



WICHITA STATE
UNIVERSITY

W. FRANK BARTON
SCHOOL OF BUSINESS

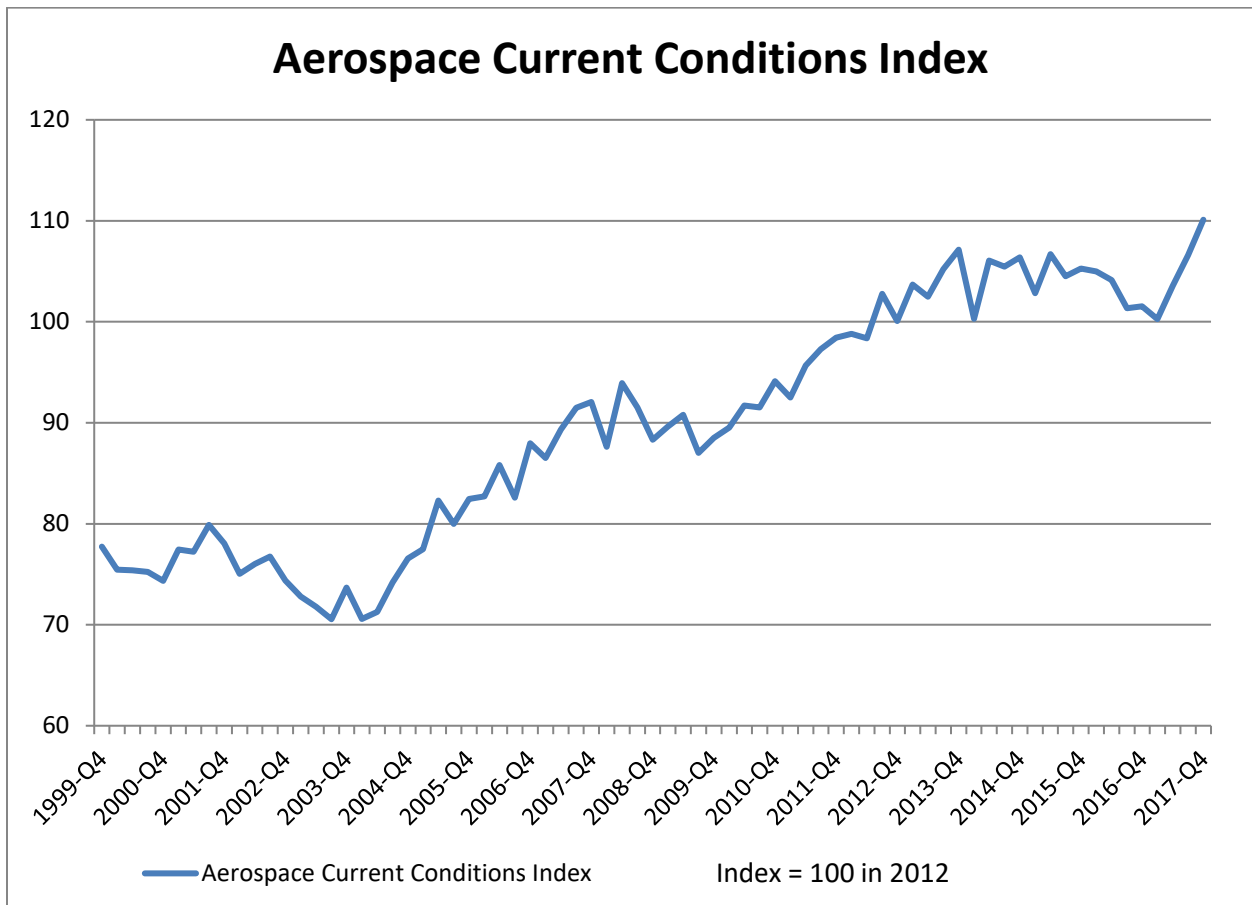
Center for Economic Development
and Business Research

Aerospace Current Conditions and Growth Indices

CEDBR is introducing two new measures of the national aerospace manufacturing industry, the Aerospace Current Conditions Index and the Aerospace Growth Index. Both indices are based on five indicators of the aerospace manufacturing industry: the national aerospace industrial production index, aerospace manufacturing employment, real civilian aircraft exports, real national defense investment in aircraft, and average hourly earnings of aerospace workers.

Aerospace Current Conditions Index

The Aerospace Current Conditions Index is designed to measure the current level of activity in the national aerospace industry and is set to equal 100 in 2012. Values higher than 100 are caused by increases in the indicators within the index, relative to 2012, while values less than 100 signify the indicators hold lower values than they did in 2012.



In the fourth quarter of 2017, the Current Conditions Index increased by 3.5 points, one of the largest single quarter increases for the index, to reach a new peak of 110.1 index points. The index reached its previous peak in the fourth quarter of 2013 at 107.1 index points.

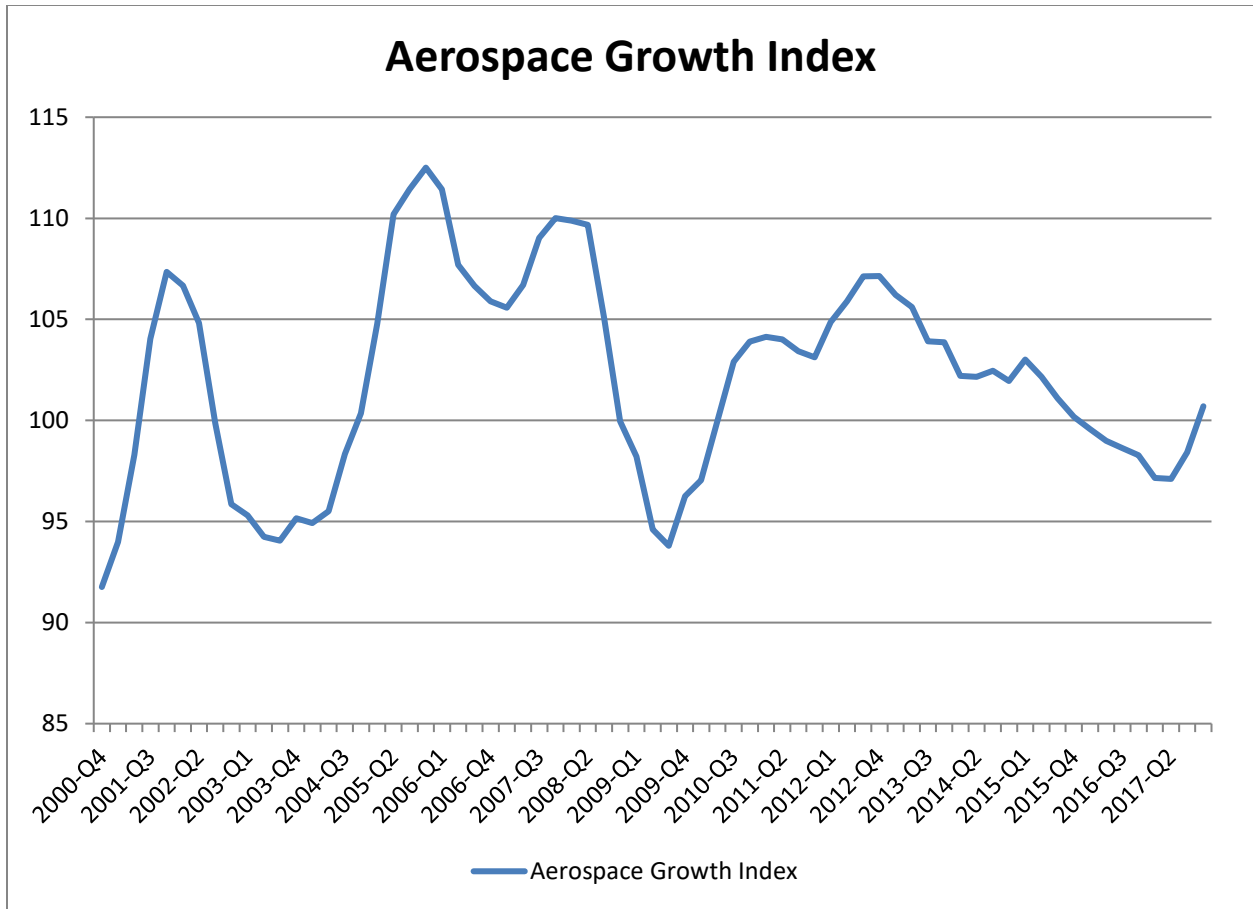
Historically, the Aerospace Current Conditions Index follows a pattern of upwards growth in most quarters, with declines or flat periods surrounding recessions in the aerospace industry. Recessions in the aerospace industry appear to typically follow several quarters after overall economic recessions in the United States. The largest recorded decline in the index, of 9.3 index points, was from the third quarter 2001 to the third quarter of 2003. This decline began during the final quarter of overall economic recession and continued for seven quarters after the end of the overall recession. The most rapid increase in the index occurred from the first quarter of 2004 through the second quarter of 2008, when the index gained 23.4 index points, averaging over a 1.3 index point increase per quarter.

Aerospace Growth Index

The Aerospace Growth Index measures the growth in the Aerospace Current Conditions Index, using year over year growth in a four-quarter average of the Current Conditions Index values. Growth Index values greater than 100 suggest that aerospace manufacturing has been expanding in the past year, relative to the year prior, and values less than 100 suggest that aerospace manufacturing activity is declining. A value of exactly 100 would suggest no change in activity in aerospace manufacturing, year over year.

In the fourth quarter of 2017, the Aerospace Growth Index increased by 2.3 index points to 100.7 index points. This is the first time the index has exceeded 100 since the fourth quarter of 2015. Since this value is slightly greater than 100, it indicates that, in the last four quarters, the aerospace industry has increased modestly relative to the year prior.

The fastest growth period for the aerospace industry, based on the Growth Index, was in 2005, with the highest recorded value of 112.5 occurring in the fourth quarter of 2005. There have been four periods of decline in the aerospace manufacturing industry: in 2000, from 2002 to 2004, from 2009 to 2010, and from 2015 to 2017. The sharpest decline was in 2009 when the index fell from 109.6 index points, to 93.8 index points, which indicated a noticeable decline in activity in the industry.

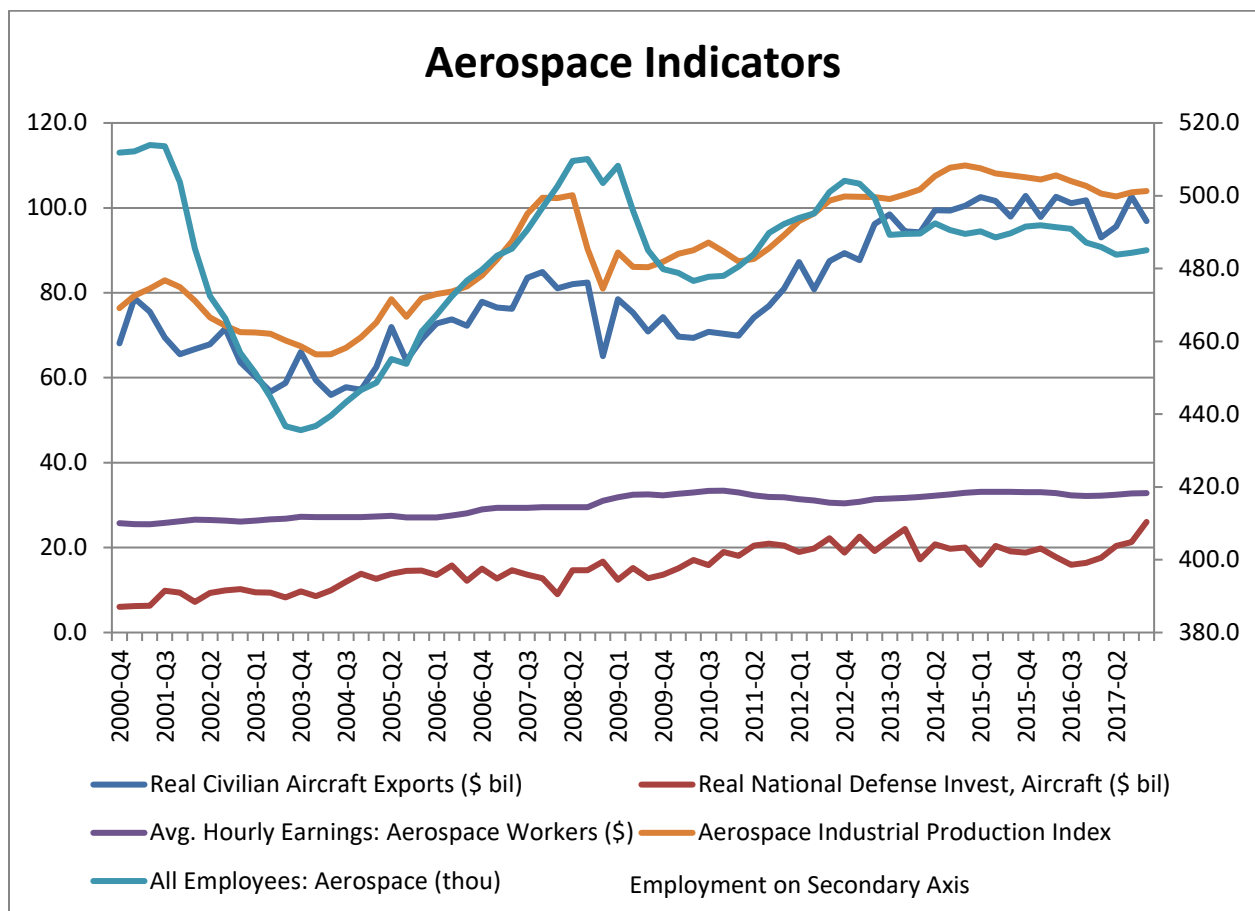


Aerospace Indicators

Both the Current Conditions Index and the Growth Index are based on five indicators of the health of the aerospace manufacturing industry.

- The Aerospace Industrial Production Index, measures the real production output of the aerospace industry based on the value added to economic output from the industry, and is indexed to be equal to 100 in 2012. In the fourth quarter of 2017, the index increased to 104 index points, indicating that production is higher than in 2012.
- Total aerospace employees measures the overall employment level each month in the national aerospace products and parts manufacturing sector of the economy. This includes aircraft manufacturing, aircraft part manufacturing, and the manufacturing of guided missiles and space vehicles. Employment reached its nadir in 2003 with 435,600 workers in the sector, and its peak just prior to the recession in 2008 at 510,100 workers.
- Aerospace production worker average real hourly earnings peaked in 2010 with earnings of \$33.40 per hour and then fell over the next two years to a low of \$30.44 in the fourth quarter of 2012. In the fourth quarter of 2017, average earnings rose to \$32.82, a 4 cent increase over the third quarter.

- The real national defense investment in aircraft represents the seasonally adjusted annual rate of defense spending by the U.S. federal government on aircraft. This indicator tends to be a little more volatile than the others that comprise the index. This spending peaked in the fourth quarter of 2013, at \$24.4 billion, and then declined to \$15.9 billion in the third quarter of 2016. For the past five quarters defense investment in aircraft has increased, reaching \$26 billion in fourth quarter of 2017.
- Real civilian aircraft exports represent the value of civilian aircraft exported to other countries from the United States. In the fourth quarter of 2017, civilian aircraft exports decreased to \$96.9 billion, a decrease of \$5.8 billion from the third quarter. Since the second quarter of 2013, civilian aircraft exports have varied between \$93 and \$103 billion.



Aerospace Indicators	2017Q4	2017Q3	% Change	2016Q4	% Change
Aerospace Industrial Production Index	104.0	103.8	0.2%	105.2	-1.1%
Aerospace Employees (Thousands of Workers)	485.0	480.3	1.0%	487.1	-0.4%
Aerospace Production Workers, Average Hourly Earnings (\$ per hour)	32.8	32.8	0.1%	32.2	2.0%
Real National Defense Investment, Aircraft (\$ Billions)	26.0	21.3	22.3%	16.4	58.5%
Real Civilian Aircraft Exports (\$ Billions)	96.9	102.7	-5.7%	101.8	-4.9%