Beneath the U.S. job numbers

**Tech’s influence on the workforce continues to hollow out the labor market**

Like clockwork, the start of each month brings the latest update on U.S. job numbers from the U.S. Bureau of Labor Statistics (BLS).

Vital to assembling a momentary look at the job market’s latest trends, the report will support a pulse of urgent and useful news stories with its mixed and sometimes blurry data points on such topics as job growth and unemployment.

And yet, for all that, the jobs report remains in many ways a distraction from the most important longer-term trend lines and macro forces.

For example, don’t bet on the new numbers shedding much light on one of the most profound labor-market trends of all—one highlighted by our brand-new report on the “digitalization” of the U.S. economy.

This trend is the extraordinary “hollowing out” of the job market that finds the nation’s high-skill and low-skill occupational groups growing even as middle-skill job categories sag.

Associated in our view with the formidable ability of digital technology to both empower workers and polarize outcomes, the hollowing out trend isn’t always recognizable in the real-time read out of the job report, but over time it is adding up inexorably, as can be seen [below] in one of the disconcerting exhibits in our report.

What’s going on with this “U-shaped” picture of the nation’s job problems? In our view, following the insights of the MIT economist David Autor and others, the increasing adoption of computer technology has led in recent decades to rapid employment growth at the upper and lower ends of the skill distribution, combined with extremely sluggish growth in the middle of the continuum. For example, job creation has been relatively robust since 2010 for both highly digital computer-mathematical and business-finance occupational groups, as well as in low-digital occupational fields such as healthcare support and food preparation. By contrast, mid-digital occupational groups like office administration and sales have seen much slower job growth.

Why is this happening? This is what Autor and others call “routine-biased technical change” at work. As explained in our report, digital technologies tend to complement non-routine, complex creative work such as that done by highly skilled workers even as it substitutes for the rote, repetitive work of many traditional middle-skill, middle-digital occupations. As to the low end of the skills distribution, it appears that rising employment in some low-digital occupations reflects a strong shift of work into face-to-face personal service occupations supported by increased demand from well-compensated high digital consumers.

In short, while it isn’t always recognizable in the monthly ups and downs of the jobs report, the steady unfolding of the U-shaped labor market remains the skull beneath the skin—a stubborn reality amid the incidental noise of the changing economy. Keeping this curve and these bars in mind while the pundits and reporters process the newest flow of data on job growth or labor market participation would be well worth doing.

**FIGURE 9**

**Compound annual growth rate of employment by occupation group, 2010-2016**

Occupation groups arrayed by 2016 mean digital scores

- Low
- Medium
- High

Source: Brookings analysis of O*NET and OES data
Note: Farming, Fishing, and Forestry occupations are excluded due to small employment size.

Source: Brookings (12/06/17)
http://brook.gs/2BJ7L18
### Labor Force by Metropolitan Statistical Area (U.S. High-Tech Regions)

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</thead>
<tbody>
<tr>
<td>United States</td>
<td>159,456,000</td>
<td>160,529,000</td>
<td>+ 0.1%</td>
<td>7,409,000</td>
<td>6,610,000</td>
<td>− 10.8%</td>
<td>4.6%</td>
<td>4.1%</td>
<td>− 0.5</td>
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<tr>
<td>California</td>
<td>19,157,600</td>
<td>19,344,400</td>
<td>+ 1.0%</td>
<td>963,900</td>
<td>775,500</td>
<td>− 19.5%</td>
<td>5.0%</td>
<td>4.0%</td>
<td>− 1.0</td>
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<tr>
<td>San Jose</td>
<td>1,061,900</td>
<td>1,072,900</td>
<td>+ 1.0%</td>
<td>38,000</td>
<td>28,700</td>
<td>− 24.5%</td>
<td>3.6%</td>
<td>2.7%</td>
<td>− 0.9</td>
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<tr>
<td>Austin, TX</td>
<td>1,124,627</td>
<td>1,146,697</td>
<td>+ 2.0%</td>
<td>35,932</td>
<td>31,314</td>
<td>− 12.9%</td>
<td>3.2%</td>
<td>2.7%</td>
<td>− 0.5</td>
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<tr>
<td>San Francisco</td>
<td>1,014,400</td>
<td>1,028,100</td>
<td>+ 1.4%</td>
<td>29,900</td>
<td>22,800</td>
<td>− 23.7%</td>
<td>3.0%</td>
<td>2.2%</td>
<td>− 0.8</td>
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<td>Boston, MA</td>
<td>2,654,514</td>
<td>2,683,488</td>
<td>+ 1.1%</td>
<td>68,243</td>
<td>80,569</td>
<td>+ 18.1%</td>
<td>2.6%</td>
<td>3.0%</td>
<td>+ 0.4</td>
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<tr>
<td>New York City, NY</td>
<td>9,496,300</td>
<td>9,644,800</td>
<td>+ 1.6%</td>
<td>428,300</td>
<td>431,600</td>
<td>+ 0.8%</td>
<td>4.5%</td>
<td>4.5%</td>
<td>0.0</td>
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<tr>
<td>Seattle, WA</td>
<td>1,636,900</td>
<td>1,658,800</td>
<td>+ 1.3%</td>
<td>61,700</td>
<td>62,800</td>
<td>+ 1.8%</td>
<td>3.8%</td>
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<tr>
<td>NOVA Workforce Area</td>
<td>777,800</td>
<td>787,900</td>
<td>+ 1.3%</td>
<td>22,100</td>
<td>16,600</td>
<td>− 2.1%</td>
<td>2.8%</td>
<td>2.1%</td>
<td>− 0.7</td>
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### WARN Summary

- **Events YTD**: 24
- **Individuals Affected YTD**: 1,844
- **Previous YTD**: No data available for San Mateo County, FY2014/15

**NOTE**: Layoff data are preliminary and should be considered an estimate of monthly regional activity

Source: NOVA's internal Rapid Response database

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### Note

- **NOTE**: Totals may not add correctly due to rounding.
- Source: California Employment Development Department, LMID.

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### Regional Layoff Activity

#### November 2017 Events

<table>
<thead>
<tr>
<th>Company</th>
<th>Location</th>
<th># Affected</th>
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<tbody>
<tr>
<td>CPI</td>
<td>Palo Alto</td>
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<tr>
<td>Infinera</td>
<td>Sunnyvale</td>
<td>74</td>
</tr>
<tr>
<td>Marvell Semiconductor</td>
<td>Santa Clara</td>
<td>5</td>
</tr>
</tbody>
</table>

**Total**: 86

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### Note

- **NOTE**: Layoff data are preliminary and should be considered an estimate of monthly regional activity.
- Source: NOVA's internal Rapid Response database.