Human Capital and Long-Term Growth in Houston

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“Workforce development should be thought of as more than just a short-term treatment — it also can work as a long-term vaccine that makes workers more resilient to changing labor market conditions.”

Jeffrey M. Lacker, President and CEO
Federal Reserve Bank of Richmond
Today’s Topics

- Consequences of a Skills Gap
- Houston’s Skills Gap
- JPMorgan Chase’s Houston Skills Gap Report
- Solutions Underway
- Actions for the Future
Today’s Topics

Consequences of a Skills Gap

- Houston’s Skills Gap
- JPMorgan Chase’s Houston Skills Gap Report

Solutions Underway

Actions for the Future
How Did We Get Here?

- Changing skills
- Demographics
- Policies and Priorities
- Culture
- Field of study choice
The Economic Impact of Unfilled Jobs

<table>
<thead>
<tr>
<th></th>
<th>Annual openings</th>
<th>Annual # of graduates</th>
<th>Gap (includes estimated retirements)</th>
<th>Average salary (unskilled worker)</th>
<th>Average salary for machinist</th>
<th>Average salary (with experience)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example: Machinists*</td>
<td>745</td>
<td>62</td>
<td>683</td>
<td>$20,000</td>
<td>$41,000</td>
<td>$60,000</td>
</tr>
</tbody>
</table>

*Machinists set up and operate a variety of machine tools to produce precision parts and instruments.

By training one unskilled worker…

- **Increase** regional income by at least $21,000 ($41,000 - $20,000)
- **Add** jobs (jobs multiplier adds 1.34 to 2 jobs in other industries)
- **Expand** of output of machinist-employing firms and other industries
Today’s Topics

Consequences of a Skills Gap

Houston’s Skills Gap

JPMorgan Chase’s Houston Skills Gap Report

Solutions Underway

Actions for the Future
Houston’s Greatest Workforce Challenges

**Figure 2: Houston’s Greatest Workforce Challenges**

<table>
<thead>
<tr>
<th>Challenge</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talent shortages resulting from the expansion of Houston’s energy sector</td>
<td>85%</td>
</tr>
<tr>
<td>Graduating a sufficient supply of skilled workers locally</td>
<td>81%</td>
</tr>
<tr>
<td>Improving the region’s K-12 system to produce work-ready or college-ready graduates</td>
<td>77%</td>
</tr>
<tr>
<td>Alignment of industry needs and training resources</td>
<td>77%</td>
</tr>
<tr>
<td>Effectiveness of career counseling in steering promising workers towards high-demand occupations (HDOs)</td>
<td>73%</td>
</tr>
<tr>
<td>Work readiness of applicants</td>
<td>65%</td>
</tr>
<tr>
<td>Negative perceptions of manufacturing/skilled trades careers</td>
<td>62%</td>
</tr>
<tr>
<td>Attracting skilled workers to the region</td>
<td>46%</td>
</tr>
<tr>
<td>Retaining skilled workers in the region</td>
<td>31%</td>
</tr>
</tbody>
</table>

Source: Survey of RWDTF members conducted by TIP Strategies in July 2013
Houston’s Workforce System Gaps

A. Awareness of middle skills opportunities
B. Lack of basic skills & employability issues
C. Poor coordination among resources
D. Lack of reliable data on supply and demand
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JPMorgan Chase Responds

**OUR COMMITMENT**

Helping people gain the skills they need to compete for jobs can transform lives and strengthen economies.

<table>
<thead>
<tr>
<th>Features</th>
<th>Results to date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Five year timeline</td>
<td>Contributed $50 million to nonprofits in more than 130 cities, counties, regions and countries across the globe</td>
</tr>
<tr>
<td>$250 million global initiative</td>
<td>Thousands of job seekers have completed training programs and now are working in good jobs, earning significantly better pay than they were making before.</td>
</tr>
</tbody>
</table>

www.jpmorganchase.com/corporate/Corporate-Responsibility/new-skills-at-work
Petrochemical growth spurs growth in commercial and industrial construction.

120 facilities and $80 billion in total investments over the next few years

(Source: TIP Strategies)
Houston’s Skills Gap Report - DEMAND

Petrochemical + Commercial and Industrial Construction

= nearly 19,000
projected new middle-skill job openings every year in these two sectors until 2017.

There are currently 1.4 million middle-skill positions in Houston, accounting for 41% of all jobs in the region.7

Percentage of jobs that require one-five years of experience

- 90% petrochemical
- 88% commercial and industrial construction
Houston’s Skills Gap Report - DEMAND

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance and Repair Workers</td>
<td>1,152</td>
<td>5,248</td>
<td>24%</td>
</tr>
<tr>
<td>General and Operations Managers</td>
<td>1,571</td>
<td>3,646</td>
<td>23%</td>
</tr>
<tr>
<td>Heavy and Tractor-Trailer Truck Drivers</td>
<td>2,877</td>
<td>7,073</td>
<td>25%</td>
</tr>
<tr>
<td>First-Line Supervisors of Mechanics, Installers, and Repairers</td>
<td>537</td>
<td>1,530</td>
<td>25%</td>
</tr>
</tbody>
</table>

See Tables 1 and 2 in Appendix B for full list of high-demand occupations in these sectors and data sources.
# Houston’s Skills Gap Report - DEMAND

<table>
<thead>
<tr>
<th>Petrochemical Middle-Skill Occupations</th>
<th>Median Hourly Wage</th>
<th>Commercial and Industrial Construction Middle-Skill Occupations</th>
<th>Median Hourly Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical Plant and Systems Operators</td>
<td>$33.08</td>
<td>Electricians</td>
<td>$20.80</td>
</tr>
<tr>
<td>First-Line Supervisors of Production &amp; Operating Workers</td>
<td>$30.61</td>
<td>Plumbers, Pipefitters, and Steamfitters</td>
<td>$22.53</td>
</tr>
<tr>
<td>Industry Machinery Mechanics</td>
<td>$23.14</td>
<td>First-Line Supervisors of Construction Trades and Extraction Workers</td>
<td>$24.31</td>
</tr>
<tr>
<td>General and Operations Managers</td>
<td>$46.78</td>
<td>Welders, Cutters, Solderers, and Brazers</td>
<td>$18.24</td>
</tr>
<tr>
<td>Business Operations Specialists, All Other</td>
<td>$35.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purchasing Agents, Except Wholesale, Retail, and Farm Products</td>
<td>$30.83</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First-Line Supervisors of Mechanics, Installers, and Repairers</td>
<td>$29.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Petroleum Pump System Operators, Refinery Operators and Gaugers</td>
<td>$32.07</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Houston’s Skills Gap Report - SUPPLY

**FIGURE 3. EDUCATIONAL ATTAINMENT IN HOUSTON MSA, 2013**

- Less Than 9th Grade: 323,884
- 9th Grade to 12th Grade: 531,589
- High School Diploma: 918,878
- Some College: 868,561
- Associate’s Degree: 230,710
- Bachelor’s Degree: 731,697
- Graduate Degree and Higher: 374,990

Source: EMSI
In 2013, over 855,000 Houstonians aged 25 and older did not have the minimum credentials for middle-skill jobs.

Communities of color are the fastest-growing segments of the population, but have some of the lowest educational attainment rates.

Percent of each population age 25 years and older without a high school credential in 2013:

- **Latino**: 47%
- **American Indian, Non-Hispanic**: 32%
- **Other Race, Non-Hispanic**: 19%
- **Asian, Non-Hispanic**: 15%
- **Black, Non-Hispanic**: 14%
- **White, Non-Hispanic**: 7%

(Source: EMSI)
Today’s Topics

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Solutions Underway

Actions for the Future
Houston’s Business Community Leads the Way

UPSKILL HOUSTON

GOALS
Raise awareness about middle skill opportunities
Increase access to relevant education and training
Improve coordination among stakeholders

https://www.houston.org/upskillhouston/

JPMorgan Chase & Co.
Community Colleges Offer Fast Track Training

Accelerate Lone Star

- Featured programs of study
  - Machining
  - Welding
  - HVAC Technician
  - Automotive Technician

- Results
  - 83% received certificates
  - 76% found jobs and/or continued education

- Accelerate is also offered at Brazosport, College of the Mainland, Galveston, Houston Community College, Lee College

- Other Fast Track approaches are available at community colleges across the region.

http://www.lonestar.edu/acceleratelonestar.htm
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A Workforce System that Promotes Long-Term Growth

- **Goal:** to build a demand-driven career pathways system that is responsive to the changing needs of the high-growth sectors that fuel Houston’s economy.

  - **Career pathways** describe the education and training programs that offer a well-articulated sequence of courses and work experiences that lead to stackable credentials.

  - **Stackable credentials** allow students to have multiple clear entry/exit points as they progress towards an Associate’s degree or the highest industry credential required.

- Apprenticeships, Work-Based Learning Opportunities and additional Sector Councils are needed.
Sources Referenced

• “Addressing Houston’s Middle Skills Jobs Challenge”, Greater Houston Partnership, April 2014
• “Investing in People as an Economic Growth Strategy”, Jeffrey Lacker, President of Federal Reserve of Richmond
• “Preparing Houston to Skill Up”, JPMorgan Chase and Co, 2014
• “The Skills Gap: A National Issue That Requires a Regional Focus”, EMSI

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