. firms are finding customers in the U.A.E., including health care, education, engineering and construction advisers, I.T. services, management consultants, and logistics providers. Firms include IBM, Halliburton, Bechtel, Booz Allen Hamilton, New York University, and Cleveland Clinic.

Looking in the other direction, 2012 U.S. imports from the U.A.E. totaled \$2.24 billion. And the U.A.E. has become a significant and reliable investor in U.S. business, with a cumulative investment position upwards of \$12 billion in direct equity, and billions more in smaller minority stakes. Sectoral targets include high-technology manufacturing, financial services, and real estate, for example, Dubai World's joint partnership in CityCenter Las Vegas, a 76-acre mixed-use urban complex. Other notable U.A.E. investments into the U.S. include a \$6.2

billion GLOBALFOUNDRIES microchip plant in upstate New York, and significant participation in the 1,175-room Washington Marriott Marquis in Washington, D.C.

## The Rapid Growth of Emirates and Etihad Airways, the Gulf's Super-carriers

Unlike U.S. or European carriers that are now 75 to 90 years old, Emirates and Etihad Airways are young. In 1985, faced with the prospect of reductions in service to Dubai from nearby long-distance carriers, the government supported the formation of Emirates with \$10 million in seed money and the clear expectation that the airline would become self-supporting. Emirates' first flight was in October 1985, to Karachi, Pakistan, with a leased aircraft. Etihad Airways is even newer, taking wing less than a decade ago, in November 2003, with launch support from the Government of Abu Dhabi, and an expectation that the airline would not require ongoing subsidy. In less than two decades, Emirates has become one of the ten largest airlines in the world, and in less than ten years, Etihad Airways has become the world's fastest-growing carrier, both competing as independent firms on a level playing field.

Four main factors account for this rapid ascent. First, it has paralleled the emergence of Dubai and Abu Dhabi as commercial, financial, distribution, and tourism centers. But a second factor is the most compelling: the geographic centrality of the U.A.E. Just as Chicago emerged as America's principal railway hub in the late 19th century because of its strategic central location, Dubai and Abu Dhabi are the new crossroads of the globe, perfectly situated to serve as connecting hubs for traffic moving between North America, South America, Europe and Africa to the west and south on one hand, and on the other the nearby Middle East, India and South Asia, China and the rest of East Asia, Southeast Asia, and Australia and New Zealand. About 60 percent of the world's population lives within six flying hours of the U.A.E.

The Internet may have made distance and direction meaningless for virtual interaction, but location still matters for the physical movement of people and goods, and the U.A.E. is superbly, almost perfectly, situated. This advantage also applies to air cargo: Dubai and Abu Dhabi are central to the flow of high-value, time-sensitive, or perishable goods moving in all directions, for example



exports of high-value U.S. agricultural products or the flow to the U.S. of high fashion sewn in Asia.

Third, the two major aircraft manufacturers, Boeing and Airbus, have continued to develop aircraft capable of flying longer distances nonstop, and this has enhanced Emirates' and Etihad Airways' global reach. The two airlines operate some of the world's longest nonstops, such as Emirates' daily Dubai-Los Angeles service, 8,339 miles (13,420 km.), and Etihad Airways' Abu Dhabi-Sydney flight, 7,492 miles (12,057 km.). Indeed, both airlines' fleets are capable of reaching almost all six populated continents nonstop.

Fourth, the U.A.E. has pursued an open aviation relationship, negotiating liberal "open skies" air services agreements (often called bilateral agreements) that remove restrictions and allow true competition. For example, such an agreement was signed with the U.S. in 2002.

In 2011, Emirates ranked #9 among the world's largest airlines in operating revenue and #7 in revenue passenger miles (the customary unit of output). They currently operate a fleet of more than 190 aircraft to more than 120 destinations, with an additional 230 jets on order valued at some \$84 billion — in 2011, Emirates announced the single largest order in Boeing history.

Although not as large, Etihad Airways is the fastest-growing airline in the world, and in 2011 ranked #11 in operating profit. Etihad Airways' current fleet is 72 aircraft serving 86 destinations, and they have more than 100 aircraft on order, including a large number of Boeing 777s.<sup>2</sup>

<sup>&</sup>lt;sup>2</sup> Rankings in this section from *Air Transport World's* 'World Airline Report', July 2012.



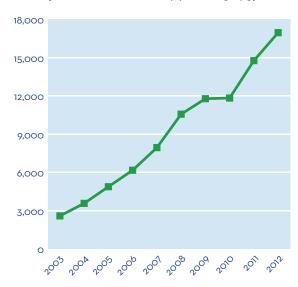
#### Nonstop Air Services from the U.S. to the U.A.E., 2013

Route	Flights per Day	Seats			
Emirates					
Dallas/Ft. Worth-Dubai	1	266			
Houston-Dubai	1	354			
Los Angeles-Dubai	1	354			
New York-Dubai	2	978			
San Francisco-Dubai	1	360			
Seattle-Dubai	1	266			
Washington, D.CDubai	1	354			
Etihad Airways					
Chicago-Abu Dhabi	1	412			
New York-Abu Dhabi	1	240			
Washington, D.CAbu Dhabi*	1	240			
United					
Washington, D.CDubai	1	267			
Delta					
Atlanta-Dubai	1	269			
TOTAL	13	4,360			

<sup>\*</sup>Begins March 31

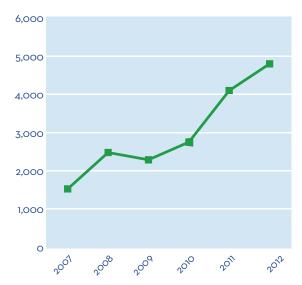
#### **Emirates Ten-year Revenue Growth**

(in Millions of Dollars; \$1 = Dh. 3.673)



#### Etihad Airways Revenue Growth Since 2007

(in Millions of Dollars; \$1 = Dh. 3.673)



#### Boeing-U.A.E. Commercial Aircraft Delivery and On-Order Summary

A • I•	Deliveries		On Order (as of 1/31/2013)	
Airline	Aircraft	Value	Aircraft	Value
Emirates (2003-present)	78	\$24.0 billion	73	\$23.0 billion
Etihad Airways	15	\$4.5 billion	47	\$12.0 billion
flydubai	27	\$2.4 billion	23	\$2.0 billion

## Goods and Services Exports to the U.A.E.

Commercial aircraft are America's largest export, and the top-ranked to the U.A.E. as well. According to the U.S. Department of Commerce, in 2012 the U.S. sold the U.A.E. \$6.44 billion in civilian aircraft, engines and parts — more than one-fifth of all exports to the country. From 2002 to January 2012, Emirates ordered 151 Boeing aircraft worth approximately \$47 billion at current list prices (airlines typically pay less than the list price, but using that measure enables consistent comparisons). As of January 31, 2013, Emirates still had on order 73 777

wide-body aircraft valued at \$23 billion — six were 777 freighters and 67 of the largest 777, the -300ER. Each of the latter lists for \$315 million.

flydubai, a Dubai-based low cost carrier (which does not serve the U.S.), has ordered 50 737-800 narrow-body aircraft worth \$4.45 billion at list price. Boeing has delivered 27, and 23 are still to be delivered, at a cost of \$2 billion (list price of the 737-800 is \$89.1 million).

And since inception in 2003, Etihad Airways has ordered 62 Boeings, 21 777s and 41 787s, and these were valued at \$16.5 billion. Future deliveries comprise six 777s and the entire 787 order, worth a total of \$10 billion.

When we think of Boeing, we think of Seattle, Washington, but because Boeing has suppliers in all 50 states, U.A.E. commercial aircraft purchases support thousands of good-paying manufacturing jobs from California to Maine. The U.S. Department of Commerce estimates that each one billion dollars in aerospace exports sustains 6,700 jobs, which means that the current U.A.E. order book (\$37 billion) will over time support more than 200,000 U.S. jobs (this total has been reduced to reflect the gap between list price and actual negotiated price). Applying this jobs estimate to 2012, airliner exports sustained 30,800 jobs.

The Boeing export totals above include the value of engines, but it's useful to look separately at exports of American jet engines — the largest supplied aircraft component — from GE Aviation and from Engine Alliance, a 50/50 joint venture of GE and Pratt & Whitney that manufactures the huge engines that power Emirates' fleet of 31 super-jumbo A380s. In five years (2007–12), GE's engine exports to the U.A.E. have more than quintupled, to more than one billion dollars. Through 2012, the U.A.E. has bought \$9.1 billion in jet engines from GE (including Engine Alliance), and current orders total \$2.5 billion.

We should also mention here that the U.A.E. is also a solid market for business jets and executive aviation. General Dynamics' subsidiary Gulfstream, one of the premier builders of large private jets, has a particularly strong presence in both Dubai and Abu Dhabi, and other U.S. makers and component suppliers have developed markets in the U.A.E.

Aircraft are the most obvious and visible export, but U.S. firms supply a significant amount of the ground equipment and aviation infrastructure, whether purchased by one of the three U.A.E. airlines or by the Abu Dhabi Airports Co., Dubai Airports, and the U.A.E. General Civil Aviation Authority. U.S. firms like CH2M HILL have been deeply involved in areas like airport planning and design; construction management; terminal hardware and furnishings; communications systems; security systems; runway and taxiway equipment; air traffic control (ATC) hardware and software, and customer-facing services, like airport retailers and dutyfree shops. At Dubai Airport, for example, 3M supplied fire-suppression systems, and York International fulfilled the largest order in its history, for 59 chillers - made in San Antonio, Texas – to cool the terminals. But midsize and small firms are winning business, too: Daktronics, a South Dakota-based firm, supplies electronic signboards

#### Parsons' Huge Abu Dhabi Airport Project

Parsons, one of the U.S.' largest engineering, construction, technical, and management services firms, is a major partner in the multibillion project to rapidly expand Abu Dhabi's main airport. Parsons serves as program manager for the effort, working collaboratively with the Abu Dhabi Airports Co. (ADAC). Specific services include program, design, and construction management. Previous projects included a new 13,500-foot all-weather runway; a large terminal building (3.5 million passengers per year) planned, designed, and built in just six months; renovation of an existing terminal; a new control tower; and a range of support systems and facilities. The biggest next step is the enormous midfield terminal, a 56-gate, \$2.7 billion project that will be four times larger than Atlanta's newly-opened international terminal, expected to open in 2017. A range of U.S. suppliers is helping Parsons with the project.

for Dubai, and the family-owned Hager Companies of St. Louis sold hinges and other door hardware.

U.S. firms have since the 1970s participated in the ongoing expansion of Dubai International Airport, which recently announced a \$7.8 billion expansion program that will increase annual capacity from 60 million to 90 million passengers by 2018. Equally, U.S. partners have been deeply involved in planning and development of Dubai's "hyper-sized" Al Maktoum International Airport, which when fully built out will be ten times larger than Dubai International.

Emirates and Etihad Airways purchase a range of airline management services, including I.T. hardware and software for commercial, operational, financial, and HR needs from giants like IBM, Microsoft, Google, Hewlett-Packard, and Yahoo, to specialized smaller companies like PROS and Farelogix. Firms like Booz Allen provide management consulting expertise. And in a contract valued at more than \$1 billion, Etihad Airways will in 2013 begin using a package of integrated software for its reservations, inventory, marketing, planning,

eCommerce, distribution and departure control operations from Sabre, the Texas-based travel-software provider.

The three airlines of the U.A.E. have also partnered with U.S. companies for provision of a range of financial, marketing, and operational services. For example, Honeywell provides maintenance support for a key component on flydubai's growing fleet of Boeing 737-800s.

Lastly, we note the encouraging rise of aviation exports **from** the U.A.E., paced by Mubadala; perhaps the most exciting development here is a contract from Mubadala subsidiary Strata to supply composite ribs for the Boeing 777 and 787, and a commitment by Boeing to increase Strata's participation in 787 aerostructures.

#### Impact at U.S. Airports

To service their 11 daily departures from their nine gateways (including Etihad Airways from Washington, beginning March 31), Emirates employs 307 U.S. citizens and legal residents, and Etihad Airways employs 68. These numbers, however, do not include the significant number of employees at the handling companies both airlines use for services inside the terminals (check-in and gates), on the ramp, and for cargo operations. United and Delta also employ U.A.E. residents to service their two daily flights to Dubai<sup>3</sup>. In a study of possible Emirates expansion in North America, the aviation consulting firm InterVISTAS calculated that each daily flight generates about 200 jobs directly at an airport, and total airport impact (including the spinoff effects described below) of approximately \$80 million per year. It's thus reasonable to extrapolate totals of more than 2,600 airport jobs and more than \$1 billion in economic benefit at just the nine airports that receive the 13 nonstops from the U.A.E.

## Direct Visitor Spending in the United States

In 2012, the four airlines (Emirates, Etihad Airways, Delta, and United) flying nonstop between the U.S. and the



2013 © Dubai Airports

U.A.E. carried 1,218,198 passengers into the U.S., and 48 percent, 586,670, were foreign visitors. These visitors' direct expenditure in the U.S. exceeded \$2.3 billion<sup>4</sup>, for hotels, restaurant meals, car rentals, visitor attractions, and the like. This total does not include visitors who arrive on Delta and United nonstops from Dubai, nor air travel on connecting carriers within the U.S.; Etihad Airways in particular has a codeshare alliance with American Airlines, while Emirates has partnerships with Alaska Airlines and JetBlue.

Using recent data from the U.S. Department of Commerce, these visitors supported an estimated 17,000 American jobs, not just in the nine gateways of New York, Washington, Chicago, Atlanta, Los Angeles, San Francisco, Seattle, Dallas/Fort Worth, and Houston, but in major tourism centers like Las Vegas and Orlando, as well as hundreds of other communities.

#### **Indirect Impact**

Economists who measure the impact of new business activity — in this case U.A.E. purchases of aircraft and related equipment and expenditure of foreign visitors arriving on nonstop flights from the U.A.E. — also include beneficial indirect effects. Indirect activity comes from those businesses that supply goods and services to Boeing and related equipment manufacturers; other aviation related firms doing business in the U.A.E.; U.S. firms that supply goods and services to the flights departing from American airports; and companies

<sup>&</sup>lt;sup>3</sup> We did not include specific Delta and United job numbers because their airport employees service flights to multiple destinations, not just the U.A.E.

<sup>&</sup>lt;sup>4</sup> The U.S. Department of Commerce survey of foreign visitor expenditure does not disaggregate by arriving airline(s). This calculation was based on a per-visitor estimated spend of \$4,000, which is conservative, and takes into account widely varying origins of visitors arriving on the four carriers.

## About the Multiplier Effect and Input-Output Analysis

Economists and geographers have been estimating the impact of new and prospective economic activity for more than 75 years, following pioneering work by Wassily Leontief, a Harvard economist. In brief, these studies examine inputs to an economy in the form of new employment and associated spending, and estimate the output effects after these initial dollars cycle through an economy, for example, as an employee spends his or her wages on food, housing, clothing, and discretionary items, as well as revenue benefits for local, state, and national governments. Methodologies have become refined through the years and the process has been extensively validated. In this report, we have purposely used conservative assumptions that carefully reflect a base level of impact. Actual indirect and induced impacts may actually be higher.

that in turn provide inputs to hotels, restaurants, and other visitor-related firms. Examples include a utility that provides electrical power to Boeing; an insurance company that underwrites risk to a U.S. software vendor to Emirates; a flight-catering company at Los Angeles; a laundry that cleans hotel linens; and the auto manufacturer who made the vehicle that the Emirates passenger rented in L.A.

#### Induced Impact

People employed directly (such as the Boeing assembly line worker, the Emirates' sales manager in Dallas, or an attractions attendant at Disney World) or indirectly (for example, an office supply company that provides paper to General Electric, or a Chicago company that delivers fresh produce to a Hilton hotel) spend their wages and salaries for groceries at the supermarket, clothing at the department store, dry cleaning and other basic services, and the full range of discretionary spending. All this spending subsequently cycles through the economy: the supermarket employee and dry cleaner also buy

products and services, and the process repeats itself several times in the local, regional, and national economy.

Indirect and induced impact is usually measured by use of economic multipliers that gauge the total impact as these two types of effects "recycle" through the local, regional, and national economy (see text box).

Using a combined manufacturing and services multiplier of 2.1 (a careful number well-matched with previous impact studies) and summing 2012 airliner exports of \$4.6 billion, inbound-visitor expenditures of \$2.3 billion, direct airport impact of \$430 million (net of spinoffs), and an estimate of \$600 million for other aviation-related exports, we conclude that the total benefit to the U.S. economy from trade with the U.A.E. in commercial aviation exceeded \$16 billion in 2012. Using the same methodology, more than 100,000 U.S. jobs were sustained last year.

Looking just at the economic benefit of U.S.-U.A.E. daily air service, which combines spending by overseas visitors arriving on the four airlines flying nonstop together with airline impact — employment, purchases, and indirect and induced effects — it's reasonable to posit a total impact of more than \$5.8 billion in 2012 (see chart). Although this benefit would accrue disproportionately to the regions adjacent to the nine gateways, spending and employment would cycle through the entire national economy.

### 2012 Estimated Impact of Inbound Tourism from the U.A.E.

Total Airport Benefit (millions)			
Atlanta	\$206		
Chicago	\$671		
Dallas/Fort Worth	\$432		
Houston	\$554		
Los Angeles	\$554		
New York	\$1,286		
San Francisco	\$554		
Seattle	\$432		
Washington, D.C.	\$775		
TOTAL	\$5,888*		

<sup>\*</sup>Does not include aircraft and related purchases; includes passengers originating in other countries and arriving in the U.S. nonstop from Abu Dhabi or Dubai; column does not sum because of rounding

## Tax and Fee Revenues to National, State, and Local Governments

At a time when public officials at all levels of government need revenues to meet budget shortfalls and future commitments, Emirati purchases of high-value goods and services and visitor expenditures are helpful. Although precisely quantifying tax and fee revenue is difficult, and beyond the scope of this report, it's reasonable to estimate income to governments at more than \$1.6 billion per year, based just on the 2012 totals above.



#### **Catalytic Benefits**

Beyond these tangible benefits to the United States and the United Arab Emirates, strong and growing air-transport links are the catalyst for further growth and development in other economic sectors, and for advancing the U.A.E.'s mission to diversify its economy. A good example is New York University's decision to build an overseas campus in Abu Dhabi; its Vice Chancellor, Dr. Al Bloom, described Abu Dhabi as "located at a new crossroads of the world," and there's no doubt that easy air access played a big part in NYU's commitment. Similarly, Cleveland Clinic's decision to build its first hospital outside the U.S., in Abu Dhabi, was premised in large measure by strong air linkages. Commercial aviation precedes or facilitates many different preconditions to economic development - flows of financial capital (you can send millions at the click of a mouse, but face-toface interaction and the relationships that result are keys to successful investment); flows of human capital, in the form of expertise of all kinds; and more. Furthermore, Emirates' and Etihad Airways' substantial cargo capacity - more than 200 tons per day from and to the U.S. is an important element in this mix, easing logistics and supply-chain management, and creating a solid hub for distribution of U.S. products in the Gulf region and beyond. Indeed, in 2012 Emirates carried over 220,000 tons of cargo between the U.S. and Dubai, and Etihad Airways flew more than 80,000 tons to and from Abu Dhabi, some on dedicated freighter aircraft. On the U.S. side, Delta and United also fly cargo, and the all-freight National Air Cargo, based in New York, is one of the pioneers at the new Al Maktoum International Airport, helping Dubai World Central emerge as a global cargo hub.

#### Conclusion

As we have seen, trade in the commercial-aviation sector provides significant benefit to the economies of both the United States and the United Arab Emirates, especially to the former. Thousands of good-paying manufacturing jobs, knowledge-based positions, employment in inbound tourism, and the synergistic effects as income is spent and re-spent in the domestic economy all contribute. Moreover, these effects are not focused in just a few centers, but broadly distributed throughout the U.S., from major centers like New York, to small towns everywhere. And perhaps best of all, this relationship will continue to grow at a pace that far exceeds growth in the rest of the economy, driven by continued rapid expansion at Emirates and Etihad Airways.

But we would be remiss in closing if we did not lift up a wonderful intangible of all this activity: the positives that flow from human interaction, from traveling to new places and getting to know each other, whether for business, or vacation, or to visit friends and relatives. When we do that, the world becomes, little by little, a safer, more peaceful, and more tolerant place. Wings between our two countries are a powerful force in so many ways.



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