Aerospace Manufacturing

This cluster produces aircraft, space vehicles, guided missiles, and related parts as well as the necessary search and navigation equipment used by these products. The technical report, Metropolitan Chicago’s traded industry clusters, offers extensive data on the characteristics and performance of the Chicago region’s core industrial assets since 2001, available for download at https://cmap.is/Traded-Clusters.

In the Chicago region in 2017, this cluster consisted of

- **$0.8 billion** total output
- **3,200** jobs
- **30** establishments

Workers in this cluster tend to be **less** racially diverse than the regional labor force.

- **38%** non-white
- **30%** female
- **40%** over age 50

In recent years, the cluster’s competitive position **held steady** as it remained **unspecialized** in the national context.

<table>
<thead>
<tr>
<th>Chicago</th>
<th>Los Angeles</th>
<th>Dallas</th>
</tr>
</thead>
<tbody>
<tr>
<td>-33%</td>
<td>-9%</td>
<td></td>
</tr>
<tr>
<td>jobs</td>
<td>total output</td>
<td></td>
</tr>
</tbody>
</table>

Middle-skill workers have **greater** opportunity than the regional average.

- **$36,096** 25th percentile wage
- **$65,584** 50th percentile wage
- **$90,448** 75th percentile wage

- **57%** of workers have an associate’s degree or higher
- **34%** of jobs typically require at least 2 months of on-the-job training

In 2016, this cluster generated approximately **$10.7 billion** in freight shipments that originate, terminate, or circulate regionally.

- **65%** Truck
- **27%** Multimodal
- **1%** Rail

- **10%** Chicago region
- **21%** Midwest
- **40%** Rest of U.S.
- **29%** Global

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4). Note: Job change is from 2001-17, and total output change is from 2007-17.
Apparel

This cluster manufactures clothing and fabric accessories (for example, hats, gloves, and neckties) for men, women, and children. The technical report, *Metropolitan Chicago’s traded industry clusters*, offers extensive data on the characteristics and performance of the Chicago region’s core industrial assets since 2001, available for download at [https://cmap.is/Traded-Clusters](https://cmap.is/Traded-Clusters).

In the Chicago region in 2017, this cluster consisted of

- **$0.2 billion** total output
- **3,300** jobs
- **190** establishments

Workers in this cluster tend to be more racially diverse than the regional labor force.

- **66%** non-white
- **63%** female
- **39%** over age 50

8% commute by transit

In recent years, the cluster’s competitive position strengthened as it remained **unspecialized** in the national context.

<table>
<thead>
<tr>
<th>Midwest</th>
<th>Los Angeles</th>
<th>New York</th>
</tr>
</thead>
<tbody>
<tr>
<td>-48% jobs</td>
<td>-57% jobs</td>
<td>-67% jobs</td>
</tr>
<tr>
<td>-23% total output</td>
<td>-31% total output</td>
<td>-44% total output</td>
</tr>
</tbody>
</table>

Middle-skill workers have less opportunity than the regional average.

- **$28,007** 25th percentile wage
- **$28,635** 50th percentile wage
- **$37,143** 75th percentile wage

20% of workers have an associate’s degree or higher

25% of jobs typically require at least 2 months of on-the-job training

In 2016, this cluster generated approximately **$6.2 billion** in freight shipments that originate, terminate, or circulate regionally.

**Freight mode share, by value**

- **60%** Truck
- **32%** Multimodal
- **2%** Rail

**Freight trade geography, by value**

- **8%** Chicago region
- **30%** Midwest
- **49%** Rest of U.S.
- **13%** Global

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Note: Job change is from 2001-17, and total output change is from 2007-17.

Source: CMAP analysis of Freight Analysis Framework data (FAF 4.4.1). Note: Data includes only the Illinois portion of the U.S. Census Bureau combined statistical area. Freight data is not provided for service clusters.
Automotive

This cluster manufactures completed cars, trucks, and other motorized transportation equipment (except motorcycles) and includes metal mills and foundries that produce automotive parts. The technical report, *Metropolitan Chicago’s traded industry clusters*, offers extensive data on the characteristics and performance of the Chicago region’s core industrial assets since 2001, available for download at [https://cmap.is/Traded-Clusters](https://cmap.is/Traded-Clusters).

In the Chicago region in 2017, this cluster consisted of

- **$3.0 billion**
  - total output
- **17,800**
  - jobs
- **260**
  - establishments

Workers in this cluster tend to be **more** racially diverse than the regional labor force.

- **57%** non-white
- **27%** female
- **35%** over age 50

Workers in this cluster tend to be **more** racially diverse than the regional labor force.

In recent years, the cluster’s competitive position held steady as it remained **unspecialized** in the national context.

<table>
<thead>
<tr>
<th></th>
<th>Chicago</th>
<th>Detroit</th>
<th>San Francisco</th>
</tr>
</thead>
<tbody>
<tr>
<td>jobs</td>
<td>-27%</td>
<td>-40%</td>
<td>+48%</td>
</tr>
<tr>
<td>total output</td>
<td>+29%</td>
<td>-9%</td>
<td>+92%</td>
</tr>
</tbody>
</table>

Middle-skill workers have **greater** opportunity than the regional average.

- **$26,132**
  - 25th wage percentile
- **$34,634**
  - 50th wage percentile
- **$54,726**
  - 75th wage percentile

- **36%** of workers have an associate’s degree or higher
- **71%** of jobs typically require at least 2 months of on-the-job training

In 2016, this cluster generated approximately **$62.3 billion** in freight shipments that originate, terminate, or circulate regionally.

<table>
<thead>
<tr>
<th></th>
<th>Truck</th>
<th>Multimodal</th>
<th>Rail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freight mode share, by value</td>
<td>75%</td>
<td>17%</td>
<td>4%</td>
</tr>
</tbody>
</table>

**Freight trade geography, by value**

- **14%** Chicago region
- **37%** Midwest
- **39%** Rest of U.S.
- **11%** Global

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Note: Job change is from 2001-17, and total output change is from 2007-17.


Source: CMAP analysis of Freight Analysis Framework data (FAF 4.4.1). Note: Data includes only the Illinois portion of the U.S. Census Bureau combined statistical area. Freight data is not provided for service clusters.
## Biopharmaceuticals

This cluster produces complex chemical and biological substances used in medications, vaccines, diagnostic tests, and similar medical applications. The technical report, *Metropolitan Chicago's traded industry clusters*, offers extensive data on the characteristics and performance of the Chicago region’s core industrial assets since 2001, available for download at [https://cmap.is/Traded-Clusters](https://cmap.is/Traded-Clusters).

In the Chicago region in 2017, this cluster consisted of

<table>
<thead>
<tr>
<th>Total Output</th>
<th>Jobs</th>
<th>Establishments</th>
</tr>
</thead>
<tbody>
<tr>
<td>$13.2 billion</td>
<td>16,900</td>
<td>80</td>
</tr>
<tr>
<td>+107% more</td>
<td>+107%</td>
<td>+107%</td>
</tr>
</tbody>
</table>

more jobs than national average

Workers in this cluster tend to be less racially diverse than the regional labor force.

- 38% non-white
- 49% female
- 32% over age 50

In recent years, the cluster’s competitive position held steady as it remained specialized in the national context.

<table>
<thead>
<tr>
<th>Chicago</th>
<th>San Francisco</th>
<th>Philadelphia</th>
</tr>
</thead>
<tbody>
<tr>
<td>-7% jobs</td>
<td>+134% jobs</td>
<td>-33% jobs</td>
</tr>
<tr>
<td>+44% total output</td>
<td>+41% total output</td>
<td>-11% total output</td>
</tr>
</tbody>
</table>

Largest occupations

- Filling Machine Operator
- Inspector
- Sales Representatives
- Chemists
- Machine Setters

Middle-skill workers have greater opportunity than the regional average.

<table>
<thead>
<tr>
<th>25th</th>
<th>50th</th>
<th>75th</th>
</tr>
</thead>
<tbody>
<tr>
<td>$35,762</td>
<td>$59,297</td>
<td>$75,433</td>
</tr>
</tbody>
</table>

wage percentiles

74% of workers have an associate’s degree or higher

38% of jobs typically require at least 2 months of on-the-job training

In 2016, this cluster generated approximately $44.0 billion in freight shipments that originate, terminate, or circulate regionally.

Freight mode share, by value

<table>
<thead>
<tr>
<th>Truck</th>
<th>Multimodal</th>
<th>Rail</th>
</tr>
</thead>
<tbody>
<tr>
<td>57%</td>
<td>38%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Freight trade geography, by value

<table>
<thead>
<tr>
<th>Chicago region</th>
<th>Midwest</th>
<th>Rest of U.S.</th>
<th>Global</th>
</tr>
</thead>
<tbody>
<tr>
<td>24%</td>
<td>32%</td>
<td>34%</td>
<td>9%</td>
</tr>
</tbody>
</table>

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Note: Job change is from 2001-17, and total output change is from 2007-17.
Business Services

This cluster supports other aspects of a business like corporate headquarters or assist unrelated companies through consulting, legal, computer, engineering and architectural, and other services. The technical report, *Metropolitan Chicago’s traded industry clusters*, offers extensive data on the characteristics and performance of the region’s core industrial assets since 2001, available for download at [https://cmap.is/Traded-Clusters](https://cmap.is/Traded-Clusters).

In recent years, the cluster's competitive position held steady as it remained specialized in the national context.

In the Chicago region in 2017, this cluster consisted of

<table>
<thead>
<tr>
<th>Total output</th>
<th>Jobs</th>
<th>Establishments</th>
</tr>
</thead>
<tbody>
<tr>
<td>$51.0 billion</td>
<td>323,000</td>
<td>+21% more than national average</td>
</tr>
</tbody>
</table>

Middle-skill workers have less opportunity than the regional average.

<table>
<thead>
<tr>
<th>Wage percentiles</th>
<th>25th</th>
<th>50th</th>
<th>75th</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$41,663</td>
<td>$68,080</td>
<td>$88,702</td>
</tr>
</tbody>
</table>

Workers in this cluster tend to be less racially diverse than the regional labor force.

| Commute by transit | 21% |

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Source: CMAP analysis of Integrated Public Use Microdata Series, 2017 American Community Survey data.
## Communication Inputs

This cluster involves goods and services used for communications, including cable, wireless, and satellite services, as well as telephone, broadcasting, and wireless communications equipment. The technical report, *Metropolitan Chicago’s traded industry clusters*, offers extensive data on the characteristics and performance of the region’s core industrial assets since 2001, available for download at https://cmap.is/Traded-Clusters.

In recent years, the cluster's competitive position held steady as it remained specialized in the national context.

In the Chicago region in 2017, this cluster consisted of

<table>
<thead>
<tr>
<th>$5.2 billion total output</th>
<th>9,900 jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>390 establishments</td>
<td>+13% more jobs than national average</td>
</tr>
</tbody>
</table>

Workers in this cluster tend to be as racially diverse than the regional labor force.

| 44% non-white | 35% female | 31% over age 50 |

Middle-skill workers have greater opportunity than the regional average.

<table>
<thead>
<tr>
<th>$50,761</th>
<th>$61,367</th>
<th>$85,559</th>
</tr>
</thead>
<tbody>
<tr>
<td>25th</td>
<td>50th</td>
<td>75th</td>
</tr>
</tbody>
</table>

| 55% of workers have an associate’s degree or higher |
| 37% of jobs typically require at least 2 months of on-the-job training |

<table>
<thead>
<tr>
<th>-56% jobs</th>
<th>-5% total output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago</td>
<td>Dallas</td>
</tr>
<tr>
<td>-59% jobs</td>
<td>-7% total output</td>
</tr>
<tr>
<td>Washington, D.C.</td>
<td></td>
</tr>
</tbody>
</table>

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

In the Chicago region in 2017, this cluster consisted of

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Note: Job change is from 2001-17, and total output change is from 2007-17.

Source: CMAP analysis of Integrated Public Use Microdata Series, 2017 American Community Survey data.

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).
Computer Technology

This cluster manufactures information technology and analytical products like computers, software, audio visual equipment, laboratory instruments, and related standard and precision electronics like circuit boards. The technical report, Metropolitan Chicago’s traded industry clusters, offers extensive data on the characteristics and performance of the Chicago region’s core industrial assets since 2001, available for download at https://cmap.is/Traded-Clusters.

In recent years, the cluster’s competitive position held steady as it remained unspecialized in the national context.

Middle-skill workers have greater opportunity than the regional average.

Workers in this cluster tend to be less racially diverse than the regional labor force.

$5.0 billion total output
21,500 jobs
990 establishments
-38% fewer jobs than national average

$36,100
$69,431
$93,002
25th
50th
75th
wage percentiles

64% of workers have an associate’s degree or higher
32% of jobs typically require at least 2 months of on-the-job training

In 2016, this cluster generated approximately $38.8 billion in freight shipments that originate, terminate, or circulate regionally.

Workers in this cluster tend to be less racially diverse than the regional labor force.

7% commute by transit
38% non-white
30% female
41% over age 50

Chicago
-28% -39%
jobs total output
Boston
-13% +19%
jobs total output
San Francisco
+54%
firms

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4). Note: Job change is from 2001-17, and total output change is from 2007-17.

Note: Data includes only the Illinois portion of the U.S. Census Bureau combined statistical area. Freight data is not provided for service clusters.
Construction

This cluster provides construction materials, components, and products like pipelines or heat exchangers, as well as services like building services for homes and industrial buildings. The technical report, *Metropolitan Chicago's traded industry clusters*, offers extensive data on the characteristics and performance of the region's core industrial assets since 2001, available for download at https://cmap.is/Traded-Clusters.

In recent years, the cluster's competitive position held steady as it remained unspecialized in the national context.

Middle-skill workers have greater opportunity than the regional average.

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).


In the Chicago region in 2017, this cluster consisted of

- **$2.3 billion** total output
- **12,000** jobs
- **670** establishments
- **-53%** fewer jobs than national average

Workers in this cluster tend to be less racially diverse than the regional labor force.

- **37%** non-white
- **10%** female
- **32%** over age 50

4% commute by transit

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Note: Job change is from 2001-17, and total output change is from 2007-17.

| Source: CMAP analysis of Integrated Public Use Microdata Series, 2017 American Community Survey data. |

<table>
<thead>
<tr>
<th>Houston</th>
<th>Dallas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>+12%</strong></td>
<td><strong>+19%</strong></td>
</tr>
<tr>
<td><strong>+20%</strong> jobs</td>
<td><strong>+29%</strong> total output</td>
</tr>
<tr>
<td><strong>+19%</strong></td>
<td><strong>+29%</strong></td>
</tr>
<tr>
<td><strong>+20%</strong> total output</td>
<td><strong>+29%</strong></td>
</tr>
</tbody>
</table>

Middle-skill workers have greater opportunity than the regional average.

<table>
<thead>
<tr>
<th>25th</th>
<th>50th</th>
<th>75th</th>
</tr>
</thead>
<tbody>
<tr>
<td>$38,349</td>
<td>$48,710</td>
<td>$74,695</td>
</tr>
<tr>
<td>wage percentiles</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).
Distribution and E-Commerce

This cluster includes traditional wholesalers as well as mail order houses and electronic merchants that buy, hold, and distribute products or provide support services like packaging and labeling. The technical report, *Metropolitan Chicago’s traded industry clusters*, offers extensive data on the characteristics and performance of the region’s core industrial assets since 2001, available for download at https://cmap.is/Traded-Clusters.

In recent years, the cluster’s competitive position weakened as it became less specialized in the national context.

In the Chicago region in 2017, this cluster consisted of

- $49.2 billion total output
- 220,000 jobs
- 12,790 establishments
- +30% more jobs than national average

Workers in this cluster tend to be as racially diverse than the regional labor force.

- 42% non-white
- 36% female
- 33% over age 50

Middle-skill workers have greater opportunity than the regional average.

- 25th wage percentile: $27,841
- 50th wage percentile: $39,429
- 75th wage percentile: $60,558

- 44% of workers have an associate’s degree or higher
- 31% of jobs typically require at least 2 months of on-the-job training

In Atlanta:

- +8% jobs
- +13% total output

In Chicago:

- +24% jobs
- +32% total output

In Dallas:

- +24% jobs
- +32% total output

Workers in this cluster tend to be as racially diverse than the regional labor force.

- 42% non-white
- 36% female
- 33% over age 50

In recent years, the cluster’s competitive position weakened as it became less specialized in the national context.

In the Chicago region in 2017, this cluster consisted of

- $49.2 billion total output
- 220,000 jobs
- 12,790 establishments
- +30% more jobs than national average

Middle-skill workers have greater opportunity than the regional average.

- 25th wage percentile: $27,841
- 50th wage percentile: $39,429
- 75th wage percentile: $60,558

- 44% of workers have an associate’s degree or higher
- 31% of jobs typically require at least 2 months of on-the-job training

In Atlanta:

- +8% jobs
- +13% total output

In Chicago:

- +24% jobs
- +32% total output

In Dallas:

- +24% jobs
- +32% total output
Downstream Chemicals

This cluster manufactures complex chemical products for end users. These products include adhesives, beauty products, cleaners, dyes, paints, and lubricating oils. The technical report, Metropolitan Chicago's traded industry clusters, offers extensive data on the characteristics and performance of the Chicago region's core industrial assets since 2001, available for download at https://cmap.is/Traded-Clusters.

In the Chicago region in 2017, this cluster consisted of

- $5.6 billion in total output
- 12,900 jobs
- 360 establishments
- +73% more jobs than national average

Workers in this cluster tend to be more racially diverse than the regional labor force.
- 52% non-white
- 37% female
- 39% over age 50

Middle-skill workers have greater opportunity than the regional average.

In 2016, this cluster generated approximately $39.1 billion in freight shipments that originate, terminate, or circulate regionally.

Freight mode share, by value

- Truck: 62%
- Multimodal: 6%
- Rail: 6%

Freight trade geography, by value

- Chicago region: 8%
- Midwest: 57%
- Rest of U.S.: 28%
- Global: 6%

In recent years, the cluster's competitive position weakened as it became less specialized in the national context.

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Chicago Jobs</th>
<th>Chicago Total Output</th>
<th>Houston Jobs</th>
<th>Houston Total Output</th>
<th>Atlanta Jobs</th>
<th>Atlanta Total Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Machine Setters</td>
<td>-32%</td>
<td>-3%</td>
<td>+11%</td>
<td>+37%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filling Machiner Operators</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production Workers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First-Line Supervisors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material Movers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4). Note: Job change is from 2001-17, and total output change is from 2007-17.
**Downstream Metals**

This cluster manufactures metal containers, prefabricated metal structures, and end-user metal products, like ammunition, kitchenware, hardware, and metal home finishings. The technical report, *Metropolitan Chicago's traded industry clusters*, offers extensive data on the characteristics and performance of the Chicago region’s core industrial assets since 2001, available for download at [https://cmap.is/Traded-Clusters](https://cmap.is/Traded-Clusters).

In the Chicago region in 2017, this cluster consisted of:

- **$1.6 billion** in total output
- **14,000** jobs
- **460** establishments

Workers in this cluster tend to be more racially diverse than the regional labor force.

- **54%** non-white
- **23%** female
- **39%** over age 50

**Largest occupations**

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Chicago jobs</th>
<th>Chicago total output</th>
<th>Houston jobs</th>
<th>Houston total output</th>
<th>Dallas jobs</th>
<th>Dallas total output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assemblers</td>
<td>-44%</td>
<td>-25%</td>
<td>-6%</td>
<td>+5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machinists</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Welders and Solderers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Machine Setters</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>First-Line Supervisors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Note: Job change is from 2001-17, and total output change is from 2007-17.

Middle-skill workers have greater opportunity than the regional average.

- **$32,754** (25th percentile)
- **$36,568** (50th percentile)
- **$57,916** (75th percentile)

**Freight trade geography, by value**

- **15%** Chicago region
- **31%** Midwest
- **35%** Rest of U.S.
- **19%** Global

In 2016, this cluster generated approximately **$8.5 billion** in freight shipments that originate, terminate, or circulate regionally.

- **71%** Truck
- **24%** Multimodal
- **1%** Rail

Freight mode share, by value

Source: CMAP analysis of Freight Analysis Framework data (FAF 4.4.1).

Note: Data includes only the Illinois portion of the U.S. Census Bureau combined statistical area. Freight data is not provided for service clusters.

In recent years, the cluster’s competitive position weakened as it became less specialized in the national context.
## Education and Research

This cluster contains educational and training institutions, related supporting establishments, and research and development institutions in physical and life sciences, engineering, and social sciences. The technical report, *Metropolitan Chicago’s traded industry clusters*, offers extensive data on the characteristics and performance of the region’s core industrial assets since 2001, available for download at https://cmap.is/Traded-Clusters.

In recent years, the cluster’s competitive position weakened as it became less specialized in the national context.

<table>
<thead>
<tr>
<th>City</th>
<th>Jobs</th>
<th>Total Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boston</td>
<td>+48%</td>
<td>+75%</td>
</tr>
<tr>
<td>Chicago</td>
<td>+13%</td>
<td>+13%</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>+35%</td>
<td>+20%</td>
</tr>
</tbody>
</table>

In the Chicago region in 2017, this cluster consisted of

- **$12.0 billion** total output
- **130,000** jobs
- **2,280** establishments
- +41% more jobs than national average

Middle-skill workers have less opportunity than the regional average.

<table>
<thead>
<tr>
<th>Percentile</th>
<th>Wage</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>25th</td>
<td>$35,761</td>
<td>80%</td>
</tr>
<tr>
<td>50th</td>
<td>$56,795</td>
<td>9%</td>
</tr>
<tr>
<td>75th</td>
<td>$76,534</td>
<td></td>
</tr>
</tbody>
</table>

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4). Note: Job change is from 2001-17, and total output change is from 2007-17.
**Electrical Equipment**

This cluster manufactures electronic components, wiring devices, fiber optic cables, switchboards, lighting fixtures, electronic motors, transformers, and related products. The technical report, *Metropolitan Chicago’s traded industry clusters*, offers extensive data on the characteristics and performance of the Chicago region’s core industrial assets since 2001, available for download at [https://cmap.is/Traded-Clusters](https://cmap.is/Traded-Clusters).

In the Chicago region in 2017, this cluster consisted of

<table>
<thead>
<tr>
<th>$2.7 billion</th>
<th>16,300 jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>total output</td>
<td>310 establishments</td>
</tr>
</tbody>
</table>

Workers in this cluster tend to be more racially diverse than the regional labor force.

<table>
<thead>
<tr>
<th>48% non-white</th>
<th>35% female</th>
<th>40% over age 50</th>
</tr>
</thead>
</table>

In recent years, the cluster’s competitive position weakened as it became *less specialized* in the national context.

<table>
<thead>
<tr>
<th>Chicago</th>
<th>Atlanta</th>
<th>Los Angeles</th>
</tr>
</thead>
<tbody>
<tr>
<td>-39% jobs</td>
<td>+24% jobs</td>
<td>-35% jobs</td>
</tr>
<tr>
<td>-7% total output</td>
<td>+7% total output</td>
<td>-1% total output</td>
</tr>
</tbody>
</table>

Middle-skill workers have greater opportunity than the regional average.

<table>
<thead>
<tr>
<th>$30,039</th>
<th>$36,458</th>
<th>$68,921</th>
</tr>
</thead>
<tbody>
<tr>
<td>25th wage percentile</td>
<td>50th wage percentile</td>
<td>75th wage percentile</td>
</tr>
</tbody>
</table>

Workers in this cluster tend to be more racially diverse than the regional labor force.

<table>
<thead>
<tr>
<th>5% commute by transit</th>
</tr>
</thead>
</table>

In 2016, this cluster generated approximately $31.2 billion in freight shipments that originate, terminate, or circulate regionally.

**Freight mode share, by value**

| 62% | 29% | 1% |
| Truck | Multimodal | Rail |

**Freight trade geography, by value**

| 9% | 15% | 41% | 35% |
| Chicago region | Midwest | Rest of U.S. | Global |

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4). Note: Job change is from 2001-17, and total output change is from 2007-17.
Environmental Services

This cluster contains establishments primarily engaged in collection, treatment, processing, and disposal of hazardous and non-hazardous waste. The technical report, *Metropolitan Chicago’s traded industry clusters*, offers extensive data on the characteristics and performance of the region’s core industrial assets since 2001, available for download at https://cmap.is/Traded-Clusters.

In the Chicago region in 2017, this cluster consisted of

- **$0.6 billion** total output
- **4,600** jobs
- **180** establishments
- **+38%** more jobs than national average

In recent years, the cluster's competitive position held steady as it remained specialized in the national context.

- **-3%** jobs
- **+15%** total output

<table>
<thead>
<tr>
<th>City</th>
<th>Jobs</th>
<th>Total Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Houston</td>
<td>+86%</td>
<td>+92%</td>
</tr>
<tr>
<td>Chicago</td>
<td>-3%</td>
<td>+15%</td>
</tr>
<tr>
<td>Boston</td>
<td>-2%</td>
<td>+21%</td>
</tr>
</tbody>
</table>

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Note: Job change is from 2001-17, and total output change is from 2007-17.

Middle-skill workers have greater opportunity than the regional average.

- **$42,091** 25th wage percentile
- **$51,343** 50th wage percentile
- **$63,496** 75th wage percentile

Source: CMAP analysis of Integrated Public Use Microdata Series, 2017 American Community Survey data.

Workers in this cluster tend to be more racially diverse than the regional labor force.

- **48%** non-white
- **19%** female
- **30%** over age 50

Source: CMAP analysis of Integrated Public Use Microdata Series, 2017 American Community Survey data.

Largest occupations:

- Refuse Collectors
- Heavy Truck Drivers
- Material Movers
- Hazardous Material Removal Workers
- Operations Managers

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

3% commute by transit

30% of jobs typically require at least 2 months of on-the-job training

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).
Finance

This cluster supports the transaction and growth of financial assets for businesses and individuals. These firms include securities brokers, dealers, and exchanges; credit institutions; and financial investment support. The technical report, *Metropolitan Chicago's traded industry clusters*, offers extensive data on the characteristics and performance of the region’s core industrial assets since 2001, available for download at https://cmap.is/Traded-Clusters.

In the Chicago region in 2017, this cluster consisted of

- **$26.9 billion** total output
- **88,000** jobs
- **5,290** establishments
- +**49%** more jobs than national average

In recent years, the cluster's competitive position weakened as it became less specialized in the national context.

- **-22%** jobs
- **-13%** total output

**Chicago**

**New York**

-20% jobs total output
-22% jobs New York total output

**Philadelphia**

+15% jobs total output
+25% jobs total output

Workers in this cluster tend to be less racially diverse than the regional labor force.

- **34%** non-white
- **48%** female
- **28%** over age 50

Middle-skill workers have less opportunity than the regional average.

- **$44,646** 25th wage percentile
- **$67,773** 50th wage percentile
- **$85,559** 75th wage percentile

70% of workers have an associate’s degree or higher

38% of jobs typically require at least 2 months of on-the-job training

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Source: CMAP analysis of Integrated Public Use Microdata Series, 2017 American Community Survey data.

Note: Job change is from 2001-17, and total output change is from 2007-17.
**Food Processing**

This cluster refines raw food materials and manufactures downstream food products for end users, such as specialty foods, animal foods, baked goods, beverages, packaged fruits and vegetables, and processed dairy products. The technical report, *Metropolitan Chicago’s traded industry clusters*, offers extensive data on the characteristics and performance of the Chicago region’s core industrial assets since 2001, available for download at https://cmap.is/Traded-Clusters.

In the Chicago region in 2017, this cluster consisted of

- **$8.1 billion** total output
- **33,000** jobs
- **700** establishments

Middle-skill workers have **greater** opportunity than the regional average.

- **$26,132** (25th percentile)
- **$31,461** (50th percentile)
- **$42,091** (75th percentile) wages

Workers in this cluster tend to be **more** racially diverse than the regional labor force.

- **61%** non-white
- **40%** female
- **30%** over age 50

In recent years, the cluster’s competitive position **weakened** as it became **less specialized** in the national context.

In 2016, this cluster generated approximately **$84.6 billion** in freight shipments that originate, terminate, or circulate regionally.

Workers in this cluster tend to be **more** racially diverse than the regional labor force.

- **9%** commute by transit
- **61%** non-white
- **40%** female
- **30%** over age 50

**Freight trade geography, by value**

- **25%** Chicago region
- **31%** Midwest
- **32%** Rest of U.S.
- **12%** Global

**Freight mode share, by value**

- **84%** Truck
- **7%** Multimodal
- **7%** Rail

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Note: Job change is from 2001-17, and total output change is from 2007-17.
Furniture

This cluster manufactures residential and office furniture, cabinets, and shelving of various materials as well as manufactured homes. The technical report, *Metropolitan Chicago’s traded industry clusters*, offers extensive data on the characteristics and performance of the Chicago region’s core industrial assets since 2001, available for download at [https://cmap.is/Traded-Clusters](https://cmap.is/Traded-Clusters).

In the Chicago region in 2017, this cluster consisted of

<table>
<thead>
<tr>
<th>$0.6 billion</th>
<th>7,700</th>
<th>410</th>
</tr>
</thead>
<tbody>
<tr>
<td>total output</td>
<td>jobs</td>
<td>establishments</td>
</tr>
</tbody>
</table>

Workers in this cluster tend to be more racially diverse than the regional labor force.

- 53% non-white
- 26% female
- 35% over age 50

In recent years, the cluster’s competitive position held steady as it remained unspecialized in the national context.

<table>
<thead>
<tr>
<th>Chicago</th>
<th>Los Angeles</th>
<th>Dallas</th>
</tr>
</thead>
<tbody>
<tr>
<td>-45%</td>
<td>-20%</td>
<td>-19%</td>
</tr>
<tr>
<td>jobs</td>
<td>total output</td>
<td>total output</td>
</tr>
</tbody>
</table>

Middle-skill workers have greater opportunity than the regional average.

| $28,007 | $35,762 | $46,422 |
| 25th    | 50th    | 75th    |
| wage percentiles |

In 2016, this cluster generated approximately $13.8 billion in freight shipments that originate, terminate, or circulate regionally.

<table>
<thead>
<tr>
<th>31%</th>
<th>30%</th>
<th>26%</th>
<th>12%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago region</td>
<td>Midwest</td>
<td>Rest of U.S.</td>
<td>Global</td>
</tr>
</tbody>
</table>

**Freight mode share, by value**

| 82% | 14% | 1% |
| Truck | Multimodal | Rail |

**Note:** Job change is from 2001-17, and total output change is from 2007-17.

**Source:** CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

**Source:** CMAP analysis of Integrated Public Use Microdata Series, 2017 American Community Survey and Economic Modeling Specialists International data (Emsi 2018.4).

**Source:** CMAP analysis of Freight Analysis Framework data (FAF 4.4.1).

**Source:** CMAP analysis of Freight Analysis Framework data (FAF 4.4.1). Note: Data includes only the Illinois portion of the U.S. Census Bureau combined statistical area. Freight data is not provided for service clusters.
Hospitality and Tourism

This cluster includes services and venues related to recreational travel, including hotels, sport venues, casinos, museums, and other attractions, as well as reservation services and tour operators. The technical report, *Metropolitan Chicago's traded industry clusters*, offers extensive data on the characteristics and performance of the region’s core industrial assets since 2001, available for download at https://cmap.is/Traded-Clusters.

In recent years, the cluster's competitive position held steady as it remained unspecialized in the national context.

<table>
<thead>
<tr>
<th>City</th>
<th>Jobs</th>
<th>Total Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Los Angeles</td>
<td>+16%</td>
<td>+29%</td>
</tr>
<tr>
<td>Chicago</td>
<td>0%</td>
<td>-18%</td>
</tr>
<tr>
<td>San Francisco</td>
<td>+2%</td>
<td>+27%</td>
</tr>
</tbody>
</table>

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Note: Job change is from 2001-17, and total output change is from 2007-17.

Middle-skill workers have less opportunity than the regional average.

- 2,600 establishments
- -18% fewer jobs than national average
- $23,327 25th wage percentile
- $25,943 50th wage percentile
- $39,561 75th wage percentile
- 40% of workers have an associate’s degree or higher
- 20% of jobs typically require at least 2 months of on-the-job training

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Source: CMAP analysis of Integrated Public Use Microdata Series, 2017 American Community Survey data.

Workers in this cluster tend to be as racially diverse than the regional labor force.

- 42% non-white
- 49% female
- 25% over age 50

Source: CMAP analysis of Integrated Public Use Microdata Series, 2017 American Community Survey data.

In the Chicago region in 2017, this cluster consisted of

- $8.2 billion total output
- 76,000 jobs
- 15% commute by transit

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).
Insurance

This cluster provides a range of insurance types, as well as support services such as reinsurance and claims adjustment. The technical report, Metropolitan Chicago’s traded industry clusters, offers extensive data on the characteristics and performance of the region’s core industrial assets since 2001, available for download at https://cmap.is/Traded-Clusters.

In the Chicago region in 2017, this cluster consisted of

- **$18.3 billion** total output
- **45,000** jobs
- **1,080** establishments
- **+14%** more jobs than national average

In recent years, the cluster's competitive position weakened as it became less specialized in the national context.

<table>
<thead>
<tr>
<th>City</th>
<th>Jobs</th>
<th>Total Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boston</td>
<td>+13%</td>
<td>+1%</td>
</tr>
<tr>
<td>Chicago</td>
<td>-21%</td>
<td>+32%</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>-12%</td>
<td>+14%</td>
</tr>
</tbody>
</table>

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Note: Job change is from 2001-17, and total output change is from 2007-17.

Middle-skill workers have less opportunity than the regional average.

- **$44,257** 25th wage percentile
- **$63,801** 50th wage percentile
- **$76,132** 75th wage percentile

<table>
<thead>
<tr>
<th>Education</th>
<th>Degree</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associate</td>
<td>66%</td>
<td></td>
</tr>
</tbody>
</table>

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

<table>
<thead>
<tr>
<th>Training</th>
<th>Requirement</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>On-the-job</td>
<td>2 months</td>
<td></td>
</tr>
</tbody>
</table>

Source: CMAP analysis of Integrated Public Use Microdata Series, 2017 American Community Survey data.
Livestock Processing

This cluster contains establishments engaged in processing meat from livestock and livestock wholesaling. The technical report, *Metropolitan Chicago’s traded industry clusters*, offers extensive data on the characteristics and performance of the Chicago region’s core industrial assets since 2001, available for download at https://cmap.is/Traded-Clusters.

Workers in this cluster tend to be more racially diverse than the regional labor force. 72% non-white, 38% female, 38% over age 50, 9% commute by transit.

In the Chicago region in 2017, this cluster consisted of

- **$1.3 billion** total output
- **9,000** jobs
- **100** establishments
- **-39%** fewer jobs than national average

Workers in this cluster tend to be more racially diverse than the regional labor force.

| Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4). |

In recent years, the cluster’s competitive position held steady as it remained unspecialized in the national context.

<table>
<thead>
<tr>
<th>Percentage Change</th>
<th>Jobs</th>
<th>Total Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>+10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+23%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chicago</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-6%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+55%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Atlanta</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+23%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Philadelphia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>+55%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Middle-skill workers have greater opportunity than the regional average.

<table>
<thead>
<tr>
<th>Wage Percentiles</th>
<th>25th</th>
<th>50th</th>
<th>75th</th>
</tr>
</thead>
<tbody>
<tr>
<td>$25,070</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$28,007</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$30,039</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

15% of workers have an associate’s degree or higher.

29% of jobs typically require at least 2 months of on-the-job training.

In 2016, this cluster generated approximately

**$23.2 billion**

in freight shipments that originate, terminate, or circulate regionally.

<table>
<thead>
<tr>
<th>Freight Mode Share, by Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
</tr>
<tr>
<td>97%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Freight Trade Geography, by Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago region</td>
</tr>
<tr>
<td>24%</td>
</tr>
</tbody>
</table>

Source: CMAP analysis of Freight Analysis Framework data (FAF 4.4.1). Note: Data includes only the Illinois portion of the U.S. Census Bureau combined statistical area. Freight data is not provided for service clusters.

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).
Marketing and Publishing

This cluster provides physical and graphical design services, digital and hard copy publishing, and marketing including advertising creation, marketing research, media buying, and public relations. The technical report, *Metropolitan Chicago’s traded industry clusters*, offers extensive data on the characteristics and performance of the region’s core industrial assets since 2001, available for download at https://cmap.is/Traded-Clusters.

In the Chicago region in 2017, this cluster consisted of

- **$15.6 billion** total output
- **85,000** jobs
- **6,500** establishments
- **+75%** more jobs than national average

Middle-skill workers have less opportunity than the regional average.

**26%** commute by transit

In recent years, the cluster's competitive position held steady as it remained specialized in the national context.

- **+6%** jobs
- **+14%** total output

San Francisco

- **+88%** jobs
- **+470%** total output

Chicago

- **+14%** jobs
- **+47%** total output

New York

Workers in this cluster tend to be less racially diverse than the regional labor force.

- **26%** non-white
- **53%** female
- **27%** over age 50

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Source: CMAP analysis of Integrated Public Use Microdata Series, 2017 American Community Survey data.

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Note: Job change is from 2001-17, and total output change is from 2007-17.

Medical Devices

This cluster manufactures surgical, medical, dental, optical, ophthalmic, and veterinary instruments and supplies. The technical report, *Metropolitan Chicago’s traded industry clusters*, offers extensive data on the characteristics and performance of the Chicago region’s core industrial assets since 2001, available for download at [https://cmap.is/Traded-Clusters](https://cmap.is/Traded-Clusters).

In the Chicago region in 2017, this cluster consisted of:

- **$3.1 billion** total output
- **10,600** jobs
- **220** establishments

Workers in this cluster tend to be as racially diverse than the regional labor force.

- **41%** non-white
- **40%** female
- **38%** over age 50

Middle-skill workers have greater opportunity than the regional average.

- **$32,754**
  - 25th wage percentile
- **$38,349**
  - 50th wage percentile
- **$60,741**
  - 75th wage percentile

In recent years, the cluster’s competitive position strengthened as it became more specialized in the national context.

| Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4). Note: Job change is from 2001-17, and total output change is from 2007-17. |
|---|---|---|---|---|
| **Chicago** | **Boston** | **Los Angeles** |
| -25% | +2% | -19% |
| jobs | total output | jobs | total output |
| +17% | +37% |

In 2016, this cluster generated approximately **$73.5 billion** in freight shipments that originate, terminate, or circulate regionally.

- **43%** Truck
- **51%** Multimodal
- **1%** Rail

Freight mode share, by value

| Source: CMAP analysis of Freight Analysis Framework data (FAF 4.4.1). Note: Data includes only the Illinois portion of the U.S. Census Bureau combined statistical area. Freight data is not provided for service clusters. |
|---|---|---|---|---|
| **Chicago region** | **Midwest** | **Rest of U.S.** | **Global** |
| 28% | 29% | 34% | 9% |

Freight trade geography, by value

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).
Metalworking Technology

This cluster produces machine tools and process metal for use in metalworking, as well as downstream metal fasteners and hand tools. The technical report, *Metropolitan Chicago’s traded industry clusters*, offers extensive data on the characteristics and performance of the Chicago region’s core industrial assets since 2001, available for download at https://cmap.is/Traded-Clusters.

In the Chicago region in 2017, this cluster consisted of

| $3.4 billion | 26,000 | 1,100 |
| total output | jobs | establishments |

Workers in this cluster tend to be as racially diverse than the regional labor force.

- 41% non-white
- 19% female
- 41% over age 50

In recent years, the cluster’s competitive position weakened as it became less specialized in the national context.

| -27% | +1% |
| jobs | total output |

| -28% | -10% |
| jobs | total output |

| Chicago | Detroit | Los Angeles |
| -35% | -27% | -28% |
| jobs | total output | total output |

In 2016, this cluster generated approximately $22.7 billion in freight shipments that originate, terminate, or circulate regionally.

| 72% | 20% | 3% |
| Truck | Multimodal | Rail |

Workers in this cluster tend to be as racially diverse than the regional labor force.

- 41% non-white
- 19% female
- 41% over age 50

Middle-skill workers have greater opportunity than the regional average.

| $32,939 | $36,458 | $54,726 |
| 25th | 50th | 75th |

| 27% | 66% |
| of workers | of jobs typically |
| have an associate’s | require at least |
| degree or higher | 2 months of |

| on-the-job training |

Workers in this cluster tend to be as racially diverse than the regional labor force.

- 41% non-white
- 19% female
- 41% over age 50

| 3% | 29% | 32% | 25% |
| commute by transit | Chicago region | Midwest | Rest of U.S. | Global |

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Note: Job change is from 2001-17, and total output change is from 2007-17.

Source: CMAP analysis of Freight Analysis Framework data (FAF 4.4.1).

Note: Data includes only the Illinois portion of the U.S. Census Bureau combined statistical area. Freight data is not provided for service clusters.
Oil and Gas

This cluster includes firms involved in locating, extracting, refining, and transporting petroleum products, as well as those that provide the necessary equipment and support services. The technical report, *Metropolitan Chicago’s traded industry clusters*, offers extensive data on the characteristics and performance of the Chicago region’s core industrial assets since 2001, available for download at https://cmap.is/Traded-Clusters.

In the Chicago region in 2017, this cluster consisted of

- **$3.2 billion** total output
- **2,600** jobs
- **80** establishments

Workers in this cluster tend to be **less** racially diverse than the regional labor force.

- **26%** non-white
- **23%** female
- **38%** over age 50

Middle-skill workers have **greater** opportunity than the regional average.

- Middle-skill workers have greater opportunity than the regional average.

- **$38,349** 25th wage percentile
- **$60,136** 50th wage percentile
- **$74,695** 75th wage percentile

Workers in this cluster tend to be **less** racially diverse than the regional labor force.

- **4%** commute by transit
- **26%** non-white
- **23%** female
- **38%** over age 50

In recent years, the cluster’s competitive position held steady as it remained **unspecialized** in the national context.

- **+12%** jobs total output
- **-33%** total output

In 2016, this cluster generated approximately **$80.4 billion** in freight shipments that originate, terminate, or circulate regionally.

- **35%** Chicago region
- **13%** Midwest
- **20%** Rest of U.S.
- **32%** Global

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Note: Job change is from 2001-17, and total output change is from 2007-17.
Paper and Packaging

This cluster contains the paper mills and manufacturers of paper products used for shipping, packaging, containers, office supplies, personal products, and similar products. The technical report, Metropolitan Chicago’s traded industry clusters, offers extensive data on the characteristics and performance of the Chicago region’s core industrial assets since 2001, available for download at https://cmap.is/Traded-Clusters.

In the Chicago region in 2017, this cluster consisted of

- **$2.0 billion** total output
- **15,700** jobs
- **250** establishments

Middle-skill workers have greater opportunity than the regional average.

- **$31,554** 25th wage percentile
- **$36,096** 50th wage percentile
- **$49,902** 75th wage percentile

Workers in this cluster tend to be more racially diverse than the regional labor force.

- **64%** non-white
- **31%** female
- **37%** over age 50

In recent years, the cluster’s competitive position held steady even though as it became more specialized in the national context.

- **-29%** jobs total output
- **-11%** total output

<table>
<thead>
<tr>
<th>City</th>
<th>Chicago</th>
<th>Atlanta</th>
<th>Philadelphia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jobs</td>
<td>-32%</td>
<td>-29%</td>
<td>-46%</td>
</tr>
<tr>
<td>Output</td>
<td>-5%</td>
<td>-11%</td>
<td>-16%</td>
</tr>
</tbody>
</table>

In 2016, this cluster generated approximately **$28.2 billion** in freight shipments that originate, terminate, or circulate regionally.

Workers in this cluster tend to be more racially diverse than the regional labor force.

- **5%** commute by transit
- **64%** non-white
- **31%** female
- **37%** over age 50

Freight mode share, by value

- **84%** Truck
- **8%** Multimodal
- **7%** Rail

Freight trade geography, by value

- **22%** Chicago region
- **34%** Midwest
- **34%** Rest of U.S.
- **9%** Global

Source: CMAP analysis of Integrated Public Use Microdata Series, 2017 American Community Survey data.

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Note: Job change is from 2001-17, and total output change is from 2007-17.

Note: Data includes only the Illinois portion of the U.S. Census Bureau combined statistical area. Freight data is not provided for service clusters.
Performing Arts

This cluster produces, promotes, and supports live artistic performances, including those by theater companies, dance troupes, musicians, and independent artists. The technical report, *Metropolitan Chicago’s traded industry clusters*, offers extensive data on the characteristics and performance of the region’s core industrial assets since 2001, available for download at https://cmap.is/Traded-Clusters.

<table>
<thead>
<tr>
<th>Performing Arts</th>
<th>Largest occupations</th>
<th>Workers in this cluster tend to be less racially diverse than the regional labor force.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Musicians and Singers</td>
<td>29% non-white</td>
</tr>
<tr>
<td></td>
<td>Writers and Authors</td>
<td>39% female</td>
</tr>
<tr>
<td></td>
<td>Actors</td>
<td>27% over age 50</td>
</tr>
<tr>
<td></td>
<td>Fine Artists and Illustrators</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ushers and Ticket Takers</td>
<td></td>
</tr>
</tbody>
</table>

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

In recent years, the cluster's competitive position held steady as it remained unspecialized in the national context.

<table>
<thead>
<tr>
<th></th>
<th>+28%</th>
<th>+25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>jobs</td>
<td>Los Angeles</td>
<td>Chicago</td>
</tr>
<tr>
<td>total output</td>
<td>+49%</td>
<td>+45%</td>
</tr>
</tbody>
</table>

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Note: Job change is from 2001-17, and total output change is from 2007-17.

In the Chicago region in 2017, this cluster consisted of

- $1.7 billion total output
- 18,000 jobs
- 1,200 establishments
- +2% more jobs than national average

Middle-skill workers have less opportunity than the regional average.

<table>
<thead>
<tr>
<th></th>
<th>25th</th>
<th>50th</th>
<th>75th</th>
</tr>
</thead>
<tbody>
<tr>
<td>$28,248 wage percentiles</td>
<td>$31,461</td>
<td>$39,654</td>
<td></td>
</tr>
<tr>
<td>29th</td>
<td>50th</td>
<td>75th</td>
<td></td>
</tr>
<tr>
<td>of workers have an associate's</td>
<td>degree or</td>
<td>higher</td>
<td></td>
</tr>
<tr>
<td>degree or higher</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Source: CMAP analysis of Integrated Public Use Microdata Series, 2017 American Community Survey data.

- 15% commute by transit
- 44% of jobs typically require at least 2 months of on-the-job training
Plastics

This cluster manufactures plastic materials, components, resins, and products, as well as the industrial machines used to manufacture plastics. The technical report, *Metropolitan Chicago’s traded industry clusters*, offers extensive data on the characteristics and performance of the Chicago region’s core industrial assets since 2001, available for download at [https://cmap.is/Traded-Clusters](https://cmap.is/Traded-Clusters).

In the Chicago region in 2017, this cluster consisted of

<table>
<thead>
<tr>
<th>$4.7 billion</th>
<th>28,700 jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td>total output</td>
<td>500 establishments</td>
</tr>
</tbody>
</table>

Workers in this cluster tend to be more racially diverse than the regional labor force.

<table>
<thead>
<tr>
<th>54% non-white</th>
<th>33% female</th>
<th>38% over age 50</th>
</tr>
</thead>
</table>

In recent years, the cluster’s competitive position held steady as it remained specialized in the national context.

| -18% | +27% |
| jobs | total output |

<table>
<thead>
<tr>
<th>Detroit</th>
<th>Chicago</th>
<th>Atlanta</th>
</tr>
</thead>
<tbody>
<tr>
<td>+3%</td>
<td>-26%</td>
<td>+28%</td>
</tr>
<tr>
<td>+28%</td>
<td>+28%</td>
<td>-16%</td>
</tr>
<tr>
<td>jobs</td>
<td>total output</td>
<td>jobs</td>
</tr>
</tbody>
</table>

Middle-skill workers have greater opportunity than the regional average.

| $29,136 | $34,072 | $53,794 |
| 25th | 50th | 75th |

wage percentiles

| 28% | 58% |
| of workers | of jobs typically |
| have an associate’s degree or higher | require at least 2 months of on-the-job training |

In 2016, this cluster generated approximately $39.5 billion in freight shipments that originate, terminate, or circulate regionally.

| 73% | 15% | 10% |
| Truck | Multimodal | Rail |

Freight trade geography, by value

| 16% | 30% | 39% | 14% |
| Chicago region | Midwest | Rest of U.S. | Global |

Source: CMAP analysis of Freight Analysis Framework data (FAF 4.4.1). Note: Data includes only the Illinois portion of the U.S. Census Bureau combined statistical area. Freight data is not provided for service clusters.
Printing Services

This cluster provides commercial printing, digital printing, and binding services, as well as upstream inputs like ink and prepress services. The technical report, *Metropolitan Chicago's traded industry clusters*, offers extensive data on the characteristics and performance of the region's core industrial assets since 2001, available for download at [https://cmap.is/Traded-Clusters](https://cmap.is/Traded-Clusters).

In recent years, the cluster's competitive position weakened as it became less specialized in the national context.

<table>
<thead>
<tr>
<th>City</th>
<th>-46%</th>
<th>-35%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Los Angeles</td>
<td>jobs</td>
<td>total output</td>
</tr>
<tr>
<td>Chicago</td>
<td>-51%</td>
<td>-33%</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>-47%</td>
<td>-32%</td>
</tr>
</tbody>
</table>

Middle-skill workers have less opportunity than the regional average.

<table>
<thead>
<tr>
<th>Percentile</th>
<th>Wage</th>
<th>Percentage of Workers</th>
<th>Time of On-the-Job Training</th>
</tr>
</thead>
<tbody>
<tr>
<td>25th</td>
<td>$33,025</td>
<td>39%</td>
<td>7%</td>
</tr>
<tr>
<td>50th</td>
<td>$39,429</td>
<td>49%</td>
<td>7%</td>
</tr>
<tr>
<td>75th</td>
<td>$50,761</td>
<td>39%</td>
<td>7%</td>
</tr>
</tbody>
</table>

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Source: CMAP analysis of Integrated Public Use Microdata Series, 2017 American Community Survey data.
Production and Heavy Machinery

This cluster produces machines designed to manufacture parts and devices used in industrial, agricultural, construction, commercial industry, material handling, and related purposes. The technical report, Metropolitan Chicago’s traded industry clusters, offers extensive data on the characteristics and performance of the Chicago region’s core industrial assets since 2001, available for download at https://cmap.is/Traded-Clusters.

In the Chicago region in 2017, this cluster consisted of

- **$4.9 billion** total output
- **33,000** jobs
- **850** establishments
- **+27%** more jobs than national average

Workers in this cluster tend to be **more** racially diverse than the regional labor force.

- **48%** non-white
- **28%** female
- **39%** over age 50

In recent years, the cluster’s competitive position held steady as it remained specialized in the national context.

<table>
<thead>
<tr>
<th></th>
<th>Jobs</th>
<th>Total output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago</td>
<td>-30%</td>
<td>-17%</td>
</tr>
<tr>
<td>Houston</td>
<td>+16%</td>
<td>+17%</td>
</tr>
<tr>
<td>Detroit</td>
<td>-15%</td>
<td>1%</td>
</tr>
</tbody>
</table>

Middle-skill workers have greater opportunity than the regional average.

- **$31,051** 25th wage percentile
- **$36,568** 50th wage percentile
- **$60,558** 75th wage percentile

- **37%** of workers have an associate’s degree or higher
- **60%** of jobs typically require at least 2 months of on-the-job training

In 2016, this cluster generated approximately

- **$58.8 billion** in freight shipments that originate, terminate, or circulate regionally.

**Freight mode share, by value**

- **69%** Truck
- **20%** Multimodal
- **4%** Rail

**Freight trade geography, by value**

- **13%** Chicago region
- **29%** Midwest
- **31%** Rest of U.S.
- **27%** Global

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).
Note: Job change is from 2001-17, and total output change is from 2007-17.

Source: CMAP analysis of Integrated Public Use Microdata Series, 2017 American Community Survey data.

Source: CMAP analysis of Freight Analysis Framework data (FAF 4.4.1).
Note: Data includes only the Illinois portion of the U.S. Census Bureau combined statistical area. Freight data is not provided for service clusters.
Recreational Goods

This cluster manufactures end use products for recreational and decorative purposes, such as toys, bicycles, motorcycles, sporting goods, office supplies, home accessories, and certain small, simple electric goods. The technical report, Metropolitan Chicago’s traded industry clusters, offers extensive data on the characteristics and performance of the Chicago region’s core industrial assets since 2001, available for download at https://cmap.is/Traded-Clusters.

In recent years, the cluster’s competitive position held steady as it remained specialized in the national context.

Workers in this cluster tend to be more racially diverse than the regional labor force.

Middle-skill workers have greater opportunity than the regional average.

In 2016, this cluster generated approximately $29.8 billion in freight shipments that originate, terminate, or circulate regionally.

In the Chicago region in 2017, this cluster consisted of

$1.0 billion total output
6,600 jobs
290 establishments
+22% more jobs than national average

Workers in this cluster tend to be 8% more racially diverse than the regional labor force.

51% non-white
32% female
35% over age 50

Workers in this cluster tend to commute by transit:

8% non-white
52% female
35% over age 50

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Note: Job change is from 2001-17, and total output change is from 2007-17.

Source: CMAP analysis of Freight Analysis Framework data (FAF 4.4.1).

Note: Data includes only the Illinois portion of the U.S. Census Bureau combined statistical area. Freight data is not provided for service clusters.
Transportation and Logistics

This cluster contains all air, rail, bus, water, and freight transportation services, as well as related operation and support activities such as inspections, maintenance, security, and loading/unloading. The technical report, Metropolitan Chicago’s traded industry clusters, offers extensive data on the characteristics and performance of the region’s core industrial assets since 2001, available for download at https://cmap.is/Traded-Clusters.

In recent years, the cluster's competitive position strengthened as it became more specialized in the national context.

In the Chicago region in 2017, this cluster consisted of

- $17.0 billion total output
- 97,000 jobs
- 4,700 establishments
- +47% more jobs than national average

Middle-skill workers have greater opportunity than the regional average.

- $39,191 25th wage percentile
- $46,752 50th wage percentile
- $58,156 75th wage percentile

Workers in this cluster tend to be as racially diverse than the regional labor force.

- 42% non-white
- 24% female
- 34% over age 50

Source: CMAP analysis of Integrated Public Use Microdata Series, 2017 American Community Survey data.

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Note: Job change is from 2001-17, and total output change is from 2007-17.
## Upstream Chemicals

This cluster manufactures basic organic and inorganic chemicals or gases, in particular separate elements that could be used as inputs for more complex downstream chemical products. The technical report, *Metropolitan Chicago’s traded industry clusters*, offers extensive data on the characteristics and performance of the Chicago region’s core industrial assets since 2001, available for download at https://cmap.is/Traded-Clusters.

In the Chicago region in 2017, this cluster consisted of

<table>
<thead>
<tr>
<th>Total Output</th>
<th>Jobs</th>
<th>Establishments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>$2.1 billion</strong></td>
<td><strong>3,100</strong></td>
<td><strong>70</strong></td>
</tr>
</tbody>
</table>

Workers in this cluster tend to be more racially diverse than the regional labor force. 45% non-white, 31% female, 37% over age 50.

Middle-skill workers have greater opportunity than the regional average.

<table>
<thead>
<tr>
<th>Wage Percentiles</th>
<th>25th</th>
<th>50th</th>
<th>75th</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>$35,762</strong></td>
<td><strong>$44,843</strong></td>
<td><strong>$66,434</strong></td>
<td></td>
</tr>
</tbody>
</table>

Workers in this cluster tend to be more racially diverse than the regional labor force.

<table>
<thead>
<tr>
<th>Workers in Cluster</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2% more</td>
<td>commute by transit</td>
<td></td>
</tr>
<tr>
<td>45% non-white</td>
<td>31% female</td>
<td>37% over age 50</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Freight Mode Share, by Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
</tr>
<tr>
<td>58%</td>
</tr>
</tbody>
</table>

Freight trade geography, by value

<table>
<thead>
<tr>
<th>Region</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago region</td>
<td>11%</td>
</tr>
<tr>
<td>Midwest</td>
<td>20%</td>
</tr>
<tr>
<td>Rest of U.S.</td>
<td>47%</td>
</tr>
<tr>
<td>Global</td>
<td>22%</td>
</tr>
</tbody>
</table>

Source: CMAP analysis of Freight Analysis Framework data (FAF 4.4.1). Note: Data includes only the Illinois portion of the U.S. Census Bureau combined statistical area. Freight data is not provided for service clusters.

In recent years, the cluster’s competitive position strengthened as it remained unspecialized in the national context.

<table>
<thead>
<tr>
<th>Chicago</th>
<th>Houston</th>
<th>Philadelphia</th>
</tr>
</thead>
<tbody>
<tr>
<td>+23%</td>
<td>+72%</td>
<td>-16%</td>
</tr>
<tr>
<td>jobs</td>
<td>total output</td>
<td>jobs</td>
</tr>
<tr>
<td>-54%</td>
<td>+17%</td>
<td>-32%</td>
</tr>
</tbody>
</table>

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Note: Job change is from 2001-17, and total output change is from 2007-17.

In 2016, this cluster generated approximately **$10.2 billion** in freight shipments that originate, terminate, or circulate regionally.

Workers in this cluster tend to be more racially diverse than the regional labor force.

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Note: Job change is from 2001-17, and total output change is from 2007-17.
### Upstream Metals

This cluster consists manufacturers of metal products such as pipes, metal closures, wires, springs, and related products, as well as iron and steel mills and foundries and related metal processors. The technical report, *Metropolitan Chicago's traded industry clusters*, offers extensive data on the characteristics and performance of the Chicago region’s core industrial assets since 2001, available for download at [https://cmap.is/Traded-Clusters](https://cmap.is/Traded-Clusters).

In the Chicago region in 2017, this cluster consisted of 16,800 jobs, $2.2 billion in total output, and 420 establishments.

<table>
<thead>
<tr>
<th>Largest occupations</th>
<th>In recent years, the cluster's competitive position weakened as it became less specialized in the national context.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assemblers and Fabricators</td>
<td>-42% jobs</td>
</tr>
<tr>
<td>Machine Setters</td>
<td>-4% total output</td>
</tr>
<tr>
<td>Inspectors and Testers</td>
<td>Chicago</td>
</tr>
<tr>
<td>First-Line Supervisors</td>
<td>-16% total output</td>
</tr>
<tr>
<td>Welders and Solderers</td>
<td>-26% jobs</td>
</tr>
</tbody>
</table>

Workers in this cluster tend to be more racially diverse than the regional labor force.

- **56%** non-white
- **20%** female
- **44%** over age 50

<table>
<thead>
<tr>
<th>Middle-skill workers have greater opportunity than the regional average.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Freight trade geography, by value</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="https://example.com/map" alt="Map showing freight trade" /></td>
</tr>
<tr>
<td>Chicago region</td>
</tr>
<tr>
<td>Midwest</td>
</tr>
<tr>
<td>Rest of U.S.</td>
</tr>
<tr>
<td>Global</td>
</tr>
</tbody>
</table>

| Source: CMAP analysis of Freight Analysis Framework data (FAF 4.4.1). Note: Data includes only the Illinois portion of the U.S. Census Bureau combined statistical area. Freight data is not provided for service clusters. |

### Freight mode share, by value

- **87%** Truck
- **8%** Multimodal
- **3%** Rail

| Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4). |

| Note: Job change is from 2001-17, and total output change is from 2007-17. |

In 2016, this cluster generated approximately $31.2 billion in freight shipments that originate, terminate, or circulate regionally.
**Video Production**

This cluster produce and distribute motion pictures and other video, including specialized viewing venues like drive-in theaters. The technical report, *Metropolitan Chicago’s traded industry clusters*, offers extensive data on the characteristics and performance of the region’s core industrial assets since 2001, available for download at [https://cmap.is/Traded-Clusters](https://cmap.is/Traded-Clusters).

In the Chicago region in 2017, this cluster consisted of:

- **$1.1 billion** total output
- **4,300** jobs
- **530** establishments
- **-53%** fewer jobs than national average

In recent years, the cluster's competitive position weakened as it remain unspecialized in the national context.

<table>
<thead>
<tr>
<th>Location</th>
<th>Job Change</th>
<th>Total Output Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago</td>
<td>-10%</td>
<td>+11%</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>+31%</td>
<td>-1%</td>
</tr>
<tr>
<td>New York</td>
<td>+40%</td>
<td>+27%</td>
</tr>
</tbody>
</table>

Middle-skill workers have less opportunity than the regional average.

<table>
<thead>
<tr>
<th>Decile</th>
<th>Wage Percentile</th>
<th>25th ($36,343)</th>
<th>50th ($52,425)</th>
<th>75th ($54,710)</th>
</tr>
</thead>
</table>

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Workers in this cluster tend to be less racially diverse than the regional labor force.

- **32%** non-white
- **35%** female
- **26%** over age 50

Source: CMAP analysis of Integrated Public Use Microdata Series, 2017 American Community Survey data.

Workers in this cluster tend to be less racially diverse than the regional labor force.

- **32%** non-white
- **35%** female
- **26%** over age 50

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

In recent years, the cluster's competitive position weakened as it remain unspecialized in the national context.

- **8%** commute by transit

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Note: Job change is from 2001-17, and total output change is from 2007-17.
**Vulcanized and Fired Materials**

This cluster produces construction and other materials at extremely high temperatures, such as goods made of tile, brick, ceramic, glass, and rubber. The technical report, *Metropolitan Chicago's traded industry clusters*, offers extensive data on the characteristics and performance of the Chicago region's core industrial assets since 2001, available for download at [https://cmap.is/Traded-Clusters](https://cmap.is/Traded-Clusters).

In the Chicago region in 2017, this cluster consisted of

- **$0.6 billion** total output
- **4,200** jobs
- **180** establishments
- **-42%** fewer jobs than national average

Workers in this cluster tend to be **more** racially diverse than the regional labor force.

- **50%** non-white
- **33%** female
- **43%** over age 50

<table>
<thead>
<tr>
<th>Workers</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>non-white</td>
<td>50%</td>
</tr>
<tr>
<td>female</td>
<td>33%</td>
</tr>
<tr>
<td>over age 50</td>
<td>43%</td>
</tr>
</tbody>
</table>

In recent years, the cluster's competitive position held steady as it remained **unspecialized** in the national context.

- **+2%** jobs
- **+36%** total output

<table>
<thead>
<tr>
<th>City</th>
<th>Change in Jobs</th>
<th>Change in Total Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atlanta</td>
<td>+1%</td>
<td>+14%</td>
</tr>
<tr>
<td>Chicago</td>
<td>-31%</td>
<td>+42%</td>
</tr>
<tr>
<td>Dallas</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Middle-skill workers have **greater** opportunity than the regional average.

<table>
<thead>
<tr>
<th>Wage Percentile</th>
<th>25th</th>
<th>50th</th>
<th>75th</th>
</tr>
</thead>
<tbody>
<tr>
<td>$29,136</td>
<td>$34,634</td>
<td>$46,892</td>
<td></td>
</tr>
</tbody>
</table>

Source: CMAP analysis of Economic Modeling Specialists International data (Emsi 2018.4).

Note: Job change is from 2001-17, and total output change is from 2007-17.

In 2016, this cluster generated approximately **$6.0 billion** in freight shipments that originate, terminate, or circulate regionally.

<table>
<thead>
<tr>
<th>Freight Mode</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
<td>80%</td>
</tr>
<tr>
<td>Multimodal</td>
<td>11%</td>
</tr>
<tr>
<td>Rail</td>
<td>6%</td>
</tr>
</tbody>
</table>

Source: CMAP analysis of Freight Analysis Framework data (FAF 4.4.1).

Note: Data includes only the Illinois portion of the U.S. Census Bureau combined statistical area. Freight data is not provided for service clusters.

In 2016, this cluster generated approximately $6.0 billion in freight shipments that originate, terminate, or circulate regionally.