DFW Economy: Outperforming the State

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Federal Reserve Bank of Dallas
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The views expressed in this presentation are strictly those of the presenter and do not reflect the positions of the Federal Reserve Bank of Dallas or the Federal Reserve System.
• Home to over 6.9 million people, DFW is the largest MSA in TX and fourth largest in U.S.
• DFW is bigger than RI and CT combined
• Ranks sixth in output among U.S. metros
• In 2013, GDP exceeded that of several countries, such as Austria, Denmark and South Africa
• 15 Fortune 500 companies are headquartered in the metroplex
DFW has Larger Booms and Busts

• DFW matches Texas performance over long term
  – Avg. job growth (1990-2014): DFW 2.1% vs. TX 2.1%

• But, DFW booms are slightly bigger...
  – Avg. job growth (2010-2014): DFW 3.2% vs. TX 3.0%
  – Avg. job growth (1993-2000): DFW 4.2% vs. TX 3.3%

• ... and busts are much more severe
  – Total job declines (housing bust): DFW 5.2% vs. TX 4.1%
  – Total job declines (high-tech bust): DFW 5.3% vs. TX 2.2%
DFW Job Growth Outdoes Texas 2013-2015

NOTE: Annual employment is Dec/Dec. 2015 figures are June/Dec annualized growth.

2015 Job Growth by Sector

<table>
<thead>
<tr>
<th>Sector</th>
<th>2015 Growth</th>
<th>Share of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>2.1</td>
<td>87.9%</td>
</tr>
<tr>
<td>Private (87.9%)</td>
<td>2.1</td>
<td></td>
</tr>
<tr>
<td>Trade, transport &amp; utilities (21.2%)</td>
<td>2.9</td>
<td></td>
</tr>
<tr>
<td>Professional &amp; business svcs (16.5%)</td>
<td>3.2</td>
<td></td>
</tr>
<tr>
<td>Government (12.1%)</td>
<td>1.7</td>
<td></td>
</tr>
<tr>
<td>Education &amp; health services (12.4%)</td>
<td>4.4</td>
<td></td>
</tr>
<tr>
<td>Leisure &amp; hospitality (10.4%)</td>
<td>7.0</td>
<td></td>
</tr>
<tr>
<td>Financial activities (8.1%)</td>
<td>2.8</td>
<td></td>
</tr>
<tr>
<td>Manufacturing (7.7%)</td>
<td>-3.4</td>
<td></td>
</tr>
<tr>
<td>Construction &amp; mining (5.7%)</td>
<td>-5.4</td>
<td></td>
</tr>
<tr>
<td>Other services (3.5%)</td>
<td>1.7</td>
<td></td>
</tr>
<tr>
<td>Information (2.3%)</td>
<td>-7.5</td>
<td></td>
</tr>
</tbody>
</table>

NOTES: Annualized percent change, December 2014–June 2015. Numbers in parentheses are shares of total Dallas–Fort Worth nonfarm employment and may not sum to 100 due to rounding.

SOURCES: Bureau of Labor Statistics; Texas Workforce Commission; seasonal and other adjustments by the Federal Reserve Bank of Dallas.
NOTE: Estimates not available for Census years.
SOURCE: U.S. Census Bureau.
Unemployment at a 14-Year Low

SOURCES: Census Bureau; seasonal adjustments by Federal Reserve Bank of Dallas.
What Drives the DFW Economy?
Industry Clusters

• A cluster is a geographically concentrated group of industries related by technology they use, the markets they serve, the goods and services they produce, and the labor skills they require.

• Location Quotient (LQ):

\[
\frac{\text{Share of area's employment in industry } i}{\text{Share of U.S. employment in industry } i}
\]

• LQ >1 => Base industry/specialization

• LQ <1 => Non-base industry
Illustrating Industry Clusters Using Bubble Graphs

- **Mature** (Large, slow growing)
- **Star** (Large, fast growing)
- **Transitioning** (Small, slow growing)
- **Emerging** (Small, fast growing)

**X Axis**
- 2006 to 2014 Percentage Point Change in Employment Share

**Y Axis**
- 2014 Location Quotient
- Y crosses X at 1

Bubble size determined by share of industry employment
Dallas: Texas’ Business and Financial Services Center

**Mature**
- Computer Manufacturing
- Construction
- Advanced Materials

**Star**
- Defense
- Information Technology & Telecommunications
- Business & Financial Svcs
- Recreation & Food Services
- Health

**Transitioning**
- Transportation
- Education

**Emerging**
- Mature
- Star
- Transitioning
- Emerging

Note: Bubble size represents industry share of MSA employment. Source: Texas Workforce Commission; Bureau of Labor Statistics.
Transportation and Manufacturing Drive Fort Worth's Economy

**Mature**
- Transportation Equipment Manufacturing
- Defense
- Transportation & Logistics
- Construction

- Percentage Point Change in Employment Share 2006-2014

**Star**
- Machinery Manufacturing
- Mining & Energy
- Health
- Recreation & Food Svcs
- Business & Financial Services

**Transitioning**
- Note: Bubble size represents industry share of MSA employment.

**Emerging**
Dallas Home Sales Rising, Inventories at Record Lows

NOTE: Last data point is June 2015.
SOURCE: Multiple Listing Service.
# Rapid Home Price Appreciation Continues

<table>
<thead>
<tr>
<th>City</th>
<th>Real Median Sales Price (June 2015)</th>
<th>2014 Change</th>
<th>2015 YTD Annualized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austin</td>
<td>$255,625</td>
<td>7.8%</td>
<td>4.8%</td>
</tr>
<tr>
<td>Dallas</td>
<td>$228,136</td>
<td>10.8%</td>
<td>8.4%</td>
</tr>
<tr>
<td>Fort Worth</td>
<td>$154,646</td>
<td>10.7%</td>
<td>2.0%</td>
</tr>
<tr>
<td>Houston</td>
<td>$208,619</td>
<td>11.0%</td>
<td>2.0%</td>
</tr>
<tr>
<td>San Antonio</td>
<td>$187,846</td>
<td>5.2%</td>
<td>2.4%</td>
</tr>
<tr>
<td>Texas</td>
<td>$197,495</td>
<td>8.4%</td>
<td>5.1%</td>
</tr>
<tr>
<td>U.S.</td>
<td>$220,035</td>
<td>5.1%</td>
<td>4.8%</td>
</tr>
</tbody>
</table>

*SOURCE: Multiple Listing Service.*
Multifamily Construction Elevated in DFW

Index, Jan. 2006=100, 5MMA

DFW Multifamily Permits
Texas Multifamily Permits
Texas Single-family Permits
DFW Single-family Permits

SOURCES: Census Bureau; Bank of Tokyo-Mitsubishi UFJ
# DFW Apartment Market Leads Other Major Metros

<table>
<thead>
<tr>
<th>Metro Area</th>
<th>Occupancy (Q2 2015)</th>
<th>Change in Occupancy (Q2 2014-Q2 2015)</th>
<th>Rent Growth (Q2 2015/Q2 2014)</th>
<th>Net Absorption (units)</th>
<th>Completions (units)</th>
<th>Under Construction (units)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dallas-Fort Worth</td>
<td>95.4%</td>
<td>90 basis points</td>
<td>5.5%</td>
<td>8,100</td>
<td>4,700</td>
<td>35,100</td>
</tr>
<tr>
<td>Houston</td>
<td>94.7%</td>
<td>30 basis points</td>
<td>5.3%</td>
<td>6,000</td>
<td>2,900</td>
<td>32,000</td>
</tr>
<tr>
<td>Austin</td>
<td>95.4%</td>
<td>0 basis points</td>
<td>4.8%</td>
<td>1,600</td>
<td>1,000</td>
<td>13,800</td>
</tr>
<tr>
<td>San Antonio</td>
<td>94.0%</td>
<td>80 basis points</td>
<td>3.9%</td>
<td>2,000</td>
<td>600</td>
<td>8,900</td>
</tr>
</tbody>
</table>

**SOURCE:** MPF Research
DFW Office Market Strong; Houston Sees Weakness

**Dallas**
- Total net absorption
  - Bar chart from 2006 to 2015
- Total vacancy rate
  - Line chart from 2006 to 2015

**Houston**
- Total net absorption
  - Bar chart from 2006 to 2015
- Total vacancy rate
  - Line chart from 2006 to 2015

**Source:** JLL Research, "Office Insight."
Outlook Positive

• Unemployment is at a 14-year low
• Housing market is tight and commercial real estate activity strong
• Energy and mining cluster makes up a small share of the DFW economy
• Business and financial services cluster to see continued growth in part due to several large corporate relocations/consolidations
• Expect DFW to outperform the statewide job growth of 0.5 to 1.5 percent
• DFW job gains to be close to its long-term average of 2.1 percent
Questions?
Drivers of DFW Job Gains

Index, Jan.'06=100, SA

- Educational & Health Services: 12%
- Professional & Business Services: 17%
- Trade, Transp. & Utilities: 21%
- Financial Activities: 8%
- Leisure & Hospitality: 10%
- Government: 12%
- Other Services: 4%
- Information: 2%
- Constr. & Mining: 6%
- Manufacturing: 8%
- Prof. & Bus. Svcs.: 17%
- Ed. & Health Svcs.: 12%
- Govt.: 12%

Dallas Job Growth Surpasses Austin in 2014

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>DFW</td>
<td>3.1%</td>
<td>4.0%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Houston</td>
<td>3.2%</td>
<td>4.1%</td>
<td>-0.5%</td>
</tr>
<tr>
<td>Austin</td>
<td>4.4%</td>
<td>3.9%</td>
<td>4.5%</td>
</tr>
<tr>
<td>San Antonio</td>
<td>2.9%</td>
<td>3.6%</td>
<td>1.9%</td>
</tr>
</tbody>
</table>
Employment growth has moderated, but is still growing at twice the state’s pace

- DFW jobs grew 2.1% vs. TX 1.1 in the first half of 2015
- Growth was concentrated in the service sectors

Unemployment is at a 14 year low
Industry Clusters

- A cluster is a geographically concentrated group of industries related by technology they use, the markets they serve, the goods and services they produce, and the labor skills they require.

- Clusters
  - increase productivity and operational efficiency
  - stimulate and enable innovation
  - facilitate new business formation
Importance of Industry Clusters

• Several studies focus on the role and importance of regional clusters:
Data and Methodology

- **Data**: Bureau of Labor Statistics QCEW annual employment and wage data
- **Clusters Methodology**:
  - 17 clusters defined by 3- to 6-digit NAICS, adopted from the report by Center for Regional Development at Purdue University, Indiana Business Research Center and Strategic Development Group, Inc. published in Jan. 2007
  - Combine the Energy and Mining clusters
  - Split the Manufacturing Super Cluster into its 3-digit level NAICS sub sectors
  - Add Retail, Construction, Government and Utilities 2-digit level NAICS sectors
  - Add Food Services to the Recreation Cluster
  - Some double counting at the 4-digit or 5-digit level NAICS across clusters.