# \*\*\* Airlines Disad \*\*\*

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#### The Airline Industry is stable but profits are razor thin and on the brink

Wall Street 12 [Global Airline Industry Loses Lift Posted: June 7, 2012 at 6:29 am http://247wallst.com/2012/06/07/global-airline-industry-loses-lift/#ixzz1x8xU1Kfv]

The global airline industry is no where close to recovery according to the head of its largest trade association. “Oil prices are high, although moderating somewhat from recent peaks. The European sovereign debt crisis is unresolved and we are seeing signs that it is starting to affect Asia’s export-driven economies. And the largely jobless recovery from the 2008 global financial crisis is proceeding at a glacial pace. Passenger demand is strong, cargo is weak and the industry’s profitability remains razor thin,” said Tony Tyler, IATA’s Director General and CEO. The IATA is expected to revise downward its 2012 industry outlook for a $3.0 billion profit on $633 billion in revenues for a net margin of 0.5%. The news means that carrier consolidations are not over. More and more airlines will seek saving in mergers meant to cut duplicate costs. Northwest and Delta (NYSE: DAL) and United (NYSE: UAL) and Continental have already done this in the US. US Airways (NYSE: LCC) has expressed interest in buying the American Airlines assets from its bankrupt parent AMR. That does not leave any room for more mergers in the US. Too much market share rests with too few carriers.

Government subsidized high speed rail would be a disaster for the aviation sector—Spain proves

Webb 2009 [Dan, Aviation reporter, <http://boardingarea.com/blogs/thingsinthesky/2009/04/21/should-airlines-fear-high-speed-rail/>]

I was reading [Marshall Jackson’s blog](http://boardingarea.com/blogs/mjontravel/2009/04/18/random-reflections-on-the-week/) this weekend and noticed he had mentioned that President Obama has revealed his initial plans for high speed rail in this country. I asked myself if an expansion could hurt the airlines. Short answer: absolutely. One notable example is the Madrid – Barcelona route, which has [historically been the world’s busiest](http://gospain.about.com/b/2007/12/28/madrid-barcelona-is-worlds-busiest-flight-route.htm). In February last year, a high speed rail line was opened between the two cities. While I don’t have the exact decrease in frequencies, take a look at this part in the notes to [Iberia’s February traffic results](http://grupo.iberia.es/portal/site/grupoiberia/menuitem.510753be79bbec04e633c4c3d21061ca/?canalPadre=Informacion+Operativa+y+Financiera&anio=2009&mes=1075590000000&image.x=39&image.y=9): According to the new Strategic Plan, the company reduced capacity in the domestic sector by 21.6%, leading to a load factor of 68.7%, similar to the level reached in February 2008. Average stage length grew by 6.5% in this sector, due to the higher reduction of capacity in flights between Barcelona – Madrid (this route began to be operated by the high speed train on the 20th of February 2008). Edit: According to this [Wall Street Journal article](http://online.wsj.com/article/SB124018395386633143.html?mod=googlenews_wsj), the high speed trains have ” snatched half the route’s air-passenger traffic.” (Hat tip to my dad for the link.) Some airlines here in the States could definitely be hurt by a high speed rail expansion. Any further improvement in the Northeast Corridor could negatively affect the Delta and US Airways shuttle operations, and I agree with Marshall that Southwest would get hurt (I think the intra-Texas and intra-California routes especially). If this is ends up being an expansion of Amtrak, I’m very worried when it comes to competition with the airline industry. The air carriers are motivated by profits and losses (as they should). If a route isn’t performing well, the airline will adjust accordingly by either eliminating the route or trimming capacity, and the opposite happens on successful routes. Meanwhile, a government-funded train system with guaranteed funding can continue operating despite being unprofitable, making true competition difficult.

#### Aviation key to the economy – jobs and manufacturing

NBAA 9 (National Business Aviation Association, “General Aviation Industry Hurting During Economic Downturn”, 3-30, http://www.nbaa.org/advocacy/issues/economic-downturn/recession.php)

General aviation is an essential economic generator directly or indirectly employing over 1.26 million people nationwide according a 2006 economic study by Merge Global. These jobs generate $150 billion in economic activity across the United States, including states like California ($18B), Texas ($11B), Georgia ($9B), and Kansas ($7B). Our industry is continuing to build a strong American manufacturing and employment base that contributes positively to our national balance of trade. Congress recognized just how fundamental general aviation is to our nation's transportation system, rural economies, manufacturing capability, and balance of trade when it passed the General Aviation Revitalization Act a little more than a decade ago. There's no question that in communities across the country, general aviation means millions of jobs: jobs in aircraft manufacture (the U.S. industry leads the world), jobs for people in small towns (where companies use airplanes to reach new markets), and jobs in flight support (including schedulers, dispatchers, maintenance technicians, pilots, training professionals, and airport employees to name just a few examples). Unfortunately, the people and businesses in general aviation are weathering one of the worst economic storms anyone has ever seen. The impact of the flagging economy on the companies and communities that rely on general aviation is visible in all parts of the country. Following are some examples: GA Manufacturing has been hit hard by the economy The general aviation industry supports highly skilled, well-paying jobs for engineers and manufacturing line workers who design and build aircraft in places like Savannah, Wichita, and Little Rock and for hundreds of component manufacturers such as GE, Honeywell, and Pratt and Whitney that supply them with parts including many small businesses. GA is an important national industry that contributes greatly to the economy and to local tax bases. These suppliers also contribute extensively to aircraft produced by foreign companies like Dassault, Embraer, and Bombardier. The collective direct earnings of general aviation exceed $53 billion. Layoffs The industry started feeling the effects of the downturn last fall and since then US members of the General Aviation Manufacturers Association (employing 144,000 people in the U.S.) have laid off over 12,155 people to adjust to the economy with thousands more among suppliers and additional layoffs pending. In addition, some general aviation manufacturers, including Adam Aircraft and Eclipse Aviation, have declared bankruptcy and ceased production. Backlog and Loss of Orders Our industry held a record backlog of $83 billion at the end of the third quarter 2008, but it is rapidly shrinking. Customers are not placing orders which results in the backlog shrinking by $6-7 billion each quarter. Customers are also cancelling or delaying orders as they manage their own finances and schedule for capital purchases. At the same time, the used aircraft market is saturated with inventory levels for business jets reaching over 17%. Criticism of business aviation risks further flooding the used aircraft market and depressing prices. Exports Our industry is a strong contributor to U.S. exports with a total of 1,161 airplanes exported in 2008. The export billings reached $5.86 billion. The aggregate aviation industry, including GA has a positive impact on the US trade balance. Our exports accounted for 43.9 percent of the total value of U.S. manufactured general aviation airplanes in 2008. GA Flight Activity is in Decline According to FAA data, overall general aviation traffic volumes in January 2009 are down 23% compared to January 2008. The same data reports the change in business jet operations is a decline of 28.3 percent for January 2009 compared to January 2008 year-over-year. Small airports are operating ‘in the red' There are more than 5,000 public use airports located in communities across the country. Approximately 470 of these airports have commercial airline service – making general aviation a critical lifeline for smaller communities. Many of these smaller airports are seeing their revenues plummet as general aviation flight hours decrease. For example, Aviation International News recently reported that: "A decline of nearly 20 percent in jet fuel sales has helped drag the Salina Airport Authority's 2008 budget into the red. The airport authority gets 6.6 cents from every gallon of jet fuel sold at the airport. That surcharge provides almost an eighth of the authority's operating revenue. ‘It confirms that business jet use and travel is down,' said Tim Rogers, executive director." The bottom line is that the people and businesses in general aviation are subject to the sluggish economy just like everyone else. And all the information available confirms that when a recession hits general aviation, the impact is felt all across America's economy.

#### Collapse causes extinction

Kemp 10 (Geoffrey, Director of Regional Strategic Programs – Nixon Center and Former Director of the Middle East Arms Control Project – Carnegie Endowment for International Peace, The East Moves West: India, China, and Asia’s Growing Presence in the Middle East, p. 233-234)

The second scenario, called Mayhem and Chaos, is the opposite of the first scenario; everything that can go wrong does go wrong. The world economic situation weakens rather than strengthens, and India, China, and Japan suffer a major reduction in their growth rates, further weakening the global economy. As a result, energy demand falls and the price of fossil fuels plummets, leading to a financial crisis for the energy-producing states, which are forced to cut back dramatically on expansion programs and social welfare. That in turn leads to political unrest: and nurtures different radical groups, including, but not limited to, Islamic extremists. The internal stability of some countries is challenged, and there are more “failed states.” Most serious is the collapse of the democratic government in Pakistan and its takeover by Muslim extremists, who then take possession of a large number of nuclear weapons. The danger of war between India and Pakistan increases significantly. Iran, always worried about an extremist Pakistan, expands and weaponizes its nuclear program. That further enhances nuclear proliferation in the Middle East, with Saudi Arabia, Turkey, and Egypt joining Israel and Iran as nuclear states. Under these circumstances, the potential for nuclear terrorism increases, and the possibility of a nuclear terrorist attack in either the Western world or in the oil-producing states may lead to a further devastating collapse of the world economic market, with a tsunami-like impact on stability. In this scenario, major disruptions can be expected, with dire consequences for two-thirds of the planet’s population.

# UQ

### Brink - Profits/Fuel/Baggage

#### Fuel and baggage fees put airlines on the brink

Wall Street Journal, May 17 [“BTS: US Airlines 4Q Operating Profit Slumped 30% Despite Higher Revenue <http://online.wsj.com/article/BT-CO-20120517-710827.html>]

The Bureau of Transportation Statistics said U.S. airlines recorded a 30% year-over-year drop in operating profit in the fourth quarter, underscoring the ongoing challenge of high costs to fuel planes. The BTS, a unit of the U.S. Department of Transportation, said the airline industry's operating profit slumped to $1.15 billion in the fourth quarter, down from $1.64 billion a year earlier. Operating revenue, meanwhile, rose 6% to $46.65 billion. Many airlines have reported deteriorating profitability in recent quarters as climbing fuel costs chip into revenue gains. As part of their fourth-quarter revenue, airlines collected $792 million in baggage fees, down from $828.8 million a year earlier. Fees to change flight reservations totaled $567.1 million from October to December 2011, up slightly from $559.5 million in the same period a year earlier.

#### Airlines are doing great now but have a low margin for error

VPR News 12 [“ Transcript Good Times For Airlines, So Where Are The Deals?” June 6, http://www.vpr.net/npr/154441184/]

The rest of the economy may not be doing great, but airlines are expecting a banner year. Profitability is up and fuel prices are declining, but that's not necessarily great news for consumers. When Robert Herbst, a former pilot and industry consultant for many years, says the skies are blue, it sounds pretty convincing. And from Herbst's projections, this may be a historic year for the airline industry. Airlines are better at playing the supply-and-demand game to their advantage by consolidating and becoming more efficient, Herbst said. Flights are down in the past decade, which helps fill empty seats and raise ticket prices. "Having the airlines profitable, I think, is much better for the consumer in the long run than it is to have these constant stream of airlines going in and out of business," he said. Airlines run on tight profit margins of about 3 percent. Herbst said higher margins may mean companies will start investing in customer service again.

### Stable – Travel + Oil

#### Slight drops in fuel prices and increased international travel mean airlines are stable

WSJ MarketWatch 12 [5-28, US Airways and JetBlue Airways Look to Benefit From Dropping Fuel Costshttp://www.marketwatch.com/story/us-airways-and-jetblue-airways-look-to-benefit-from-dropping-fuel-costs-2012-05-28]

Airline stocks posted some impressive gains recently. The Bloomberg U.S. Airlines Index (BUSAIRL) of 10 carriers on Thursday jumped as high 6 percent, the largest gain since Jan. 25. During the first quarter, historically the slowest of the year, collectively the top seven U.S. airlines have posted an operating profit of $247 million compared with a moderate loss a year ago according to data collected by the Deutsche Bank. Five Star Equities examines the outlook for companies in the Airlines Industry and provides equity research on US Airways Group, Inc. LCC -4.16% and JetBlue Airways Corporation JBLU -0.97% . The high price of fuel has always been one of the biggest costs for airline companies. The commodities market has provided a timely windfall for the industry as they are just about to enter their peak summer travel season. Jamie Baker, JPMorgan Chase airline analyst, has recently stated that since February fuel costs have dropped by $0.40 per gallon, amounting to a $5.5 billion savings for the industry. Airlines for America's predict a record number of passengers to fly internationally this summer. Total passengers on international flights are forecasted to total 26.8 million, beating last summer's record of 26.3 million according to the group.

#### Oil prices are dropping—*airlines now have a slightly higher margin for profitability*

*Forbes 12 [june 6, Airline Stocks Flying High After Big Correction In Oil Prices, http://www.forbes.com/sites/afontevecchia/2012/06/06/airline-stocks-flying-high-after-big-correction-in-oil-prices/]*

Oil prices have suffered a substantial correction over the last couple of months, with US benchmark WTI even falling more than 20% in May. With crude trading in the mid-eighties, falling prices should bring some relief to consumers, particularly at the pump, but they also provide an investing opportunity: airlines, which last year consumed 36% of their revenues in jet fuel. It’s been a wild ride for crude traders in 2011, with benchmark WTI oil futures topping $110 per barrel in February, and now tumbling all the way to $85.43, as of Wednesday’s close. While prices remain relatively high, in part due to underlying geopolitical concerns according to OPEC, the substantial drop should prove bullish for the economy and certain stocks. In particular, airline stocks. A report by S&P Capital IQ released on Wednesday suggests shares in airlines will continue to benefit as fuel prices retreat. In 2011, the U.S. airline industry consumed 16.4 billion gallons of jet fuel, costing them approximately $47 billion. Indeed, this is 36% of the industry’s 2011 revenues, “leaving little room for profitability,” S&P’s Jim Corridore argued. But, as the tide has turned, so has the outlook for airlines. Oil prices could fall even further, as I explained in a piece on the crude oil market, with WTI possibly hitting $75 by the end of the month. The sustained decline would be good for the industry “so long as the drop is not due to such a severe economic downturn that passengers stop flying.”

# *Link*

### Empirics

#### HSR collapses the airlines industry—world empirics prove

Fu, Zhang, and Lei, 2011 [ Xiaowen Fu a,\*, Anming Zhang b, Zheng Lei , a Faculty of Business, Hong Kong Polytechnic University, Hong Kong, China b Sauder School of Business, University of British Columbia, Canada c Department of Air Transport, Cranfield University, UK, “Will China’s airline industry survive the entry of high-speed rail?”, Research in Transportation Economics 35 (2012) 13e25]

3. Competitive effect of HSR on airlines Sharp competition between HSR and airlines has been witnessed in markets around the world, particularly in short to medium routes linking metropolitan cities. HSR was introduced to Spain in 1992 with the opening of the 472 km MadrideSevilla line. The rail share of the whole air þ rail market increased from 21% in 1991 to 82% in 1993. In the LondoneParis route, EuroStar has, since introduced in 1994, captured about 80% of the point-to-point traffic (Steer Davies Gleave, 2006). The Taiwan High Speed Rail (THSR) started operation in January 2007, linking Taipei and Kaohsiung along the west coast with a total distance of 335.5 km. In less than three years, THSR has eliminated intra-Taiwan air travel services. In South Korea, the opening of HSR between Seoul and Busan in 2004 has significantly reduced air traffic between the two cities. The International Transport Forum (2009) reported that domestic air traffic in France declined by 7% between 2000 and 2007, which was mostly attributable to the increased availability of HSR connections.

#### HSR trades off with air routes and outcompetes due to access to city centers—China and Europe prove

The National 10 [Daniel Bardsley, Foreign Correspondent, March 20th <http://www.thenational.ae/business/full-throttle-on-high-speed-rail>]

While high-speed trains may be popular with passengers, they can cause turbulence to the airline industry. The rolling stock may not be as fast as an aircraft, but as the trains run directly into city centres they can be more attractive than flying, even for business travellers. No wonder then that airlines have cut prices to stay competitive. China Southern Airlines used to charge a reported 700 yuan to fly between Guangzhou and Changsha, which lies on the line to Wuhan. This month, passengers could buy tickets online from the carrier for as little as 170 yuan. In Europe, airlines have dropped some routes between major cities altogether as a result of competition from high-speed railways. Mr Sangiambut believes China's airlines will be put further on the back foot by new train routes. Flights of less than two hours, he says, would be "very much impacted" if high-speed trains start operating the same route. "They will come under pressure when these high-speed networks become more fully operational," he says. "I don't think they will be closed entirely, but frequency could be reduced." The price of a Beijing-Shanghai high-speed train ticket has not been announced yet, but Mr Sangiambut says the ministry of railways will ensure it is "rather competitive" with flying. As a result, he thinks the Beijing-to-Shanghai air route will suffer when the high-speed rail line opens and cuts the rail trip from 10 hours to four hours. "There will be some impact for sure," he says.

#### Competition with rails crushes airline industry—similar policies dropped industry growth by 295% in china.

Wall Street Journal 11 [China’s airline-industry growth set to slow

Caixin Online Competition with high-speed rail a factor, says regulator<http://articles.marketwatch.com/2011-12-28/industries/30750280_1_high-speed-rail-airline-industry-global-air-market> ]

BEIJING (Caixin Online) — China’s airline industry is expected to see tepid profits in 2012, as passengers increasingly switch to high-speed rail service. According to the Civil Aviation Administration of China, profits for the airlines industry are expected to rise by 5.1% percent to 45.6 billion yuan ($7.2 billion) this year. But the pace of growth has paled against the 300% surge in 2010, said Li Hun, vice director of the Civil Aviation Administration of China, at an industry conference on Monday. In addition to rivalry from an increased number of domestic high-speed rail links put into operation, business prospects for China’s airline industry are dimming on a slackened global air market, rising oil prices and the weak capabilities of air companies to cope with rising challenges, said Li. Chinese airlines have already postponed imports of 60 airplanes in 2011, with the full-year addition of new planes at no more than 150, said Li.

#### China proves—airlines cannot compete with HSR

Fu, Zhang, and Lei, 11 [ Xiaowen Fu a,\*, Anming Zhang b, Zheng Lei , a Faculty of Business, Hong Kong Polytechnic University, Hong Kong, China b Sauder School of Business, University of British Columbia, Canada c Department of Air Transport, Cranfield University, UK, “Will China’s airline industry survive the entry of high-speed rail?”, Research in Transportation Economics 35 (2012) 13e25]

In summary, Chinese airlines have been unable to compete with CRH on the short-/medium-haul routes even with cost-based pricing. This poses a serious challenge to Chinese airlines as their costs have been increasing. During 2005e2010 Chinese RMB appreciated by more than 20% against the US dollar, which significantly reduced Chinese carriers’ cost leadership in the international market as evidenced in Table 4. Such a currency appreciation has been a blessing overall, since Chinese airlines derive most of their revenue from domestic markets while finance majority of their fleets purchase with debt in US dollars. Goldman Sachs (2010a) estimated that for the “big three” carriers, namely Air China, China Eastern and China Southern, their RMB based sales account for 70e80% of their revenues, while non-RMB based debt account for 70e87% of their total debts. However, if Chinese airlines have to rely more on international business due to increased competition in domestic market, appreciation of RMB will work against them.

### Convenience

#### High Speed Rail will out-compete airlines – length and easy

Kantor 9 [ County Bank Professor of Economics University of California, Merced The Economic Impact of the California High-Speed Rail in the Sacramento/Central Valley Area prepared by: Shawn Kantor, Ph.D.]

The most direct benefit of the HSR would be that it would provide the opportunity for long-, intermediate- and relatively short-distance trips, serving a wide range of travelers, whether for business, daily commuting, or leisure. The high-speed train would be a strong viable transportation alternative for relatively longer distance travel as door-to-door travel times would be comparable to air travel and less than one-half as long as an automobile trip. Moreover, for some voyages between cities that are presently un-served or under-served by air transportation, HSR travel times and convenience will make that mode of transportation significantly more attractive than air or automobile travel. The objective research shows that high-speed train travel provides a relatively safe, reliable, efficient, and cost-effective means of transportation.

#### HSR trades off with air—more convenient

Fu, Zhang, and Lei 11 [ Xiaowen Fu a,\*, Anming Zhang b, Zheng Lei , a Faculty of Business, Hong Kong Polytechnic University, Hong Kong, China b Sauder School of Business, University of British Columbia, Canada c Department of Air Transport, Cranfield University, UK, “Will China’s airline industry survive the entry of high-speed rail?”, Research in Transportation Economics 35 (2012) 13e25]

HSRs have advantage in “generalized traveling time” in short and medium-distance routes. Although it takes less time to fly over the same station-to-station distance, air passengers may spend more time in traveling because they need to arrive at the airports much earlier for boarding and security check. In addition, railway stations are normally closer to downtowns and have better land transportation networks compared to airports. Goldman Sachs (2010a) reviewed 20 major HSR routes in the world and found HSR travelers spend 92% of the journey time on train, vs. 62% for air travelers on planes. The optimal operation distance for high-speed railways is within 3e4 h, with its time advantage disappearing for travel requiring more than 4 h.World Bank (2010) reported that the average distance traveled by passengers on the Chinese railway system has increased from 275 km in 1990 to 534 km in 2008. This probably translates to an average en-route time of 3e4 h given the low HSR penetration rate during this period. The maximum running speed of newest CRH service reached 380 km/h in 2010 which translates to about 300 km/h average speed depending on the number of stops along the line.11 However, in early 2011 it was decided by the Ministry of Railways that the maximum speed will be reduced to 300 km/h. A rough estimation suggests that CRH may be competitive for city pairs up to 1200 km apart (300 km/h 4h or 250 km/h 4 h 50 min) considering the relatively low per capita income and thus low value of time in China. Table 3 reports the Chinese domestic air travel distribution by distance in various years since 2001. Although domestic traffic volume has increased dramatically since then, the distribution by route distance has remained stable in terms of available seats or frequency. Overall, routes below 1200 km account for over 60% of total domestic air capacity. Since air traffic in China is concentrated in links to majorcities which will have HSR service, a significant proportion of those markets will face HSR competition in the future.

#### Rail out competes—multiple warrants

Jorritsma 9[Peter, writer for Aerlines, a dutch aviation magazine, <http://www.aerlines.nl/issue_43/43_Jorritsma_AiRail_Substitution.pdf>, issue 43]

Introduction Competition between high-speed trains (HST) and airplanes is becoming a hot issue again nowadays. High fuel prices and the introduction of a so-called ecological surcharge in the Netherlands on airplane tickets have put pressure on airline companies, and have created new opportunities for high-speed rail transport. Eurostar recently announced it experienced a 20 per cent growth in passengers over the last six months, compared to the same period in 2007. This has been due to improved travel times between Brussels and London and between Paris and London. Eurostar did not mention whether passengers substituted from the airplane or car, nor is it clear if the growth can be attributed to a generation effect (i.e. new journeys). Airline companies have also taken a slice of the pie of high speed transport. KLM /Air France participate together with Dutch Railways in the High Speed Alliance (HSA) which operates the Thalys trains on the Amsterdam-Paris route. Passengers will be transferred from the airplane to the trains at the airline hub with their ticket booked by the airline company. Factors Influencing Substitution Many factors influence the market shares between the airplane and high-speed trains. According to the literature, travel time is the most important one. Barron (2007) reports market shares ranging from 10 percent to 97 percent for HST compared to the airplane. The HST has a clear advantage over the airplane on city pairs with travel times between two and three hours. The train can achieve market shares of between 50 and 90 percent. Good examples are city pairs such as Paris-Lyon, Madrid-Seville and Rome-Bologna. The Thalys high-speed train on the Amsterdam-Paris (4 hours) route, which is not yet in full operation, already has a market share of approximately 45 percent compared to the airplane. Other factors that contribute to the relative position of rail to air are ticket prices, frequency of the service, the integration of networks, airline alliances, accessibility of railway stations and airport terminals, reliability and punctuality of the services and government policy. In general, the ticket price for high-speed rail travel is lower than for air travel, and this difference is reflected in the market share, which is in favor of the HST. However, the rise of low cost air carriers has put pressure on overall ticket prices in the air market. On certain city pairs (i.e. LondonEdinburgh), low-cost carriers even offer tickets below the price of a train ticket. Unfortunately, hardly any research is available about the impact of low-cost carriers on the substitution rate. Eisenkopf (2006) estimates a substitution rate from rail to air ranging from 5 per cent (Cologne- Hamburg) to 13 per cent (Cologne-Munich). Travel time and travel costs to and from the airport terminal to the city center or downtown area determine the accessibility of the airport. On the route Madrid-Barcelona, the average travel time and travel costs from the city to the airport are relatively low. That is one of the reasons for the high market share of the airplane on that route. On the other hand, the highspeed train has a significant market share on the Paris-London route, despite its high ticket price. Poor accessibility of both airports by train and road is probably a factor that has a certain influence (Steer Davies Gleave, 2006). The operators of high-speed rail services find reliability and punctuality important factors that contribute to higher market shares. For example, the punctuality of the Eurostar (the share of trains with, at the most, a 15 minutes deviation from the timetable) has increased from 79 per cent since it started operations to 89 per cent today. Eurostar claims that punctuality is as important as improving travel time. Improved punctuality makes it also attractive for business travelers to plan their return journey over longer distances on the same day.

### Vested Interest

#### Subsidized and permanent infrastructure means rail will out compete—vested interest

Fu, Zhang, and Lei 11 [ Xiaowen Fu a,\*, Anming Zhang b, Zheng Lei , a Faculty of Business, Hong Kong Polytechnic University, Hong Kong, China b Sauder School of Business, University of British Columbia, Canada c Department of Air Transport, Cranfield University, UK, “Will China’s airline industry survive the entry of high-speed rail?”, Research in Transportation Economics 35 (2012) 13e25]

It should be noted that there is little room for airlines to lower prices further, as current fares are already close to cost. The Cost per Available Seat Kilometer (CASK) of China Southern in the first half of 2010 is about 0.48 RMB, whereas the flight operation cost excluding depreciation, maintenance, airport and ATC costs per CASK is 0.26 RMB. Even with a load factor of 85%, for service over a distance of 1000 km this translates to a total cost of 565 RMB or marginal/operational cost of 306 RMB.15 However the HSR is barely a winner. Based on the estimation in the previous section, the operational cost, interests cost and depreciation per seat amounted to 200 RMB, 260 RMB and 300 RMB respectively. The current fare of 490 RMB only covers variable costs and a proportion of fixed costs. However, once the HSR infrastructure has already been invested, market outcome will be determined largely by marginal costs. Besides, while it is relatively easy for airlines to re-deploy their fleets, rail operator faces great exit barrier and thus would continue to compete aggressively so long as price is larger than marginal cost. With current cost structure, airlines can barely compete on this route for point-to-point travelers.

# Internal Links/Impacts

## Aviation K2 Econ

### Other Sectors

#### Aviations key to other industries

DoT 11 (U.S. Department of Transportation, Federal/Aviation Administration, August 2011. “The Economic Impact of Civil Aviation on the U.S. Economy” p. 36 <http://www.faa.gov/air_traffic/publications/media/FAA_Economic_Impact_Rpt_2011.pdf>)

Air transportation is a key enabler for other industries such as tourism or industries that transport goods by air. Low fares and increased flight availability increase passenger travel, benefiting the tourism industry and other companies that require business travel, and also help industries that rely on air freight to transport high-value goods. As technology improves, relative fares and costs fall as flight availability rises, facilitating productivity and output gains in these industries. Transportation services provided by air carriers stimulate activity in other parts of the economy. For example, when air passengers reach their destinations, they spend money on hotel accommodations and food services, entertainment, sightseeing tours and so on. In addition, businesses that produce relatively high-value or perishable goods may prefer to ship their products to customers by air. 42 In 2008, the value of commodities shipped by air was $72,516 per ton, far higher than any other mode of transportation.

### GDP Proves

#### Economic success depends on aviation – GDP proves

DoT 11 (U.S. Department of Transportation, Federal/Aviation Administration, August 2011. “The Economic Impact of Civil Aviation on the U.S. Economy” p.3 <http://www.faa.gov/air_traffic/publications/media/FAA_Economic_Impact_Rpt_2011.pdf>)

In 2009, civil aviation supported over 10 million jobs, contributed $1.3 trillion in total economic activity and accounted for 5.2 percent of total U.S. Gross Domestic Product (GDP). Civilian aircraft engines, equipment and parts also contribute $75 billion toward the U.S. trade balance. Civilian aircraft engines, equipment and parts have been the top net export for the past decade. Our economic success clearly depends on the success of aviation. So the Federal Aviation Administration (FAA) is committed to providing the safest, most efficient aerospace system in the world. As we move forward, the FAA will continue to invest in airports, and build the Next Generation Air Transportation System (NextGen). NextGen is a transformation of the National Airspace System. It will add a suite of 21st century technologies and procedures to make air travel more efficient and green. FAA’s Destination 2025 will provide the strategic bridge to accomplish the NextGen vision.

#### Airlines makes up the largest sector of economy

Kelly 8 (Gary, Chief Executive Officer of Southwest Airlines, CEOpinion: Airline Inudstry Very Fuel-Efficient, <http://www.thecro.com/node/620>)

The problem of greenhouse gas (GHG) emissions and the resulting climate change is one that faces all of us—as individuals, but also as corporations. The backbone of the aviation industry is helping individuals go, see and do in a time-effective manner. If we don’t address the problem of GHG emissions, there will not be natural places to go, a world to see or things to do. We, as an industry, are highly motivated to preserve the natural world around us. Southwest Airlines and the entire airline industry have a great story to tell about improving fuel efficiency and reducing GHG emissions. Compared to other industries, and even other modes of transportation, the airline industry is incredibly fuel-efficient and continues to improve efficiency with investments in new technology and by adopting new operational procedures. We are driven to be as fuel efficient as possible because, not only is it the right thing to do, frankly, it’s good business. Fuel accounts for an incredibly large portion of any airline’s operating costs. And thus, we have every reason in the world to be as fuel (and carbon) efficient as possible. We are constantly searching for ways to reduce our fuel costs. When we reduce our fuel consumption, we help both the environment and our bottom line. Any government solution to climate change should leverage this economic reality. According to a recent study, “Commercial Aviation and the American Economy,” the airline industry, which includes both passenger and cargo carriers, is a major driver of economic activity, especially in the United States, where the airline industry is directly responsible for 5.8 percent of gross economic output and 8.8 percent of national employment. Despite our role in being a major generator of economic activity, airlines account for only about 2 percent of GHG emissions in the United States and 3 percent worldwide. Again, the airline industry delivers more value to the economy while maintaining a low carbon footprint because we are constantly improving our fuel efficiency. The industry has already contributed to the reduction of emissions through technology and efficiency. The industry has improved its fuel efficiency—and hence GHG efficiency—by 103 percent between 1978 and 2006.

### Jobs and Production

#### Aviation is the core of our economy – jobs and production

ATA 10 (Air Transport Association, “When america flies, it works 2010 Economic Report” p. 5 <http://www.airlines.org/Documents/economicreports/2010.pdf>) MJA

The theme for this year’s economic report – When America Flies, It Works – was chosen to communicate the critical role that commercial aviation plays in virtually every facet of our economy and our daily lives. As the national and world economies begin to recover from the serious turmoil of the recent past, it is a particularly opportune time to focus on the contributions that a strong commercial aviation sector has, can and will make to a revitalized job market and a brighter future for everyone. Some of the most recent government data tells us that commercial aviation helps generate more than $1.2 trillion in economic activity and almost 11 million U.S. jobs. Remarkable, but like a lot of statistics, the raw data does not always connect us to the real story – the faces and families that numbers can never fully capture. The story is not just about the important business trip, the quick family vacation or the more than half a million jobs in the airline industry. Nor is it just about the travel and entertainment industry jobs or the jobs in the emerging market for sustainable alternative aviation fuels, which the airlines are leaders in pursuing, or the more than a million other jobs of every description that are generated with every aviation job. It is not just about the farm worker in California producing fresh lettuce for the New York market or the Alaskan boat captain delivering tomorrow’s salmon for the Florida restaurant trade. It is not just about the Internet-enabled catalog business that delivers products and supplies across the country with the click of a mouse – or the job multiplier that this economic activity produces. It is, in fact, about all of these and millions upon millions more jobs – and the faces and families they represent – that are created, fostered and powered by commercial aviation.

#### Airline industry is crucial to the US economy

Cambell 6 (Hill, The Campbell Hill Aviation Group, Aviation and Research Consultants, “CommercialAviation and the American Economy,” March 2006,

http://www.smartskies.org/NR/rdonlyres/E20C3048-9FD4-46D8-91F1-6303C4148C5A/0/CommercialAviationEconomyMar06.pdf)

The U.S. civil aviation sector (including air transportation, related manufacturing and air-based travel and tourism) wascollectively responsible for $1.37 trillion of national output in 2004, supporting 812.3 million U.S. employees and $418billion in personal earnings. Commercial aviation accounts for the majority of this impact with $1.2 trillion in output,$380 billion in earnings and 11.4 million jobs. U.S. Civil Aviation Economic Impact (2004) Commercial AviationGeneral Aviation Total Output (Billion $) 1,247 118 1,365 Earnings (Billion $) 380 38 418 Employment (000)11,393 956 12,349 The national economy is highly dependent on commercial aviation, which, in 2004, was directly orindirectly responsible for 5.8 percent of gross output (i.e., economic activity), 5.0 percent of personal earnings and 8.8percent of national employment. Commercial Aviation Impact as Share of U.S. Economy (2004) 8.8% 5.0% 5.8% Employment Personal Earnings Gross OutputThe direct impact of commercial air transportation and related industries in 2004 was estimated at $247 billion in gross output, $72 billion in earnings and over a million jobs.Commercial air transportation was the primary source of direct impacts, with $130 billion of output, followed by aircraft and related manufacturing ($75 billion), air expresscouriers ($24 billion) and air transportation support goods and services ($18 billion).The indirect impact of expenditures by commercial air travelers creates an additional $191billion of gross output, $67 billion of earnings and 3.3 million jobs. The lodging and food industries account for more than half of the total output impact, with retail shopping,recreation and entertainment and ground transportation spending also top-impact sectors. The direct and indirect impacts of commercial aviation generate additional “induced”impacts as industry revenues and employee earnings are used to purchase goods and services from other industries. The service sector accounts for nearly half of the $1.25 trillionin total national impact, both through travel and tourism services and support to both direct and indirect impact industries. 1 The total impact of commercial aviation is comparedto national aggregates of Gross Output and Personal Earnings (from the Bureau of Economic Accounts) and Total Covered Employment (from the Bureau of Labor Statistics) for the 50 states and the District of Columbia combined. Commercial Aviation Total Impacts = $1.25 Trillion of U.S. Economic Activity Transportation & Warehousing 18%Manufacturing 20% Services 47% Trade 11% All Other 4% The distribution of national impacts by state was determined by the location of airports, tourist destinations, businesstravel centers and aviation-related manufacturing plants, as well as the location of industries supporting the direct and indirect impact industries. California was the top-impactstate, with $203 billion of gross output impacts, followed by Texas, Florida, Georgia and New York. Top Five States in Total Impact (Billion $) $202.6 $126.9 $93.6 $72.7 $59.5California Texas Florida Georgia New York The distribution of impacts by congressional district was similarly based on local industrial patterns, with the top districts being either tourist destinations (Hawaii and Las Vegas area) or top aviation manufacturing centers (Western Washington). Top Five Congressional Districts in Total Impact (Billion $) $9.6$8.9 $8.7 $8.2 $7.8 District 1, Hawaii District 2, Hawaii District 3, Nevada District 8, Washington District 1, Nevada ii Introduction This report summarizes the estimated impactof commercial aviation on individual U.S congressional districts in 2004. The impact estimates are based on a model that allocates national and state-level impacts derived usingsecondary economic and transportation data sources of the federal government.[2](http://64.233.167.104/search?q=cache:0KSC4Ou2RWAJ:www.smartskies.org/NR/rdonlyres/E20C3048-9FD4-46D8-91F1-6303C4148C5A/0/CommercialAviationEconomyMar06.pdf+%22commercial+aviation+and+the+american+economy%22&hl=en&ct=clnk&cd=1&gl=us&client=firefox-a#7)The district-level estimates use Census of Population employment data for 2000 as allocated tothe 109 th congressional districts. The following describes the general concepts and methodologies used to measure the economic impact of the U.S. civil aviation sector, and provides summary results at the national, state and district level. Appendix A provides a detailed description of the impact methodologies. Appendices B and C summarize theresults at the state and congressional district levels, respectively. National Economic Impact of U.S. Civil Aviation The economic impact of any particular industry sector can bemeasured by the output, earnings and employment associated with that sector, plus any “induced” (or supporting) economic activity that results from any purchases made by thatsector’s firms and its employees. Total economic impacts of an industry combine both the first-level impacts (as related to the industry’s sales, revenue or output) and inducedimpacts (as related to purchases required to “produce” the sales or output and household spending by the industry’s employees). Civil aviation is a vital component of the U.S. passenger and cargo transportation sector and combines commercial and general aviation activities. The air transportation sector supports the travel and tourism industries, and issupported by the aircraft manufacturing sector. Each of these sectors also requires supporting goods, services and labor. The relative impact of civil aviation depends both on theabsolute demand for the output from these sectors, as well as the interdependence between those sectors and other U.S. industries. The primary impacts of commercial aviationon the U.S. economy are related to: (1) airlines and supporting services (commercial and non-commercial) (2) aircraft, engines and parts manufacturing (3) air-visitor travel andother trip-related expenditures The first two sectors (air transportation and aircraft manufacturing) create direct impacts through the production of air transportation services; thevisitor-related expenditures constitute an indirect impact that results from the primary transport activity. All of these sectors are directly affected andsupported by the U.S. civil aviation system, consisting of airports, airspace and supporting infrastructure. Directimpacts of civil aviation are created through transportation and other activities at airports as measured by theemployment, payroll and sales/output associated with the following industries/entities: Scheduled and non-scheduledcommercial airlines (passenger and cargo) and air couriers Airport and aircraft service providers (including FAA andother government services) Air cargo service providers General aviation (non-commercial) aircraft operators(including flight schools) 2 These results were based on methodologies similar to those developed in previous nationalimpact studies by the Federal Aviation Administration and other industry groups. [continues]The induced impacts of commercial aviation in 2004 are estimated at $808 billion in output, $241 billion in earnings and 7.0 million jobs. Mostof these induced impacts are attributed to the service sector, with the manufacturing and trade sectors also significantlyimpacted [continues] The commercial aviation sector has a significant impact on the U.S. economy, based on airtransportation and airport services, manufacturing of air transportation equipment and travel and tourism expendituresby air passengers. Including induced impacts, the U.S. commercial aviation sector drove $1.2 trillion in economicactivity (5.8 percent of U.S. total), $380 billion in earnings (5.0 percent) and 11.4 million jobs (8.8 percent).[14](http://64.233.167.104/search?q=cache:0KSC4Ou2RWAJ:www.smartskies.org/NR/rdonlyres/E20C3048-9FD4-46D8-91F1-6303C4148C5A/0/CommercialAviationEconomyMar06.pdf+%22commercial+aviation+and+the+american+economy%22&hl=en&ct=clnk&cd=1&gl=us&client=firefox-a#15)Thedirect impact of commercial air transportation and related industries was estimated at $247 billion in gross output, $72billion in earnings and over one million jobs, with commercial air transportation accounting for approximately half of the output impact. Commercial air-traveler expenditures created indirect impacts including $191 billion of gross output,$67 billion of earnings and 3.3 million jobs, mostly for the accommodations and food service sectors. The nationalimpact of commercial aviation extends to every congressional district and the District of Columbia. California was thetop-impact state, with $203 billion of gross output impacts followed by Texas, Florida, Georgia and New York. The top congressional districts are either major tourist destinations (Hawaii and Las Vegas area) or top aviation-manufacturingcenters (Western Washington), although every district has a significant level of impact.

## Aviation K2 Agriculture

### 2NC Mod

#### Farm yields will plummet without l aviation

Maher 1 (Guy R., Business Owner and Aircraft Appraiser with 12,000 Flight Hours in General Aviation Airplanes and Helicopters, “Owner’s Handbook: Cream of the Crops”, General Aviation News, 1-1, http://www.generalaviationnews.com/2001/01/01/owners-handbook-cream-of-the-crops/)

Light aircraft are trainers, check-runners, news gatherers, ambulances, taxis, tour guides, fire fighters, police patrollers and family haulers. That’s what general aviation is all about. As aviation enthusiasts, I am sure we all share the same disgust when we hear the uninformed (mainstream media, non-pilots, etc.) make generalizations about aviation that are incorrect. Well, over the past six months, I have gotten an incredibly up-close and personal look into another industry that puts aircraft to work — and hard work, at that. This is the agricultural industry. And I found that my generalized perceptions about agricultural aviation were way off the mark. Like all modern industries, today’s farmers use technologically advanced methods, equipment and products. These tools assist in providing food and fiber for the world’s growing population and protecting our natural resources. As part of this, aircraft are used to apply crop protection products in a safe, efficient, economical and environmentally friendly manner. Without crop protection products to control insects, weeds and diseases, crop yields per acre would drop by more than 50%, according to the National Agricultural Aviation Association. It’s more than 1,250 agricultural operator members who accomplish more crop protection in one hour than ground equipment can in a day, the association claims.

#### Extinction

Lugar 4 (Richard G., U.S. Senator – Indiana and Former Chair – Senate Foreign Relations Committee, “Plant Power”, Our Planet, 14(3), http://www.unep.org/ourplanet/imgversn/143/lugar.html)

In a world confronted by global terrorism, turmoil in the Middle East, burgeoning nuclear threats and other crises, it is easy to lose sight of the long-range challenges. But we do so at our peril. One of the most daunting of them is meeting the world’s need for food and energy in this century. At stake is not only preventing starvation and saving the environment, but also world peace and security. History tells us that states may go to war over access to resources, and that poverty and famine have often bred fanaticism and terrorism. Working to feed the world will minimize factors that contribute to global instability and the proliferation of weapons of mass destruction. With the world population expected to grow from 6 billion people today to 9 billion by mid-century, the demand for affordable food will increase well beyond current international production levels. People in rapidly developing nations will have the means greatly to improve their standard of living and caloric intake. Inevitably, that means eating more meat. This will raise demand for feed grain at the same time that the growing world population will need vastly more basic food to eat. Complicating a solution to this problem is a dynamic that must be better understood in the West: developing countries often use limited arable land to expand cities to house their growing populations. As good land disappears, people destroy timber resources and even rainforests as they try to create more arable land to feed themselves. The long-term environmental consequences could be disastrous for the entire globe. Productivity revolution To meet the expected demand for food over the next 50 years, we in the United States will have to grow roughly three times more food on the land we have. That’s a tall order. My farm in Marion County, Indiana, for example, yields on average 8.3 to 8.6 tonnes of corn per hectare – typical for a farm in central Indiana. To triple our production by 2050, we will have to produce an annual average of 25 tonnes per hectare. Can we possibly boost output that much? Well, it’s been done before. Advances in the use of fertilizer and water, improved machinery and better tilling techniques combined to generate a threefold increase in yields since 1935 – on our farm back then, my dad produced 2.8 to 3 tonnes per hectare. Much US agriculture has seen similar increases. But of course there is no guarantee that we can achieve those results again. Given the urgency of expanding food production to meet world demand, we must invest much more in scientific research and target that money toward projects that promise to have significant national and global impact. For the United States, that will mean a major shift in the way we conduct and fund agricultural science. Fundamental research will generate the innovations that will be necessary to feed the world. The United States can take a leading position in a productivity revolution. And our success at increasing food production may play a decisive humanitarian role in the survival of billions of people and the health of our planet.

### Ag Impacts

#### Ag collapse tanks growth and free trade

Francl 98 (Terry, Senior Economist and Commodity Specialist – American Farm Bureau Federation, Et al., “Impact of the Kyoto Protocol on Agriculture”, The American Council fore Capital Formation, October, http://www.accf.org/publications/reports/sr-impact-kyoto-ag.html)

Agriculture's Impact on the U.S. Economy No single **study can capture the ripple effect that a decline in farm income would have on other aspects of the** agricultural and non-agricultural economy. A 1998 study by the Sparks Companies, using data from Standard and Poor's DRI and based on the commitments agreed to by the United States in Kyoto, found significant economic effects: Consumer food prices would rise. A 2 percent decline in GDP resulting from the Kyoto Protocol would in turn cause a 0.7 percent decline in domestic demand for food. This would create a mild, short-term, downward pressure on food prices, counterbalanced by the inflationary pressures of higher energy costs. On net, food consumption expenditures would rise 2.6 percent. This would have only minor effects on the average U.S. consumer, whose food costs account for 11.9 percent of disposable income. But the impact on poor families would be considerable. The 37.4 percent of U.S. households earning under $20,000 after taxes spend between 21.4 and 100 percent of their income on food. Public assistance demand and costs would rise. The U.S. Department of Agriculture allocates more than $39 billion annually to six food programs, most notably the child nutrition programs and food stamps. Reduced employment could add roughly 500,000 to the food stamp rolls and raise costs of USDA food programs 5 percent annually, or by $2 billion. Agricultural exports would fall. By increasing the energy costs of farm production in America while leaving them unchanged in developing countries, the Kyoto Protocol would cause U.S. food exports to decline and imports to rise. Reduced efficiency of the world food system could add to a political backlash against free trade policies at home and abroad. Farm consolidation would increase. "The higher energy costs," wrote DRI/McGraw-Hill, "together with the reduced domestic and export demand, could lead to a very severe decline in investment in agriculture, and a sharp increase in farm consolidation. Small farm numbers likely would decline much more rapidly than under baseline conditions, while investment even in larger commercial farms likely would stagnate or decline."

#### Agriculture is vital to overall growth

Fitzgerald 99 (Senator Peter G., (R-Ill.), February 28, “Illinois Needs Sound Farm Policy,” http:// fitzgerald.senate.gov/index.cfm?FuseAction=Articles.Detail&Article\_id=69&Month=2&Year=1999)

Agriculture is critical to both the economy of America and Illinois. Including related industries, agriculture is the nation's largest employer. Illinois' 76,000 farms cover more than 28 million acresCnearly 80 percent of our state's land---and Illinois farm product sales generate more than $9 billion annually. When I entered the U.S. Senate last month, I worked hard to secure a seat on the Senate Agriculture Committee so that our state and our farmers could have a strong voice in Washington. We need to focus on three areas: opening new overseas markets for farm products, reducing the federal tax and regulatory burden on farmers and rural businesses, and ensuring farmers have adequate risk management tools. Farmers need open overseas markets for farm and food products. Illinois farmers depend on foreign trade for their economic well-being. In 1997, Illinois exported $3.7 billion in agricultural commodities, ranking third among all states. But over the last three years, farm exports dropped nationwide, putting many Illinois farmers at risk. Congress and U.S. trade officials should work to ensure that American farmers are able to sell their products in the world market. In my first legislative act as Senator, I joined four colleagues to introduce legislation requiring U.S. trade officials to make eliminating agriculture trade barriers a top priority in U.S. trade negotiations, so that our farmers can compete on a level playing field and fight for a better share of retail agriculture sales. I support fast-track trade negotiating authority, so that the Administration can be in a better position to tear down international trade barriers. We must, at the same time, work to ensure that our trading partners adhere to all existing trade agreements. Farmers need lower taxes. Eliminating the estate tax on family farmers will ensure that farms can be passed on to the next generation. According to USDA figures, farmers are six times more likely to face inheritance taxes than other Americans. Family farmers work hard and pay taxes throughout their lives. They build a productive and successful family business, and hope eventually to pass it on to their children. A farm's value is stored overwhelmingly in illiquid assets---land, livestock, and physical capital. Farmers who don't have cash available to pay the estate tax are often forced to sell their farms to pay the government. Farmers need adequate risk management tools. Last year, the federal government provided a significant amount of money in emergency disaster assistance to farmers. Perhaps this would not have been necessary if farmers could access, in the first instance, well-designed risk management tools. This year, the Senate will examine the USDA's crop insurance system. We need to look at whether the current system provides adequate protection against risk and evaluate the development of new risk management tools. For farmers to prosper, our nation must have economic, farm, and trade policies that promote investment and growth in agricultural communities and agricultural states like Illinois. A healthy agricultural economy has ripple effects through many industries and is critical for the economic prosperity of both Illinois and America. As your new Senator, I look forward to addressing these issues in the coming years.

#### Agricultural decline collapses the overall economy

Kugler 98 (Lane, Columnist, “American Farmers Are Struggling”, Journal of Commerce, 12-31, Lexis)

U.S. agriculture prices have reached lows not seen in 10, 20 or even 30 years, while the costs of living, labor and machinery are at record highs. The only thing missing that was present 70 years ago is a stock-market plunge and massive unemployment. If this country continues to allow its agriculture to sink to Depression-era levels, how can it keep the stock market from tumbling, too? Think about the stock market's falling to levels of 30 years ago, say around 700, instead of flirting with 9,000. Impossible? In just over two years, cash grain prices have dropped over 70 percent from the high posted in July 1996. Hog prices also reflect a near-70 percent decline since 1990. Many things have contributed to this dramatic decline of commodity prices. Some have directly benefited the consumer, like lower petroleum prices that were passed on at the gas pump. However, this has not been the case with meats and other commodities in 1997 and 1998. Processors and retailers decided they could increase their margins rather than passing on the savings to the consumer (which would have cleaned up the oversupply). Supplies continue to build, benefiting only processors and retailers, not consumers. Free markets have been stymied. I am not trying to tell you we are heading for a sequel of the Great Depression. But why is the greatest production machine in the world, American agriculture, going through such difficult times? Why should a minority, those who produce the majority of our food, be subjected to cost inflation and price deflation at the same time? U. S. taxpayers coughed up $6 billion dollars this year to help the farmer. Along with next year's Freedom to Farm payments, the extra cash is helping us through the crisis. Thank you, it is just what we needed: another Band-Aid. Government policy for the past 60 years has been to intravenously feed farmers the ""antibiotic'' of farm subsidies and price supports. But the wound has never healed. The Freedom to Farm Act attempts to wean agriculture from subsidies and supports by initiating a ""withdrawal'' process. The problem is, other grain-producing countries around the world don't see it that way. They continue to subsidize their producers. The livestock producer gets no help from taxpayers. But if these prices continue, it is a pretty sure bet the banks holding his notes will get bailed out. We can make our products much more affordable to foreign buyers by devaluing the dollar. But, you say, that will cause inflation. Maybe investors should rethink inflation. Maybe a little inflation is much better than another Depression. If you look at government money-supply figures, it would appear that Washington may have started to print money (which, in hindsight, could have prevented the Great Depression). I hope this is the case. The enormous power of the hedge funds that continuously short commodity futures - the pricing mechanism of the world these days - is staggering. If agriculture dies an economic death, the rest of the economy is sure to follow.

### Famine Impacts

#### Famine causes world war 3

Calvin 2 (William H., Professor of Biology – University of Washington, “A Brain for All Season”, http://WilliamCalvin.com/BrainForAllSeasons/ NAcoast.htm)

The population-crash scenario is surely the most appalling. Plummeting crop yields will cause some powerful countries to try to take over their neighbors or distant lands – if only because their armies, unpaid and lacking food, will go marauding, both at home and across the borders. The better-organized countries will attempt to use their armies, before they fall apart entirely, to take over countries with significant remaining resources, driving out or starving their inhabitants if not using modern weapons to accomplish the same end: eliminating competitors for the remaining food. This will be a worldwide problem – and could easily lead to a Third World War – but Europe's vulnerability is particularly easy to analyze.The last abrupt cooling, the Younger Dryas, drastically altered Europe's climate as far east as Ukraine.  Present-day Europe has more than 650 million people.  It has excellent soils, and largely grows its own food.  It could no longer do so if it lost the extra warming from the North Atlantic.

#### Food shortages cause extinction

Klare 6 (Michael, Professor of Peace and World Security Studies – Hampshire College, “The Coming Resource Wars”, 3-11, http://www.waterconserve.org/shared/reader/welcome.aspx?linkid=53710&keybold=water%20 land%20conflict)

"As famine, disease, and weather-related disasters strike due to abrupt climate change," the Pentagon report notes, "many countries' needs will exceed their carrying capacity" -- that is, their ability to provide the minimum requirements for human survival. This "will create a sense of desperation, which is likely to lead to offensive aggression" against countries with a greater stock of vital resources. "Imagine eastern European countries, struggling to feed their populations with a falling supply of food, water, and energy, eyeing Russia, whose population is already in decline, for access to its grain, minerals, and energy supply." Similar scenarios will be replicated all across the planet, as those without the means to survival invade or migrate to those with greater abundance -- producing endless struggles between resource "haves" and "have-nots." It is this prospect, more than anything, that worries John Reid. In particular, he expressed concern over the inadequate capacity of poor and unstable countries to cope with the effects of climate change, and the resulting risk of state collapse, civil war and mass migration. "More than 300 million people in Africa currently lack access to safe water," he observed, and "climate change will worsen this dire situation" -- provoking more wars like Darfur. And even if these social disasters will occur primarily in the developing world, the wealthier countries will also be caught up in them, whether by participating in peacekeeping and humanitarian aid operations, by fending off unwanted migrants or by fighting for access to overseas supplies of food, oil, and minerals. When reading of these nightmarish scenarios, it is easy to conjure up images of desperate, starving people killing one another with knives, staves and clubs -- as was certainly often the case in the past, and could easily prove to be so again. But these scenarios also envision the use of more deadly weapons. "In this world of warring states," the 2003 Pentagon report predicted, "nuclear arms proliferation is inevitable." As oil and natural gas disappears, more and more countries will rely on nuclear power to meet their energy needs -- and this "will accelerate nuclear proliferation as countries develop enrichment and reprocessing capabilities to ensure their national security." Although speculative, these reports make one thing clear: when thinking about the calamitous effects of global climate change, we must emphasize its social and political consequences as much as its purely environmental effects. Drought, flooding and storms can kill us, and surely will -- but so will wars among the survivors of these catastrophes over what remains of food, water and shelter. As Reid's comments indicate, no society, however affluent, will escape involvement in these forms of conflict.

#### Eliminating famine is a moral obligation – even if it causes extinction

Watson 77 (Richard, Professor of Philosophy – Washington University and Former Visiting Fellow at the Center of International Studies – Princeton University, World Hunger and Moral Obligation, p. 122)

That is, as stated early in this essay, morality essentially has to do with relations among people, among persons. It is nonsense to talk of things that cannot be moral agents as having responsibilities; consequently, it is nonsense to talk of whatever is not actually a person as having rights. It is deceptive even to talk of legal rights of a corporate entity. Those rights (and reciprocal responsibilities) actually pertain to individual human beings who have an interest in the corporate entity. The State or the human species have no rights at all, let alone rights superior to those of individuals. The basic reason given for preserving a nation or the human species is that otherwise the milieu of morality would not exist. This is false so far as specific nations are concerned, but it is true that the existence of individuals depends on the existence of the species. However, although moral behavior is required of each individual, no principle requires that the realm of morality itself be preserved. Thus, we are reduced to the position that people’s interest in preserving the human species is based primarily on the interest of each in individual survival. Having shown above that the principle of equity is morally superior to the principle of survival, we can conclude again that food should be shared equally even if this means the extinction of the human race.

## Aviation K2 Aerospace Mod

#### Aerospace Dependent on Airline Industries

Shikani, Shyr, & Bhattacharjee 6/18/12 (Will, Thomas, Anshuman, Sr. Director from Yale University-BA, Economics, Director from University of Pennsylvania '11, Finance, Entrepreurship, Director, Teleflex (TFX), WikiInvest, http://www.wikinvest.com/stock/Teleflex\_(TFX))

Teleflex is a manufacturing conglomerate that earns most of its money making disposable medical supplies like catheters and oxygen masks. Although medical devices made up 77% of 2009 revenue of $1.89 billion,[1] the company makes a host of other industrial products, from jet engine blades and airline baggage systems, to boat and commercial truck engine parts**.** Revenue from Teleflex's aerospace products is dependent on the commercial airline industrydemand for aircraft parts. The FAA predicts new commercial aircraft construction will slow in the future[2] because of weakness in the overall economy and among passenger airlines specifically. However, the Aerospace segment only made up 10% of Teleflex's 2009 revenues.[1] Business Financials The company's revenue decreased from $2.1 billion in 2008 to $1.89 billion in 2009.[3] However, its operating profit remained relatively flat, as its operating revenue in 2009 was $336 million in 2009, compared to $340 million in 2008. Medical (77%% of 2009 Revenue) Teleflex’s Medical segment businesses produce devices used in surgeries, critical care, and cardiac care, as well as parts and instruments for other companies’ medical devices. The largest revenue source in this segment is Critical Care Products, which sells under the names Arrow, Rüsch, HudsonRCI, Gibeck and Sheridan. The next largest revenue source in this segment is Surgical Products, which sells under the names Deknatel, Pleur-evac, Pilling, Taut and Weck. The third revenue source in this segment is Devices for Original Equipment Manufacturers, which sells under the names TFX OEM, Beere, Deknatel, KMedic, and SMD. Contents 1 Business Financials 1.1 Medical (77%% of 2009 Revenue) 1.2 Aerospace (10% of 2009 Revenue) 1.3 Commercial (13% of 2009 Revenue) 2 Key Trends and Forces 2.1 Aerospace 2.1.1 Revenue in the Aerospace Segment is Highly Dependent on the Aerospace Industry, Particularly the Commercial Airline Industry 2.1.2 Interest Rates impact Teleflex’s ability to pay off its substantial debt load 3 Competition 3.1 Medical 3.2 Aerospace 3.3 Commercial 4 References The products in the Medical segment are manufactured in the Czech Republic, Germany, Malaysia, Mexico and the United States and sold to hospitals and healthcare providers all over the world. Aerospace (10% of 2009 Revenue) **Revenue in the Aerospace segment comes from engine repair products and cargo** handling systemst for commercial **aviation**. Engine Repair produces parts and services for flight turbines through a majority-owned venture with GE Aircraft Engines called AirFoil Technologies International (ATI). Cargo Handling Systems and Equipment acquired Nordisk Aviation Products in November 2007 to improve global market presence and produces cargo systems and spare parts under both the names Nordisk and Telair. Major sites for the Aerospace segment are in England, Germany, Norway, Singapore and the United States. Commercial (13% of 2009 Revenue) The Commercial segment produces driver controls and engine and drive assemblies for boats, as well as fuel management systems for automotive, rail, and industrial vehicles, and rigging products. Manufacturing sites are in Canada, Europe, Singapore, and the United States. The Marine part of this segment sells products under the names Teleflex Marine, SeaStar, BayStar, and Sierra. Fuel Management systems are sold under the names ComfortPro, Proheat, and Teleflex GFI. Rigging systems produces cables and other rigging equipment for applications such as oil drilling and marine transportation. Key Trends and Forces. **Aerospace Revenue in the Aerospace Segment is Highly Dependent on the Aerospace Industry, Particularly the Commercial Airline Industry** New construction of aircraft from companies like Boeing and Airbus are important sources of revenue for Teleflex because as demand for more aircraft rises, so does demand for more parts. On the other hand, **rising costs in the commercial airline industry, driven largely by increases in the price of oil,** and the 2007-2008 **slowdown of the US economy**, led the FAA to predict flat operations growth by airlines for the forseeable future. **Such weakness** in both operations and consumer demand **leads to reduced spending on everything from airplanes and parts to expenditures on airport improvements. This cyclicality of the Aerospace industry affects demand for everything related to the industry,** including Teleflex’s airline engine repair parts and cargo handling systems.

#### Aerospace competiveness is the critical internal link to U.S. global hegemony

Walker et al. 2 Robert Walker, Chair of the Commission on the Futureof the United States Aerospace Industry Commissioners. Final Report of the Commission on the Futureof the United States Aerospace Industry Commissioners, November, <http://www.trade.gov/td/aerospace/aerospacecommission/AeroCommissionFinalReport.pdf>

Defending our nation against its enemies is the first and fundamental commitment of the federal govern-ment.2 This translates into two broad missions—Defend America and Project Power—when and where needed. In order to defend America and project power, the nation needs the ability to move manpower, materiel, intelligence information and precision weaponry swiftly to any point around the globe, when needed. This has been, and will continue to be, a mainstay of our national security strategy. The events of September 11, 2001 dramatically demonstrated the extent of our national reliance on aerospace capabilities and related military contribu-tions to homeland security. Combat air patrols swept the skies; satellites supported real-time communica-tions for emergency responders, imagery for recov- ery, and intelligence on terrorist activities; and the security and protection of key government officials was enabled by timely air transport. As recent events in Afghanistan and Kosovo show, the power generated by our nation’s aerospace capa-bilities is an—and perhaps the—essential ingredient in force projection and expeditionary operations. In both places, at the outset of the crisis, satellites and reconnaissance aircraft, some unmanned, provided critical strategic and tactical intelligence to our national leadership. Space-borne intelligence, com-mand, control and communications assets permitted the rapid targeting of key enemy positions and facil-ities. Airlifters and tankers brought personnel, materiel, and aircraft to critical locations. And aerial bombardment, with precision weapons and cruise missiles, often aided by the Global Positioning System (GPS) and the Predator unmanned vehicle, destroyed enemy forces. Aircraft carriers and their aircraft also played key roles in both conflicts. Today’s military aerospace capabilities are indeed robust, but at significant risk. They rely on platforms and an industrial base—measured in both human capital and physical facilities—that are aging and increasingly inadequate. Consider just a few of the issues: • Much of our capability to defend America and project power depends on satellites. Assured reli-able access to space is a critical enabler of this capa-bility. As recently as 1998, the key to near- and mid-term space access was the Evolved Expendable Launch Vehicle (EELV), a development project of Boeing, Lockheed Martin and the U. S. Air Force. EELV drew primarily on commercial demand to close the business case for two new launchers, with the U.S. government essentially buying launches at the margin. In this model, each company partner made significant investments of corporate funds in vehicle development and infrastructure, reducing the overall need for government investment. Today, however, worldwide demand for commer-cial satellite launch has dropped essentially to nothing—and is not expected to rise for a decade or more—while the number of available launch platforms worldwide has proliferated. Today, therefore, the business case for EELV simply does not close, and reliance on the economics of a com-mercially-driven market is unsustainable. A new strategy for assured access to space must be found. • The U.S. needs unrestricted access to space for civil, commercial, and military applications. Our satellite systems will become increasingly impor- tant to military operations as today’s information revolution, the so-called “revolution in military affairs,” continues, while at the same time satellites will become increasingly vulnerable to attack as the century proceeds. To preserve critical satellite net-works, the nation will almost certainly need the capability to launch replacement satellites quickly after an attack. One of the key enablers for “launch on demand” is reusable space launch, and yet within the last year all work has been stopped on the X-33 and X-34 reusable launch programs • The challenge for the defense industrial base is to have the capability to build the base force struc-ture, support contingency-related surges, provide production capacity that can increase faster than any new emerging global threat can build up its capacity, and provide an “appropriate” return to shareholders. But the motivation of government and industry are different. This is a prime detrac-tion for wanting to form government-industry partnerships. Industry prioritizes investments toward near-term, high-return, and high-dollar programs that make for a sound business case for them. Government, on the other hand, wants to prioritize investment to ensure a continuing capa-bility to meet any new threat to the nation. This need is cyclical and difficult for businesses to sus-tain during periods of government inactiv-ity. Based on the cyclic nature of demand, the increasing cost/complexity of new systems, and the slow pace of defense modernization, aerospace companies are losing market advantages and the sector is contracting. Twenty-two years ago, today’s “Big 5” in aerospace were 75 separate companies, as depicted by the historical chart of industry con-solidation shown in Chapter 7. • Tactical combat aircraft have been a key compo-nent of America’s air forces. Today, three tactical aircraft programs continue: the F/A-18E/F (in production), the F/A-22 (in a late stage of test and evaluation), and the F-35 Joint Strike Fighter (just moving into system design and development). Because of the recentness of these programs, there are robust design teams in existence. But all of the initial design work on all three programs will be completed by 2008. If the nation were to con- clude, as it very well may, that a new manned tac- tical aircraft needs to be fielded in the middle of this century, where will we find the experienced design teams required to design and build it, if the design process is in fact gapped for 20 years or more? • More than half of the aerospace workforce is over the age of 404, and the average age of aerospace defense workers is over 50.5Inside the Department of Defense (DoD), a large percent of all scientists and engineers will be retirement eligible by 2005. Given these demographics, there will be an exodus of “corporate knowledge” in the next decade that will be difficult and costly to rebuild once it is lost. There will be a critical need for new engineers, but little new work to mature their practical skill over the next several decades. Further, enrollment in aerospace engineering programs has dropped by 47 percent in the past nine years6, and the interest and national skills in mathematics and science are down. Defense spending on cutting-edge work is at best stable, and commercial aircraft programs are struggling and laying workers off. As the DoD’s recent Space Research and Development (R&D) Industrial Base Study7 concluded, “[s]ustaining a talented workforce of sufficient size and experience remains a longterm issue and is likely to get worse.” In short, the nation needs a plan to attract, train and maintain a skilled, world-class aerospace workforce, but none currently exists. • The current U.S. research, development, test and evaluation (RDT&E) infrastructure has a legacy dating back to either World War II or the expan- sion during the Space Age in the 1960s. It is now suffering significantly from a lack of resources required for modernization. In some cases, our nation’s capabilities have atrophied and we have lost the lead, as with our outdated wind tunnels, where European facilities are now more modern and efficient. In the current climate, there is inad- equate funding to modernize aging government infrastructure or build facilities that would support the development of new transformational capabil- ities, such as wind tunnels needed to design and test new hypersonic vehicles. The aerospace indus-try must have access to appropriate, modern facil- ities to develop, test and evaluate new systems. Throughout this dynamic and challenging environ-ment, one message remains clear: a healthy U.S. aerospace industry is more than a hedge against an uncertain future. It is one of the primary national instruments through which DoD will develop and obtain the superior technologies and capabilities essential to the on-going transformation of the armed forces.

#### US dominance is key to solve multiple hotspots that escalate to global war

Robert Kagan (Senior Associate at the Carnegie Endowment for International Peace and Senior Transatlantic Fellow at the German Marshall Fund) 2007 “End of Dreams, Return of History,” Hoover Institution, No. 144, August/September, http://www.hoover.org/publications/policy-review/article/6136

 The jostling for status and influence among these ambitious nations and would-be nations is a second defining feature of the new post-Cold War international system. Nationalism in all its forms is back, if it ever went away, and so is international competition for power, influence, honor, and status. American predominance prevents these rivalries from intensifying — its regional as well as its global predominance. Were the United States to diminish its influence in the regions where it is currently the strongest power, the other nations would settle disputes as great and lesser powers have done in the past: sometimes through diplomacy and accommodation but often through confrontation and wars of varying scope, intensity, and destructiveness. One novel aspect of such a multipolar world is that most of these powers would possess nuclear weapons. That could make wars between them less likely, or it could simply make them more catastrophic.It is easy but also dangerous to underestimate the role the United States plays in providing a measure of stability in the world even as it also disrupts stability. For instance, the United States is the dominant naval power everywhere, such that other nations cannot compete with it even in their home waters. They either happily or grudgingly allow the United States Navy to be the guarantor of international waterways and trade routes, of international access to markets and raw materials such as oil. Even when the United States engages in a war, it is able to play its role as guardian of the waterways. In a more genuinely multipolar world, however, it would not. Nations would compete for naval dominance at least in their own regions and possibly beyond. Conflict between nations would involve struggles on the oceans as well as on land. Armed embargos, of the kind used in World War i and other major conflicts, would disrupt trade flows in a way that is now impossible. Such order as exists in the world rests not merely on the goodwill of peoples but on a foundation provided by American power. Even the European Union, that great geopolitical miracle, owes its founding to American power, for without it the European nations after World War ii would never have felt secure enough to reintegrate Germany. Most Europeans recoil at the thought, but even today Europe ’s stability depends on the guarantee, however distant and one hopes unnecessary, that the United States could step in to check any dangerous development on the continent. In a genuinely multipolar world, that would not be possible without renewing the danger of world war. People who believe greater equality among nations would be preferable to the present American predominance often succumb to a basic logical fallacy. They believe the order the world enjoys today exists independently of American power. They imagine that in a world where American power was diminished, the aspects of international order that they like would remain in place. But that ’s not the way it works. International order does not rest on ideas and institutions. It is shaped by configurations of power. The international order we know today reflects the distribution of power in the world since World War ii, and especially since the end of the Cold War. A different configuration of power, a multipolar world in which the poles were Russia, China, the United States, India, and Europe, would produce its own kind of order, with different rules and norms reflecting the interests of the powerful states that would have a hand in shaping it. Would that international order be an improvement? Perhaps for Beijing and Moscow it would. But it is doubtful that it would suit the tastes of enlightenment liberals in the United States and Europe. The current order, of course, is not only far from perfect but also offers no guarantee against major conflict among the world ’s great powers. Even under the umbrella of unipolarity, regional conflicts involving the large powers may erupt. War could erupt between China and Taiwan and draw in both the United States and Japan. War could erupt between Russia and Georgia, forcing the United States and its European allies to decide whether to intervene or suffer the consequences of a Russian victory. Conflict between India and Pakistan remains possible, as does conflict between Iran and Israel or other Middle Eastern states. These, too, could draw in other great powers, including the United States. Such conflicts may be unavoidable no matter what policies the United States pursues. But they are more likely to erupt if the United States weakens or withdraws from its positions of regional dominance. This is especially true in East Asia, where most nations agree that a reliable American power has a stabilizing and pacific effect on the region. That is certainly the view of most of China ’s neighbors. But even China, which seeks gradually to supplant the United States as the dominant power in the region, faces the dilemma that an American withdrawal could unleash an ambitious, independent, nationalist Japan. In Europe, too, the departure of the United States from the scene — even if it remained the world’s most powerful nation — could be destabilizing. It could tempt Russia to an even more overbearing and potentially forceful approach to unruly nations on its periphery. Although some realist theorists seem to imagine that the disappearance of the Soviet Union put an end to the possibility of confrontation between Russia and the West, and therefore to the need for a permanent American role in Europe, history suggests that conflicts in Europe involving Russia are possible even without Soviet communism. If the United States withdrew from Europe — if it adopted what some call a strategy of “offshore balancing” — this could in time increase the likelihood of conflict involving Russia and its near neighbors, which could in turn draw the United States back in under unfavorable circumstances. It is also optimistic to imagine that a retrenchment of the American position in the Middle East and the assumption of a more passive, “offshore” role would lead to greater stability there. The vital interest the United States has in access to oil and the role it plays in keeping access open to other nations in Europe and Asia make it unlikely that American leaders could or would stand back and hope for the best while the powers in the region battle it out. Nor would a more “even-handed” policy toward Israel, which some see as the magic key to unlocking peace, stability, and comity in the Middle East, obviate the need to come to Israel ’s aid if its security became threatened. That commitment, paired with the American commitment to protect strategic oil supplies for most of the world, practically ensures a heavy American military presence in the region, both on the seas and on the ground. The subtraction of American power from any region would not end conflict but would simply change the equation. In the Middle East, competition for influence among powers both inside and outside the region has raged for at least two centuries. The rise of Islamic fundamentalism doesn ’t change this. It only adds a new and more threatening dimension to the competition, which neither a sudden end to the conflict between Israel and the Palestinians nor an immediate American withdrawal from Iraq would change. The alternative to American predominance in the region is not balance and peace. It is further competition. The region and the states within it remain relatively weak. A diminution of American influence would not be followed by a diminution of other external influences. One could expect deeper involvement by both China and Russia, if only to secure their interests. 18 And one could also expect the more powerful states of the region, particularly Iran, to expand and fill the vacuum. It is doubtful that any American administration would voluntarily take actions that could shift the balance of power in the Middle East further toward Russia, China, or Iran. The world hasn ’t changed that much. An American withdrawal from Iraq will not return things to “normal” or to a new kind of stability in the region. It will produce a new instability, one likely to draw the United States back in again.

## A2: Planes Cause Warming

#### Planes aren’t that bad—investment in clean tech means they are actually relatively green

Sacramento Bee 12[June 6, “Airlines for America (A4A) Calls on U.S. Government to Block EU ETS ” http://www.sacbee.com/2012/06/06/4543381/airlines-for-america-a4a-calls.html#storylink=cpy

A4A and its member airlines are committed to reducing greenhouse gas emissions from aviation and, with fuel-efficiency improvements eliminating 3.3 billion metric tons of carbon dioxide since 1978, have a strong record of meeting that commitment. By investing billions of dollars in fuel-saving aircraft and engines, innovative technologies and advanced avionics, the U.S. airline industry improved its fuel efficiency by 120 percent between 1978 and 2011, resulting in emissions savings equivalent to taking 22 million cars off the road each of those years.

# \*\*\* Affirmative \*\*\*

# UQ

### Aviation Low Now

#### Aviation --- lack of runways and controllers

Williams 9 (Genevra, J.D. Candidate – Southern Methodist University Dedman School of Law and B.B.A. –University of Iowa, “GPS For The Sky: A Survey of Automatic Dependent Surveillance-(ADS-B) and its Implementation in the United States”, Journal of Air Law and Commerce, Spring, 74 J. Air L. & Com. 473, Lexis)

The U.S. aviation infrastructure faces many challenges if it is going to accommodate this expansion in air traffic. For example, there is a shortage in the number of runways from which all of these planes must take off and land. 44 While an in-depth analysis of the airport capacity problems relating to takeoff and landing are outside the scope of this paper, it is worth noting that runway and airport expansion is a special kind of problem. Long takeoff and landing delays, often suffered in the cramped quarters of a plane on the tarmac or circling over an airport, are infuriating to passengers, yet no one wants an already noisy airport further crowding into their neighborhood. 45

Another problem is the profound shortage of qualified air traffic controllers. 46 Over the next ten years, the bulk of today's air traffic controllers must be replaced. 47 The majority of today's controllers were hired in the 1980s after President Reagan fired 10,000 striking controllers, 48 and now they are all approaching the mandatory retirement age of fifty-six years. 49 The FAA has been scrambling to retain experienced air traffic controllers who have not yet hit retirement age by offering six-figure salaries in some locations, and relocation bonuses of up to [\*479] $ 75,000. 50 The shortage is compounded by a protracted labor dispute between the National Air Traffic Controllers Association and the FAA that contributes to serious worker dissatisfaction. 51 Of the 1,876 controllers who retired between 2005 and 2008, only thirty-seven did so because they reached mandatory retirement age. 52 "The attrition rate was 23 percent higher than projected, and even the FAA acknowledges some of that is because of the labor dispute." 53

### Decline Inevitable

#### Demand decline makes collapse inevitable

Bloomberg 12 [June 3, “Why US airlines need to adapt to a slow-growth future” http://www.bloomberg.com/news/2012-06-03/why-u-s-airlines-need-to-adapt-to-a-slow-growth-future.html]

Yet U.S. airlines face a long-term challenge that should concern industry executives as well as investors. That impediment isn’t wages, fuel prices or a stagnant economy. It’s growth in demand for air travel, which has been anemic at best for more than a decade, even when the economy was expanding. Steadily dropping fares are the only reason traffic has grown at all since 2000. And without substantive cost-cutting innovation in the industry, that pace isn’t sustainable. Coca- Cola Co. can’t increase its business through constant price cutting, and neither can airlines. If inflation-adjusted fares hadn’t dropped 17 percent from 2000 to 2010, my research suggests that domestic travel would have declined.

# Link

### No Link

#### No link—trades off with roads not airlines

Transport Research Center 9 [ “Competitive Interaction between Airports, Airlines and High-Speed Rail”, OECD Report, <http://www.internationaltransportforum.org/jtrc/discussionpapers/DP200907.pdf>]

The French situation was mentioned as one where capacity in aviation was a crucial factor in the assessment of high-speed rail projects. Some French TGV connections brought about a substantial shift from air to rail29, freeing up scarce capacity (valuable slots) in aviation30. This effect occurs irrespective of whether low-cost or other carriers might provide service between the cities linked by the high-speed rail connection. Furthermore, since high-speed rail uses separate facilities, it can also free up capacity for rail freight and for regional passenger transport. It was noted, however, that in many cases the main (expected) modal shift in response to a high-speed rail connection is from road to rail, not from air to rail.

### Link Turn—Efficiency

#### HSR removes bad flights and makes airlines more efficient

Bloom 11 [David, Software engineer at Greplin, june 11, <http://www.quora.com/Is-California-high-speed-rail-the-railway-to-nowhere>]

In addition, many airline executives have endorsed high speed rail because short-distance "commuter" flights are not profitable or sustainable: JetBlue CEO Dave Barger: Q: "Do you see nationwide high-speed rail as a threat or complement to the airline industry?" A: "It’s a complement. I don’t think we need hundreds of departures every day from the Bay Area to Los Angeles." (http://www.sfexaminer.com/local/...) Former Continental Airlines CEO Gordon Bethune: "You have to begin to put the infrastructure in place to put in high-speed trains... It should be a national priority. If the French can do it, why can't we?" (http://www.vhsr.com/HSRQ) Former American Airlines CEO Robert Crandall: "Given the high level of congestion at our major airports and our desire to operate a more energy efficient transportation complex, I am similarly mystified as to why we have heard little or nothing about the development of alternative surface transportation systems for short haul journeys. At our major airports, a significant percentage of flights are to destinations less than 300 miles distant, which could readily be replaced by the modern high speed rail systems found in many countries around the world. Similarly, we could increase long haul aviation capacity to and from our major cities by linking near by airports to those cities with high speed rail links."

#### Changes forced by HSR competition are key to the long term viability of airlines

Fu, Zhang, and Lei 11 [ Xiaowen Fu a,\*, Anming Zhang b, Zheng Lei , a Faculty of Business, Hong Kong Polytechnic University, Hong Kong, China b Sauder School of Business, University of British Columbia, Canada c Department of Air Transport, Cranfield University, UK, “Will China’s airline industry survive the entry of high-speed rail?”, Research in Transportation Economics 35 (2012) 13e25]

Chinese airlines will survive in the entry of HSR (and ensuing competition) by exploiting their own competitive advantages. For example, airlines’ distribution channel covers a larger area and has more power in such areas as direct sales. The electronic ticket system adopted by airlines is much more convenient for passengers to book, change, return or pay for their tickets. The civil aviation industry in China has realized a high level of market-oriented operation through a three-decade long industrial reform (Zhang, 1998), thus the air ticket price is very responsive to the market. With more flexible marketing and pricing strategies, the profit for airlines may decrease due to the entry of high-speed railway, but the profitability and competitive power of the airline industry remain. Most importantly, with the strong growth of the overall Chinese economy, international trade and tourist market, Chinese airlines will continue to enjoy strong demand growth in the medium to long term. Our investigation does predict a challenging period ahead for Chinese airlines. They cannot simply repeat the unbalanced growth as in the past. In order to achieve sustainable development, Chinese airlines must significantly improve their competitiveness in terms of network configuration, cost efficiency and service quality, thereby contributing to the long-term regional and global growth of air transportation.

# Impact

### No Ag Impact

#### No famine

Gardiner 8 (Duane T. Gardiner, Texas A&M University, and Raymond W. Miller, Late, Utah University, Soils in Our Environment, 2008, p. 21)

In short the world is demanding more food, more fiber, and more industrial crops grown on less land using less water. If the population continues to increase at the current rate (7000 more people per hour), one can predict that the world will experience critical resource shortages during the lifetime of young people alive today. **Despite all this doom and** gloom, most people are not hungry. In fact, the food supply has become more stable, especially for the more developed countries. During the twentieth century, growth in world economies and standards of living exceeded growth in population.

#### No food wars

Salehyan 7 (Idean, Professor of Political Science – University of North Texas, “The New Myth About Climate Change”, Foreign Policy, Summer, http://www.foreignpolicy.com/story/cms.php?story\_id=3922)

First, aside from a few anecdotes, there is little systematic empirical evidence that resource scarcity and changing environmental conditions lead to conflict. In fact, several studies have shown that an abundance of natural resources is more likely to contribute to conflict. Moreover, even as the planet has warmed, the number of civil wars and insurgencies has decreased dramatically. Data collected by researchers at Uppsala University and the International Peace Research Institute, Oslo shows a steep decline in the number of armed conflicts around the world. Between 1989 and 2002, some 100 armed conflicts came to an end, including the wars in Mozambique, Nicaragua, and Cambodia. If global warming causes conflict, we should not be witnessing this downward trend. Furthermore, if famine and drought led to the crisis in Darfur, why have scores of environmental catastrophes failed to set off armed conflict elsewhere? For instance, the U.N. World Food Programme warns that 5 million people in Malawi have been experiencing chronic food shortages for several years. But famine-wracked Malawi has yet to experience a major civil war. Similarly, the Asian tsunami in 2004 killed hundreds of thousands of people, generated millions of environmental refugees, and led to severe shortages of shelter, food, clean water, and electricity. Yet the tsunami, one of the most extreme catastrophes in recent history, did not lead to an outbreak of resource wars. Clearly then, there is much more to armed conflict than resource scarcity and natural disasters.

#### Long term trends prove global food security is increasing

Pingali 3 (Prabhu Pingali, Director of Agriculture and Economic Analysis Division – FAO, and Randy Stringer, Chief of the Comparative Agriculture Development Service – FAO, “Food Security and Agriculture in the Low Income Food Deficit Countries: 10 Years After the Uruguay Round”, 6-23-2003, http://www.ecostat.unical.it/2003agtradeconf/Invited%20papers/Pingali%20and%20Stringer.PDF)

From a longer term perspective, food security progress has been nothing short of remarkable. The proportion of people in developing countries living with average daily food intakes of less than 2200 kcal fell from 57 percent in the early 1960s to just 10 percent by the end of the century. During this period, per capita food supplies increased by more than 70 percent in China and Indonesia; by more than 50 percent in Pakistan and the Republic of Korea; and by more than 30 percent in Brazil, Burkina Fasso, the Dominican Republic, Ecuador, El Salvador, Jamaica, Mauritania and the Philippines.

#### Food security is increasing worldwide

Pingali 3 – Prabhu Pingali, Director of Agriculture and Economic Analysis Division – FAO, and Randy Stringer, Chief of the Comparative Agriculture Development Service – FAO, “Food Security and Agriculture in the Low Income Food Deficit Countries: 10 Years After the Uruguay Round”, 6-23-2003, http://www.ecostat.unical.it/2003agtradeconf/Invited%20papers/Pingali%20and%20Stringer.PDF

How serious is the food insecurity problem? At the global level, the long term trends of many food security indicators have been positive. For example, the prevalence of undernourishment in developing countries fell from 28 percent of the total population in 1979-81 to 17 percent in 1998-2000. In addition, The average global kcal/person/day grew by 19 percent since the mid-1960 to reach 2800 kcal, with the developing country average expanding by more than 30 percent. As consumption increased, diets shifted towards more meat, milk, eggs, vegetables oils and away from roots and tubers. Livestock products, vegetables and sugars now provide 28 percent of total food consumption in the developing countries, up from 20 percent in the mid 1960s (FAO 2003a).

#### All major populations have sufficient food

Pingali 3 (Prabhu Pingali, Director of Agriculture and Economic Analysis Division – FAO, and Randy Stringer, Chief of the Comparative Agriculture Development Service – FAO, “Food Security and Agriculture in the Low Income Food Deficit Countries: 10 Years After the Uruguay Round”, 6-23-2003, http://www.ecostat.unical.it/2003agtradeconf/Invited%20papers/Pingali%20and%20Stringer.PDF)

Much of this past progress in the developing country aggregate food consumption numbers and undernutrition indicators are influenced decisively by the significant gains made by the most populated countries -- those with populations of more than 100 million, including Brazil, China, India, Indonesia, Nigeria and Pakistan (FAO 2003a). Bangladesh is the only developing country with more than 100 million people where per capita food consumption remains very low. Brazil, China and Indonesia now have daily food consumption levels in the 2900 to 3000 kcal range. China reduced the number of undernourished by 74 million since 1990-92. Ghana, Nigeria, Peru, Thailand and Viet Nam have all achieved reductions of more than 3 million.

### Warming Mod

#### Airlines magnify warming and the environment

Capoccitti 10 (Sam, Aviation Consultant, et al., “Aviation Industry - Mitigating Climate Change Impacts through Technology and Policy”, Journal of Technology Management & Innovation, 5(2), http://www.scielo.cl/scielo.php?pid=S0718-27242010000200006&script=sci\_arttext)

Environmental impact of Flight The main environmental concerns associated with aircraft are climate change, stratospheric ozone reduction (leading to increased surface UV radiation, regional pollution, and local pollution. During flight, aircraft engines emit carbon dioxide, oxides of nitrogen oxides of sulphur, water vapour, hydrocarbons and particles - the particles consist mainly of sulphate from sulphur oxides, and soot. These emissions alter the chemical composition of the atmosphere in a variety of ways, both directly and indirectly (RCEP, 2002). While much of the CO2 is absorbed on Earth in plants and the ocean surface, a huge amount goes into the atmosphere, where it and other gases create a kind of lid around the globe --the so-called greenhouse effect. Heat that would normally escape into space is thus reflected back to Earth, raising global temperatures (Lehrer, 2001). Nitrogen oxides (NOx) and H2O vapor from aircraft increase the formation of cirrus clouds and create contrails, which are visible from the ground. The combination of " contrails and cirrus clouds warm the Earth's surface magnifying the global warming effect of aviation. Together, NOx and water vapour account for nearly two-thirds of aviation's impact on the atmosphere (IPCC estimated that radiative forcing from all aircraft greenhouse gas emissions is a factor of 2 to 4 times higher than that from its CO2 emissions alone). Hence any strategy to reduce aircraft emissions will need to consider other gases and not just CO2" (GreenSkies, n.d.; pg.1). The environmental issues associated with flight are also correlated with the altitude at which the carbon dioxide is emitted, the higher the attitude the greater damage to the ozone layer. Research has shown that the majority of flights fly at an altitude between 29,500 ft and 39,400 ft (9-12 km). Figure 1 (Federal Aviation Administration, 2005; pg. 32 ) highlights the distribution to total fuel burn and emissions by 1 km altitudes for the year 2000. The lower spike in fuel burn and emissions in the 0-1 km range is attributed to aircraft emissions from the ground when aircraft are idling or taxiing. It was noticed after the events of 9/11 (when there was a temporary halt to all commercial flights) that the Earth's temperature was 1 to 2 degrees Celsius colder, which coincides with the theory that aircraft emissions do impact the environment. Figure 1. Altitude distribution of fuel burn and emissions Approaches to Mitigating Environmental Impacts The aviation sector these days is buzzing with talks about aviation emissions. There is a call for aviation emissions by the airlines to be included in climate change pacts (Fogarty, 2009). Talk is now turning to ways of mitigating air travel's future impact on climate change, and these "generally fall within two spheres: technology development, and policy mechanisms" (GLOBE-Net, 2007). Engine Technology, Aerodynamic Body and Weight It is estimated that the aircraft we fly today are 70% more efficient than those 10 years ago. IATA predicts that by 2020, another 25% efficiency will be added to the present day fleet (GLOBE-Net, 2007). Improvements in aerodynamics, engine design and weight reduction are the main areas of improvement to counter the dependence on fossil fuel. Though the replacement of fossil fuel is being vigorously pursued with some limited success, fossil fuels will not expect to be replaced in the near future. Apart from engine efficiency, finding an alternative fuel is part of the challenge for the aviation industry. GLOBE-Net (2007) reports that the majority of efficiency improvements over past aircraft have been achieved through the development and improvements in engine technology. Engine improvements, as in the case of automobiles, must increase fuel efficiency (and therefore, decrease CO2 emissions) with reductions in NOx, water vapour, and other air pollutants. Some technological advancement in engine technology uses high pressure ratios to improve efficiency but this worsens the problem with NOx. If new control techniques for NOx are developed to keep within regulatory compliance limits, high pressure ratios will likely be the path pursued by aircraft manufacturers. Further reduction in emissions can be achieved by matching the advancements in engine technology with better aerodynamic shape and use of light weight material to reduce drag. This certainly contributes to reducing the impact on environment and also can be promoted as a cost-saving measure (e.g., savings in fuel costs). Boeing (2007; pg. 1) indicated that "four key technologies contribute to an impressive 20% improvement in fuel use for the 787 Dreamliner as compared to today's similarly sized airplane. New engines, increased use of light weight composite materials, more-efficient systems applications and modern aerodynamics each contribute to the 787's overall performance." Aircraft manufacturers are also exploring the benefits of other technologies such as the use of winglets, fuselage airflow control devices and weight reductions. These could "reduce fuel consumption by a further 7% says the IPCC, although some have limited practicability" (GLOBE-Net, 2007). In the long term, new aircraft configurations (such as a blended wing body) may achieve major improvements in efficiency. Alternate Energy Solutions The time for zero emission aircraft is still far away. The technologies that may make that possible are still in early stages of development and evaluation. Second-generation biofuels, solar power and fuel cells are all being investigated by the aviation industry as well as the automobile industry. The more fuel aircraft burns, the more emissions emitted into the atmosphere thereby increasing its environmental footprint. The aviation industry has come a long way with fuel technology and with the help of Boeing and Airbus (the world's largest aircraft manufacturers). Today aircraft are lighter, quicker and more fuel efficient. Boeing has an ongoing legacy of integrating environmental performance improvements through technology advancements. Over the last 40 years, airplane CO 2 emissions have been reduced by around 70% and the noise levels have been reduced by approximately 90 percent. The noise footprint of the new 787 Dreamliner is 60% lower than any similar aircraft (Boeing 1998-2007; pg. 14). That legacy continues today with every airplane they design and build (Boeing, 1998-2008; pg. 16). One of the many initiatives supported by Boeing is its search for alternative energy solutions. This initiative will lead to reducing greenhouse gas emissions and at the same time Boeing is pioneering three key environmental advancements: • Advanced-Generation Biofuels - Boeing, Virgin Atlantic and GE Aviation conducted the first commercial flight using a biofuel mix with traditional kerosene-based fuel in February 2008. • Solar Cells - Converting sunlight into electricity • Fuel Cells - Convert hydrogen into heat & electricity without combustion, reducing the need for conventional fuels and eliminating emissions. Like Boeing, Airbus has partnered with Honeywell Aerospace, International Aero Engines and Jet Blue Airways in pursuit of developing a sustainable second-generation bio-fuel for commercial jet use, with the hope of reducing the aviation industry's environmental footprint. Alternative fuel research is a core tenet of Airbus' eco-efficiency initiatives (Airbus, 2008). Airbus research has also lead to test flights using gas to liquid kerosene, which is similar to jet fuel but results in lower emissions and is a much cleaner fuel source. Airbus has also researched other types of alternative fuels; for example, bio-mass to liquid and coal to liquid. On February 1, 2008 an Airbus 380 (in collaboration with Shell International and Rolls Royce) conducted a test flight using gas to liquid kerosene in one of the A380 engines. Over the last year, four airlines have flight tested on biofuel: Virgin Atlantic (in February 2008), Air New Zealand (in December 2008), Continental Airlines and Japan Airlines (in January 2009). They have "already flown on routes with one engine part-powered by a range of biofuels including algae and jatropha. Jatropha, a poisonous plant that produces seeds that can be refined into biofuels, is being touted as a good alternative fuel and a potentially powerful weapon against climate change. Experts say the perennial plant can grow on marginal land with limited rainfall, and does not compete with other food crops or encourage deforestation. Following its flight using jatropha in late December, Air New Zealand has set a goal to have 10 percent of fuel coming from biofuel sources by 2013, while Virgin is aiming for 5 percent by 2015" (Szabo et al., 2009). Pew (2009) reports that "the push in development of biofuels continues with a recent $25 million contract awarded by the Defense Advanced Research Projects Agency to SAIC. The company is being tasked to lead a team in development of an integrated process for producing JP-8 from algae at a cost target of $3/gal." The two-phase program aims to conclude with the design and operation of a pre-pilot scale production facility. But another project that involves Boeing, Honeywell, and CFM hopes to see biofuel production levels in the hundreds of millions of gallons per year by 2012 (Pew, 2009). The International Air Transportation Association (IATA) feels that any alternative fuel should be tested for performance and environmental impact before introducing into the marketplace. IATA researched has shown that the conservative nature of the industry will foster alternative fuels that originally are combined with conventional jet fuel. According to IATA (2008a), alternative fuel systems derived from biomass sources have the potential to lower the carbon footprint and lower other emissions as well. New technologies and more economic integration of alternative fuels along with government subsidies will accelerate the acceptance of these fuels in the market place (IATA, 2008a). In "Are bio-fuels really an alternative?" Jeff Gazzard (2009), a board member of the Aviation Environment Federation contends that the biofuel issue may not be as clear as it seems. The jury is still out as to whether either synthetic or biofuels are yet capable of being either entirely fail-safe for aviation use or environmentally sustainable in the longer term. According to Gazzard (2009) alternate fuels looked attractive when oil was marching towards $147 a barrel, but now that oil has fallen back to below $50 a barrel, $75-$85 a barrel for biofuel is not as attractive. He points out that another issue is that aviation consumes approximately 240 million tones of kerosene a year. Replacing the current aviation fuel with bio-fuel from productive arable land that does not compete with food production would take almost 1.4 million square kilometers, which is greater than twice the area of France. Gazzard (2009) is not convinced that aviation would be the best end-user even if biofuels could be produced sustainably. The industry has also followed with increasing interest in algae as a potential source of aviation fuel but is unconvinced that any cost-effective algae-derived aviation fuel could be produced within a practical timeframe that would allow such fuels to make any substantial contribution to climate change policies of today. Regardless of the skepticism, more and more airlines are testing alternative fuel sources and as global warming continues to escalate in the minds of the consumers. The assessment of GLOBE-Net (2007) is similar - "biofuels could mitigate some aircraft emissions, but the production of biofuels to meet the aviation industry's specifications and quantity demands is currently untested. Ethanol and biodiesel both have properties that make them currently unsuitable for jet fuel, but companies such as Virgin are pursuing biofuels research, investigating possibilities including the use of microorganisms." Further, the option of solar power is still in its infancy and largely unexplored. Boeing (1998-2008; pg. 16) is working with their wholly-owned subsidiary Spectrolab in this area. Spectrolab is one of the world's leading manufacturers of solar cells, powering everything from satellites and interplanetary missions. However, without the commercialization of these and other novel new technologies, annual air traffic growth is expected to outstrip efficiency improvements, resulting in a net rise in CO2 emissions of around 3-4% per year, along with increases in NOx and water vapour emissions. Better Traffic Management One possible contributor to greater aircraft efficiency is improved air traffic management. According to the IATA (2007), there is a 12% inefficiency in global air traffic management which could largely be addressed by three 'mega-projects': a Single Sky for Europe, an efficient air traffic system for the Pearl River Delta in China and a next generation air traffic system in the United States. However, there has not been much progress on these initiatives much to the disappointment of IATA and its leadership. Scientists and aviation experts worldwide are investigating improved air traffic management, lower flight speeds, reducing idling and other efficiencies, searching for areas of potential emissions reductions. Policy Mechanisms In February 2009, four leading airlines and an airport authority - Air France/KLM, British Airways, Cathay Pacific, Virgin Atlantic and airport operator BAA - called for aviation emissions to be included in a broader climate pact. This can be seen as a move to ward off criticism from environmental groups and to probably have a negotiated deal instead of a one that is imposed upon them. Even with only 2% of global pollution coming from airlines, the pressure of the aviation industry has been mounting to participate in emission reduction initiatives (Fogarty, 2009). This call was a prelude to the 2009 Copenhagen Summit on Climate Change where nations are expected to find an agreement around a climate pact that replaces the Kyoto Protocol whose first phase ends in 2012. To date "international air travel is exempt from carbon caps under the Kyoto Protocol. Neither do airlines pay tax on fuel. Understandably, lawmakers are wary of disrupting aviation since air travel represents a cash cow for governments. In the US, for example, the average tax on a $200 ticket is 26%, amounting to about $15bn a year. And the air travel industry picks up the tab for its own infrastructure, an annual bill of about $42bn, according to IATA" (Balch, 2009). In recent years, governments and international organizations have looked at policy options that could create incentives or impose requirements on aircraft operators and manufacturers to reduce emissions. At the forefront of this push is the European Union, which has proposed that aircraft be covered under the region's Emissions Trading Scheme (ETS). Under the proposal, emissions from all flights within the EU will be covered in 2011, with international flights to be included in 2012. The EU hopes to serve as a model for other countries (GLOBE-Net, 2007). An Ernst & Young (2007) study commissioned by the airline industry projects the system would cost airlines more than 40 billion Euros from 2011 to 2022. The IATA states in its climate change strategy that it prefers emissions trading to a carbon tax or other charges, but would rather participate in a worldwide voluntary scheme instead. "The challenge is for the International Civil Aviation Organization (ICAO) and its 190 member States to deliver a global emissions trading scheme that is fair, effective and available for all governments to use on a voluntary basis" (IATA, 2007). Short-term Measures In recent times some airlines have started offering passengers a chance to purchase carbon offsets to neutralize/minimize their carbon emission footprint. Air Canada partners with ZeroFootprint while Westjet has partnered with Offsetters.ca. In 2009, Japan airlines joined hands with Recycle One to help its passengers offset the carbon caused by their flight. "The total emissions figure is based on factors such as distance of travel, aircraft type, baggage and passenger to cargo ratios" (Balch, 2009). Continental, SAS, Qantas, British Airways, JetStar, Virgin Atlantic and Virgin America and some other airlines offer similar programs. Such programs are leading the way now but stronger action may be required to bring a significant reduction in GHG emissions. Long-term Thinking To address the problem of Climate Change, like all other industries, airlines will also have to re-think their business model. They will have to probably agree to be part of a network that moves people and goods from one place to another in an efficient and timely manner. To achieve this goal, they will have to collaborate and network with other transport operators like the railways. "In the Netherlands, airlines and rail companies have a history of cooperation. Long before its merger, KLM had already cancelled several short-haul flights on routes where fast train links existed. Many of KLM's international flights to Dutch cities also finish with a final leg by train" (Balch, 2009). The "Flight" Ahead As demonstrated, the aviation industry plays a vital role in the global economy and provides economic and social benefits. It is also apparent that global temperatures continue to rise while the aviation industry continues to grow. The combination of aviation growth and climate change leads us to believe that CO2 emissions from the aviation industry is one of the many other factors impacting global warming. It has to be addressed even though its impact today is limited to a very low percentage. But with a potential to grow, it cannot go unattended. With this in mind, the following main areas have been identified in order to help reduce aviation emissions. • Strengthen the global leadership strategy (for example, add aviation emissions to Kyoto protocol; revisit fuel surcharge (taxation) issue; create an emissions charge; implement an emissions cap on aviation emissions; enforce Carbon offset programs for all airlines; etc.) • Increase Alternative Fuel technology/implementation (for example, increase biomass fuel technology; etc.) • improvements in Aircraft Technology Efficiency (for example, reduce aircraft fuel consumption and CO2 emissions by replacing older, less fuel efficient aircraft with aircraft using latest fuel efficiency technology and navigation equipment; reduce aircraft noise - mitigate inefficient noise procedures; reduce oxides of nitrogen - try to go beyond compliance limits; etc.) • Improvements in Air Traffic Management (for example, cut inefficiency in current flight patterns - more fuel efficient approaches and overall routing; encourage flight patterns that minimize the impact of non CO2 emissions; optimize aircraft speed; etc.) • Improvements in Operational Efficiencies (for example, increase load factors; eliminate non-essential weight - reassess the value of onboard materials; limit auxiliary power (APU) use by reducing engine idle times and by shutting down engines when taxiing to reduce APU use and fuel burn; reduce taxiing time of aircraft; etc.) All these suggestions require stimulating technology advancements and innovation. Holliday et al. (2002) state that innovation is critical for any organization and industry if it wants to operate in a new global business environment which puts emphasis on environmental alignment of business goals. The aviation industry (airlines, governments, non government organizations, suppliers, manufactures) must work together and create technology advancements that catapult the industry into the future. The innovation created must not only look at how the aviation industry can improve on their CO2 emissions but also how it can change the CO2 emissions landscape. Improving current practices is not good enough. The aviation industry must change the way they operate in order to reduce CO2 emissions. Governments must get involved and work with airlines to spur innovation and remove obstacles for airlines leading the environmental movement.

#### Warming leads to extinction

Burkett 8 – Professor of Law

Maxine Burkett, Associate Professor, University of Colorado Law School, 2008, “Just Solutions to Climate Change: A Climate Justice Proposal for a Domestic Clean Development Mechanism,” 56 Buffalo L. Rev. 169, Lexis

The unparalleled scale of impact the climate crisis has had, and will continue to have, on the globe has been forecasted for almost a century. 3 Most recently, the Intergovernmental Panel on Climate Change (IPCC) has concluded that the warming of the climate system is "unequivocal." 4 With this warming comes the threat of more [\*174] extreme weather, including more intense and longer droughts than have already been observed, 5 heavy precipitation including increased intensity of tropical cyclones, 6 and hot extremes and heat waves. 7 While these changes sound merely inconvenient and perhaps costly, they have been described by the IPCC Chairman, without hyperbole, as dangers that risk "the ability of the human race to survive." 8 In the short term, these extremes will risk the survival of communities that are ill-equipped to adapt to warming as they struggle to moderate and cope with its consequences.

### Airlines Cause Warming

#### Airline emissions will be the leading cause of warming by 2050

Hodgkinson 7 – David Hodgkinson et al, June 2007, Associate Professor in the Law School at UWA; Special Counsel with Clayton Utz, a national Australian law firm; and a principal of The Hodgkinson Group, general editor of Australian Climate Change Law and Policy (2009). executive director of EcoCarbon, “STRATEGIES FOR AIRLINES ON AIRCRAFT EMISSIONS AND CLIMATE CHANGE: SUSTAINABLE, LONG - TERM SOLUTIONS”, <http://www.hodgkinsongroup.com/documents/Hodgkinson_airline_emissions.bak.pdf>

A number of organisations such as the Intergovernmental Panel on Climate Change (IPCC), Oxford University, the Massachusetts Institute of Technology (MIT) and the Tyndall Centre, for example, have studied the impacts of aviation on the global atmosphere. These studies, together with reports from Royal Commissions and other inquiries, make the following points clear: the climate change impacts of aviation are significantly worse than those of its carbon dioxide emissions alone. Further, reference to aviation being responsible for 2% of global carbon dioxide emissions is misleading as the figure (a) is based on total anthropogenic carbon dioxide emissions in 1992 (as determined by the IPCC), not 2007; (b) does not take into account aviation’s non-CO2 greenhouse gas (GHG) emissions which significantly contribute to the climate change impacts of aviation; and (c) ignores growth in air travel; air travel demand is growing at unprecedented rates, yet substantial reductions of aviation GHG emissions are not possible in the short to medium term; not only are emissions from air travel increasing significantly in absolute terms but, against a background of emissions reductions from many other sources, their relative rate of increase is even greater. Put another way, “if the [recommended] reductions in carbon dioxide emissions from groundlevel activities … are achieved, and the growth in air transport projected by the IPCC materialises, then air travel will become one of the major sources of anthropogenic climate change by 2050;”development of alternative jet fuels and aircraft technological developments, together with the development of more efficient operational practices and more efficient air traffic management systems and processes, will only partially offset the growth in aviation emissions; there is presently no systematic or compulsory incentive to reduce international aviation emissions; 􀁸 without government action to significantly reduce aviation growth within the UK, for example, aviation emissions may be greater than those forecast for all other sectors of the economy. As a result, aviation may exceed the carbon target for all sectors by 2050.