Lean Aerospace Initiative

Growing the Lean Community

An LAI Plenary Conference

Aerospace Employment and Skills: Past Performance and Future Projections

April 11, 2001

Presented By:
Rob Scott
Economic Policy Institute

Research Sponsored (Jointly) By Labor Aerospace Research Agenda

Lean Aerospace Initiative

Background

- ***Industry has lost more than 500,000 jobs since 1990***
- ***Causes: Defense Collapse (87-93), huge surge in output per worker***
- ***Output per worker rises because of productivity growth and outsourcing***

Lean Aerospace Initiative

MAJOR FUTURE THREATS TO US OUTPUT AND EMPLOYMENT

- ***Airbus***
- ***Growth in Outsourcing***
- ***Declining Defense Spending***

Lean Aerospace Initiative

OUTPUT AND EMPLOYMENT IN THE US

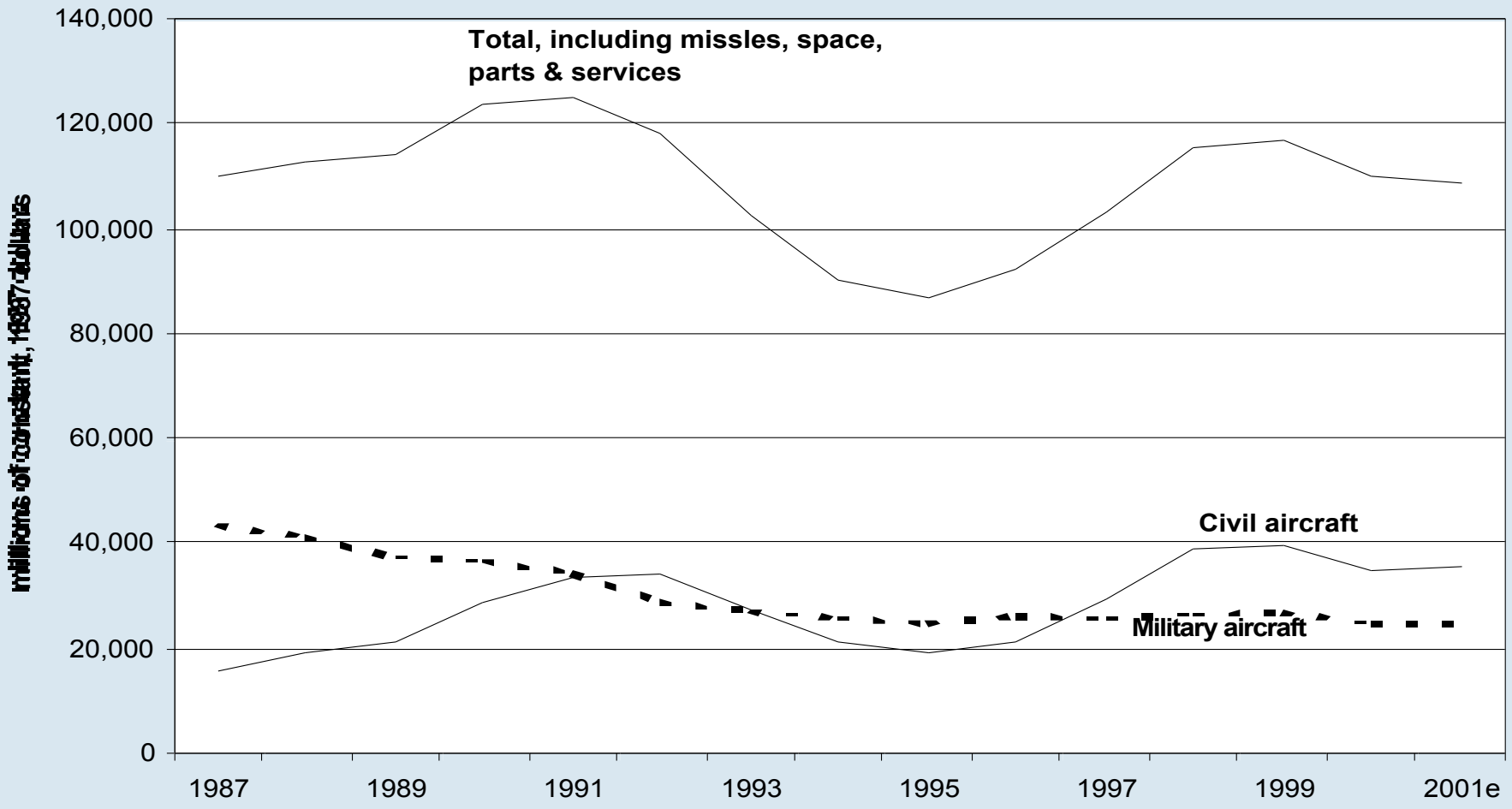
- ***Declining US Sales for the Past Decade***
- ***US Sales and Employment are Closely Related***

Lean Aerospace Initiative

U.S. Aerospace Sales 1987-2001

Figure 1

US Aerospace Sales 1987 - 2001

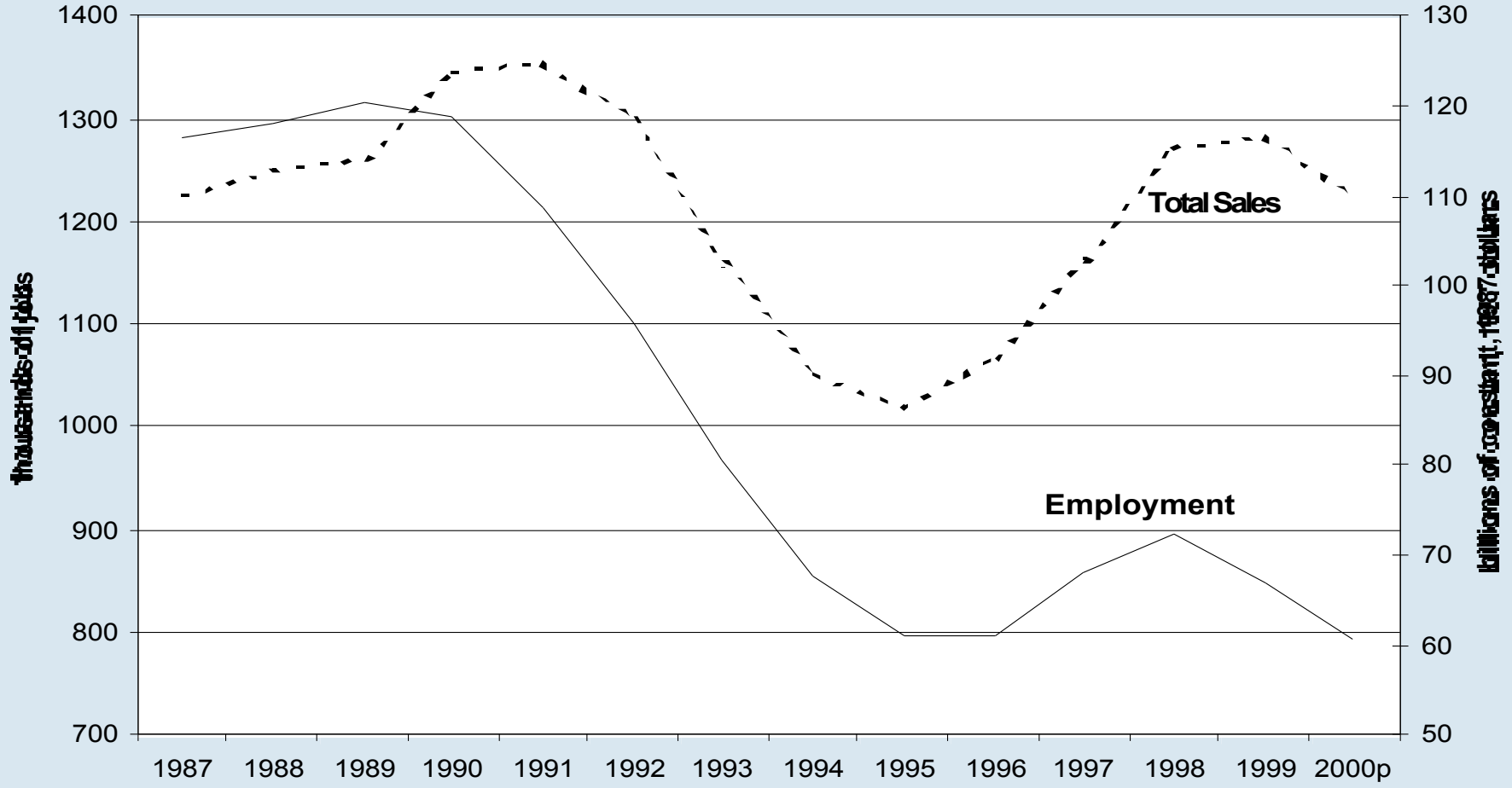


Lean Aerospace Initiative

U.S. Aerospace Employment and Sales 1987-2000

Figure 2

U.S. Aerospace Employment and Sales 1987 - 2000



Lean Aerospace Initiative

THE EUROPEAN THREAT

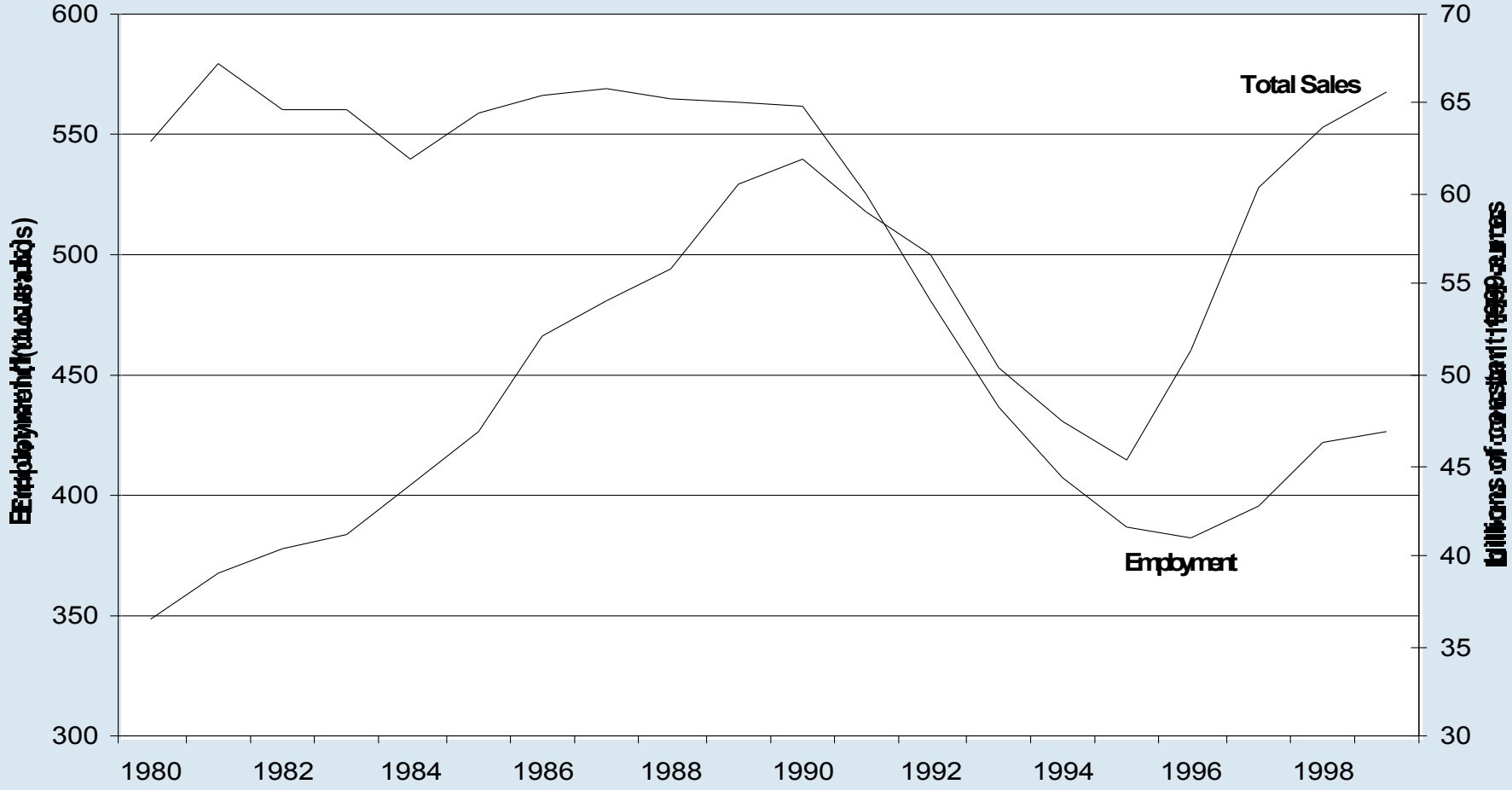
- ***Rising Aerospace Employment and Sales in the EU***

Lean Aerospace Initiative

EU Aerospace Employment and Sales 1980-1999

Figure 3

EU Aerospace Employment and Sales 1980 - 1999



Lean Aerospace Initiative

INTERNATIONAL OUTSOURCING

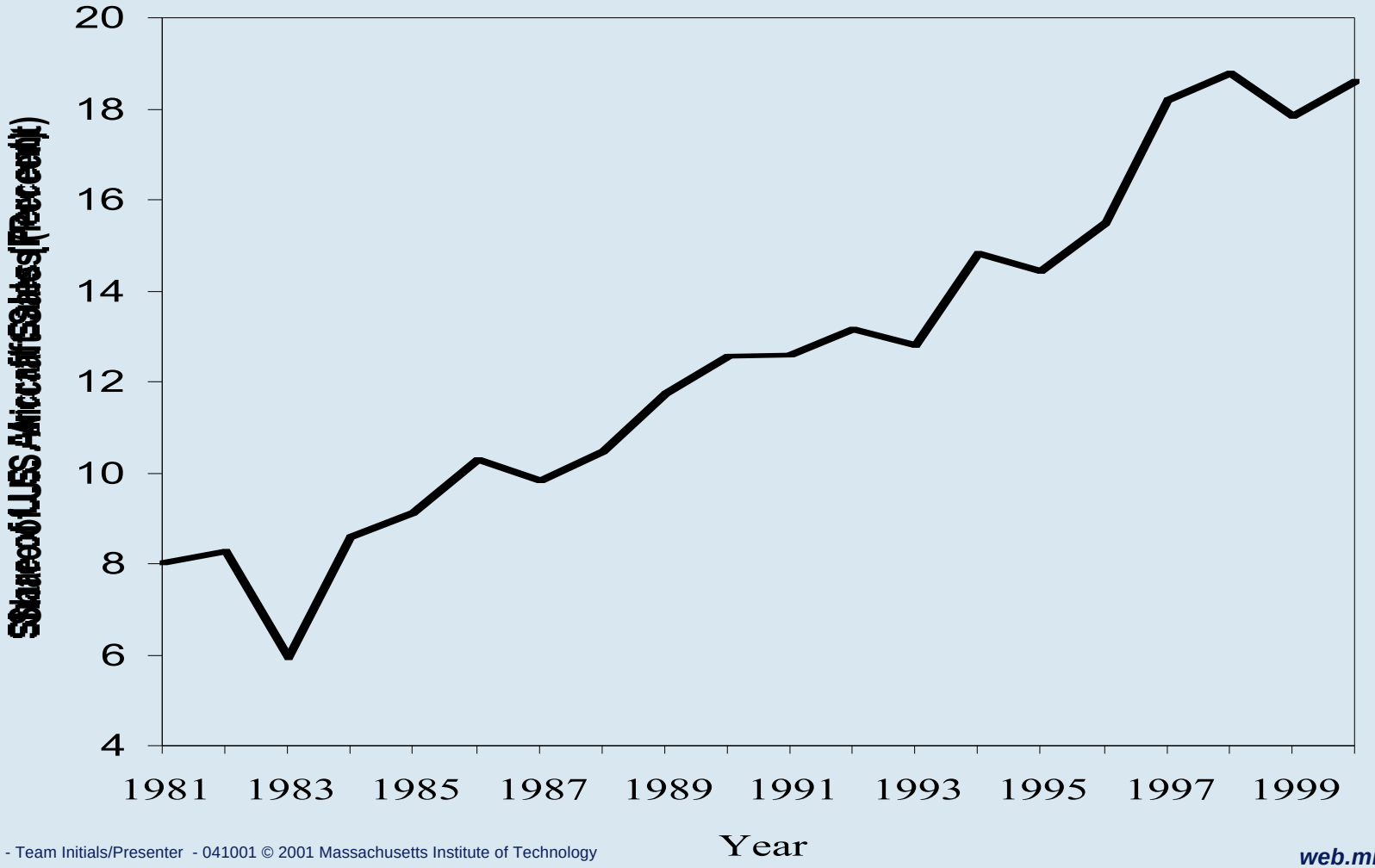
- ***Overall trade balance has increased until recently***

- ***There are also indicators of rising foreign content of domestic aircraft.***

Lean Aerospace Initiative

U.S. Engines and Parts Imports as a Share of Total Aircraft Sales, 1981-2000

Figure 4
U.S. engines and parts imports as a share of total aircraft sales, 1981-2000



Lean Aerospace Initiative

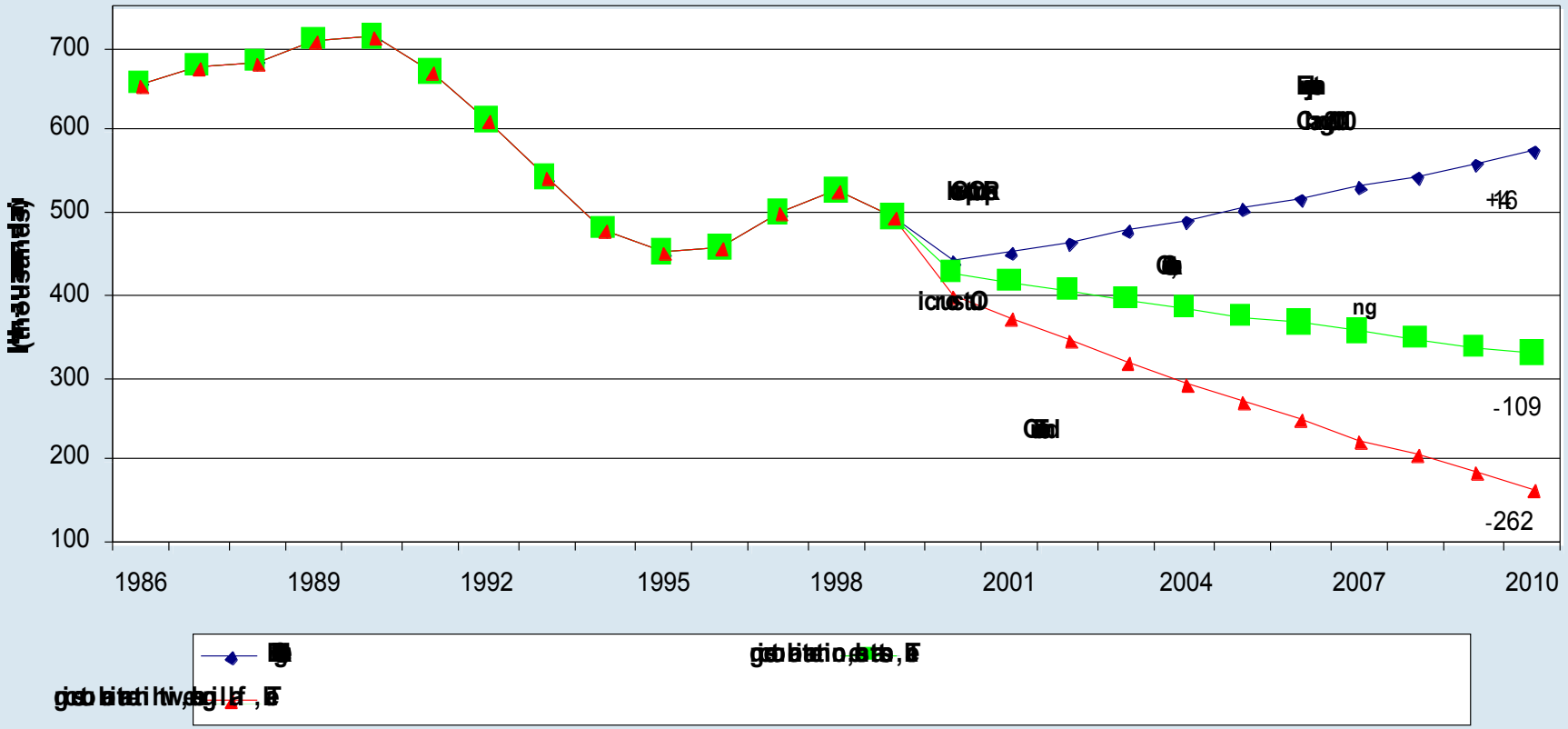
IMPLICATIONS FOR U.S. AEROSPACE EMPLOYMENT

- ***Major threats include:***
  - ***International Outsourcing***
  - ***Airbus***
  - ***Productivity Growth***
  - ***Declining Defense Demand***

Lean Aerospace Initiative

U.S. AIRCRAFT EMPLOYMENT FORECAST, 2000-10

Figure 5
U.S. Aircraft Employment Forecast, 2000-10



Lean Aerospace Initiative

FORECAST RESULTS

- **Low Growth Scenario: 262,000 jobs lost**
- **Falling U.S. Share of World Market: 41.5%**
- **Productivity Growth: 34.6%**
- **Falling Demand: 12.4%**
- **Rising Share of Imported Parts and Engines: 11.5%**

Key Assumptions and Sources:

- **Teal Group, "World Aircraft Overview, 1999", *World Military & Civil Aircraft Briefing.* Charts: "Aircraft Production, Civil and Military" and "The Big Aircraft Builders"**
- **Boeing, "World demand for commercial airplanes," *Current Market Outlook, 2000.***
- **All demand forecasts scaled up to equal total Aircraft, Engines and Parts Sales, as reported in Aerospace Industries Association, *2000 Year-End Review and Forecast*.**
- **Direct employment losses estimated using the Bureau of Labor Statistics "Employment Requirements Table, 1998." Two percent annual productivity growth from 1999 through 2010 assumed in all scenarios.**

Lean Aerospace Initiative

SKILLS STRUCTURE OF THE US AEROSPACE INDUSTRY

- ***Skilled production, professional specialty, and technician jobs predominate***

- ***Earnings are substantially higher than in most other manufacturing industries***

Lean Aerospace Initiative

Aerospace Employment by Occupation

Table 1
Employment of wage and salary workers in aerospace manufacturing by occupation, 1998

(Employment in thousands)		
	Number	Percent
All occupations	615	100
Precision production, craft and repair	174	28.2
Machinists	29	4.7
Inspectors, testers, and graders, precision	25	4
Blue-collar worker supervisors	22	3.6
Aircraft mechanics and service technicians	19	3.1
Aircraft assemblers, precision	16	2.7
Electrical and electronic equipment assemblers	11	1.8
Professional specialty	137	22.3
Executive, administrative, and managerial	112	18.1
Operators, fabricators, and laborers	87	14.2
Administrative support, including clerical	54	8.9
Technicians and related	40	6.4
Service	8	1.3
All other occupations	4	0.6
Source: Bureau of Labor Statistics, Career Guide to Industries, Aerospace Manufacturing, http://stats.bls.gov/oco/cg/cgs006.htm		

Lean Aerospace Initiative

CHANGING DEFENSE PRIORITIES

- ***Implications for Aerospace employment:***
  - ***Procurement freeze and shift from aircraft to Strategic Defense Initiative has significant implications for the industry skills mix***

Lean Aerospace Initiative

Skills Comparison Across Aerospace Sectors