# Integrated Economy-wide Modeling

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FAA MOIE

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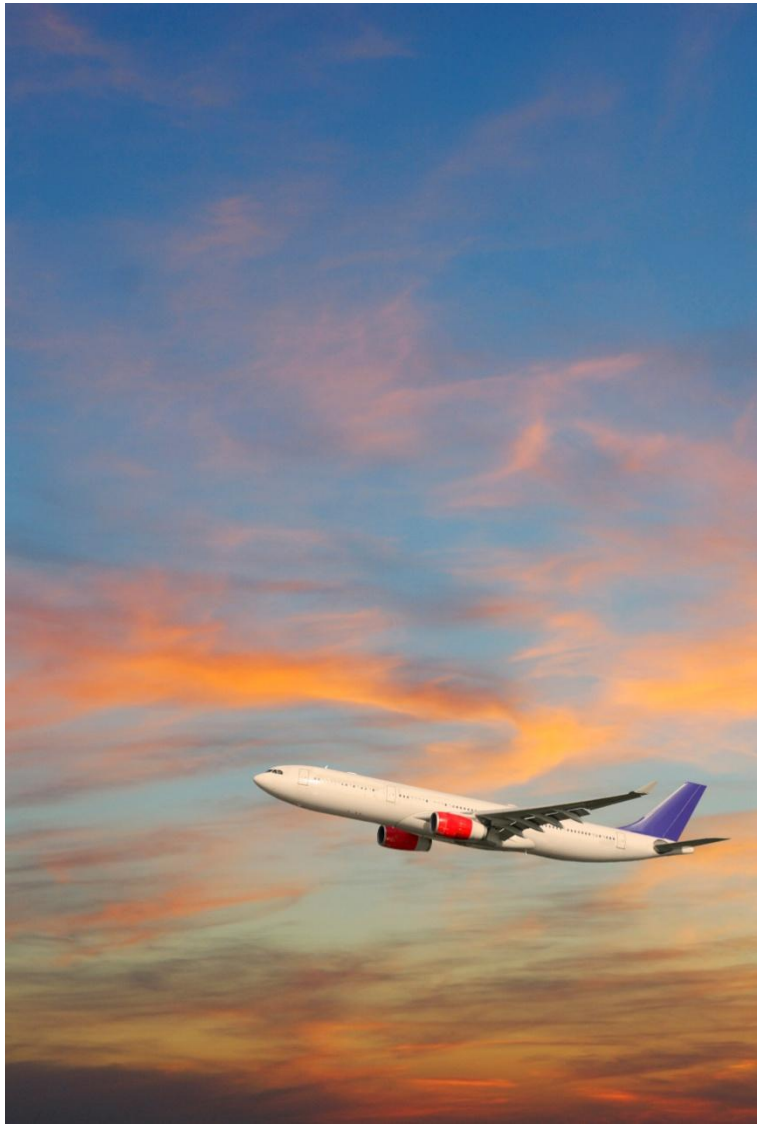
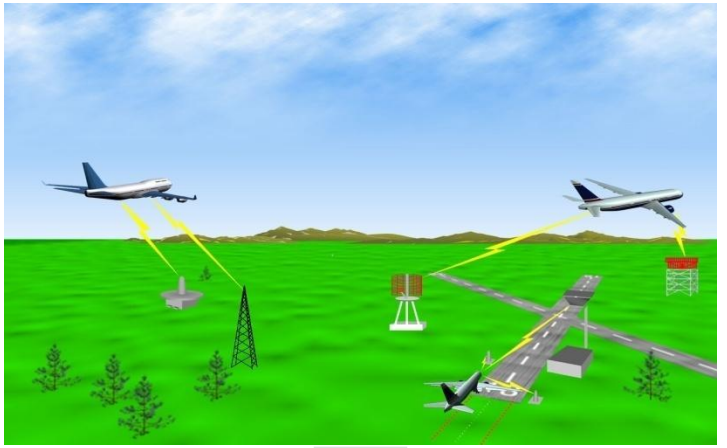
# Problem

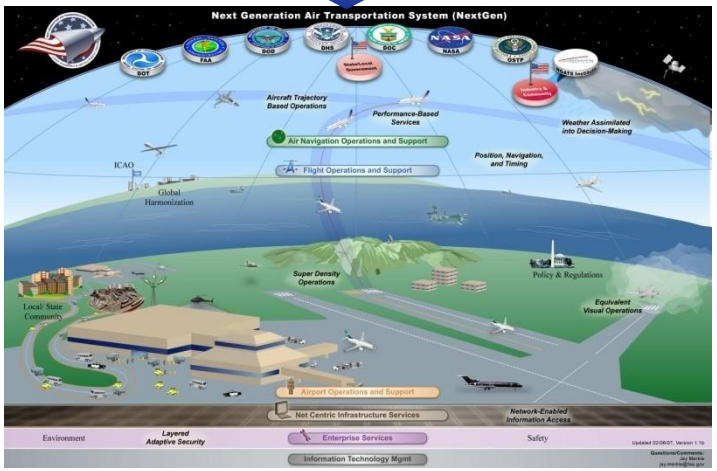
- What is the impact to the broader economy of changes in policy or public investment in the aviation sector?
- While the aviation industry is a key enabler for many parts of the broader economy, there is no consistent, methodologically-sound capability applied to this question



# Background

- The NextGen Air Transportation System (NextGen) will require approval from Congress for significant funding over several years
- Several efforts are underway to quantify what NextGen is worth to the aviation industry, the Federal Aviation Administration (FAA), and the traveling public
- Our effort will provide the “big picture” with economy-wide impact numbers that are complementary with existing and ongoing analyses





# Objective

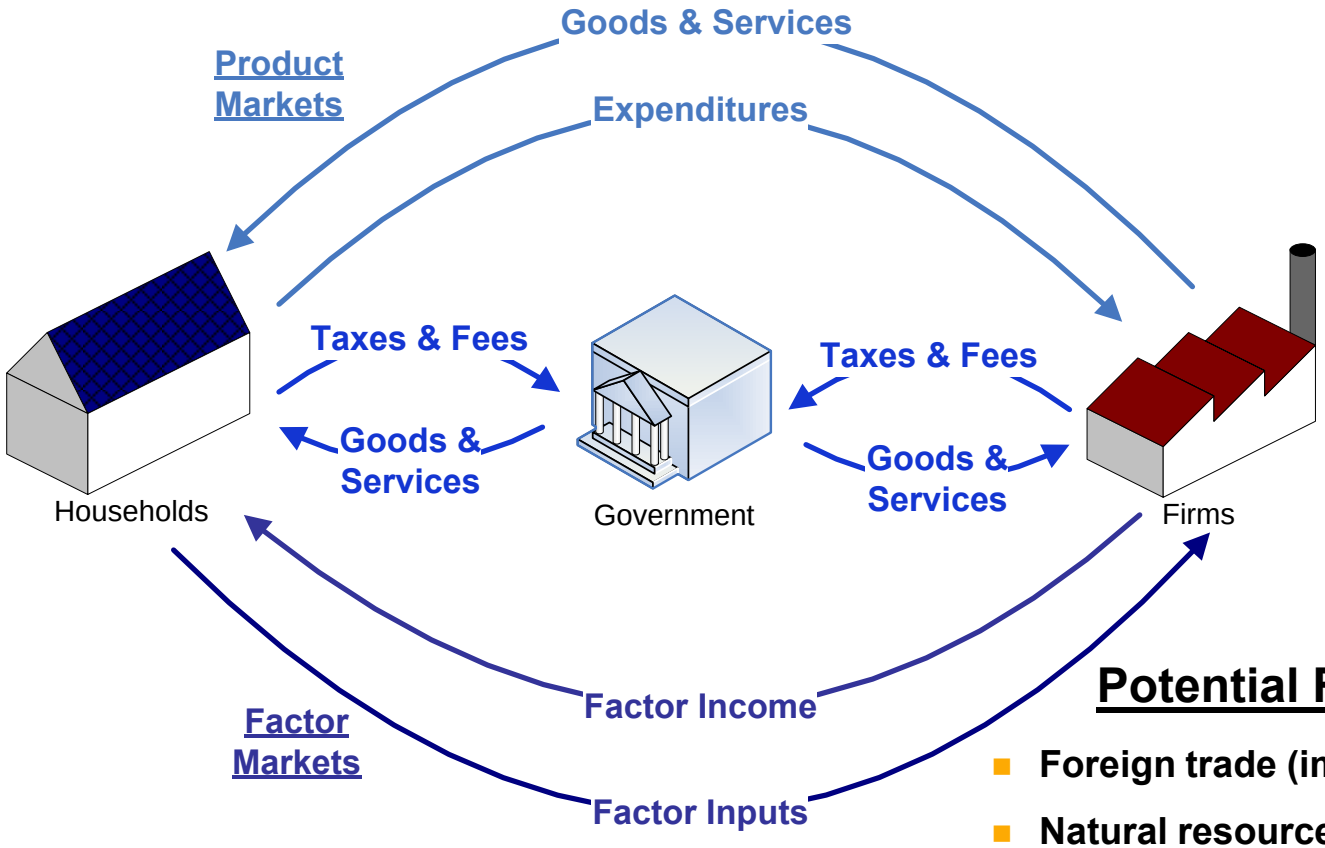
- This research applies computable general equilibrium (CGE) modeling for assessing economy-wide impacts of reduction in constraints through modernization of the National Airspace System (NAS) to the Next Generation Air Transportation System
- CGE is the most methodologically sound framework for assessing economy-wide economic impacts

# Activities

- Review existing Computable General Equilibrium Models
- Obtain model and data
- Identify sectors of interest with respect to aviation
- Run sample scenarios as related to standard macroeconomic shocks and public investment
- Build, run, and analyze a scenario to assess impacts of the Next Generation Air Transportation System

# Highlight

## Methodology: Computable General Equilibrium

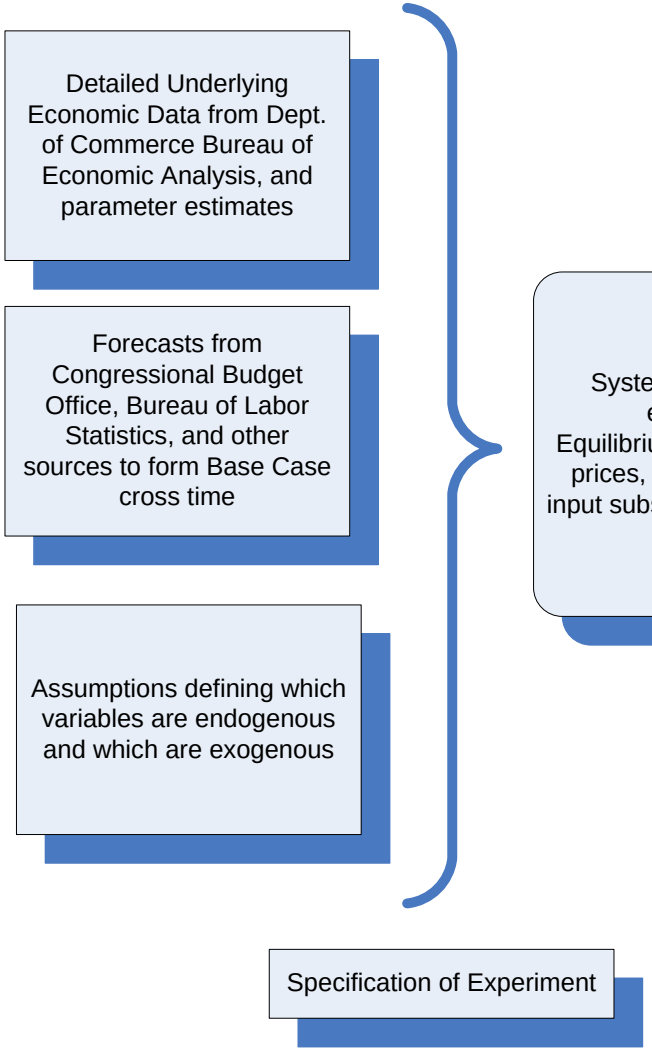



### Potential Refinements:

- Foreign trade (imports and exports)
- Natural resources/environment
- Industries by "industrial sector"
- Behavior by year, over several years
- Different modes of economic competition

# Highlight

## Monash University's U.S. Applied General Equilibrium Model




- **CGE formulation**
- **Ability to trace effects over time**
- **Sufficient resolution/number of industries**
- **Sufficient documentation**
- **Credible**
- **Base of federal users**

# Impacts

- A new perspective on the value to society of NAS modernization available to stakeholders means enhanced understanding and communication between primary stakeholders, Congress, and others
- Primary stakeholders
  - Joint Planning and Development Office (JPDO)
  - FAA Air Traffic Organization Office of Strategy (ATOP)
  - FAA Office of Aviation Policy and Plans (APO)

# Future Plans

- Further work may include refinement of this year's results for NextGen and possible expansion
  - Additional stakeholders
    - FAA Office of Energy and Environment
    - Department of Transportation
    - Department of Homeland Security/ Transportation Security Administration
  - Different policies/investments
  - Impact of broader economic conditions on aviation (reverse causation from the NextGen sample problem)