The Rebalancing of the California Economy: How Internet/tech jobs are spreading across the state

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Something new and very encouraging is starting to happen: The economic benefits of Internet/tech growth are spreading outside the Bay Area to other regions of California.

Introduction

Over the last year, California has added jobs faster than the country as a whole, in large part because of the booming Internet/tech sector.

Indeed, the latest official figures still show the Bay Area driving California's economic growth, while the rest of the state lags behind. According to data from California's Economic Development Department, the number of jobs rose by 2.2% in the Bay Area in the year ended March 2013, compared to 1.5% for Southern California and only 1.2% for the Central Valley, the region that stretches from Redding in the north to Bakersfield in the south.[1]

However, something new and very encouraging is starting to happen: The economic benefits of Internet/tech growth are spreading outside the Bay Area to other regions of California. These gains are so recent that they don't show up yet in the official government data.

So how do we know Internet/tech growth is spilling over to other areas? To put it simply, we look at the want ads. Internet/tech-related want ads have surged across California. For example, want ads for computer and mathematical occupations in the Central Valley are up by almost 12% over the past year, compared to a smaller 3% gain in the Bay Area. Want ads for media and communications workers—many of them related to social media, websites, and other online activities— are up by 34% in Southern California and 42% in the San Diego region. And want ads for web developers and related occupations are rising in the Central Valley and Central Coast, albeit off a very small base.

What's more, each of these jobs tends to have a significant multiplier effect on the local economy, creating jobs for everybody from plumbers and janitors to accountants.[2]

This suggests that the California economy may be approaching a critical inflection point. If the Internet/tech growth continues at its current pace, it may be enough to lift the whole state out of its economic doldrums, including hard-hit areas such as the Central Valley. It also suggests that state government policy should be directed toward encouraging Internet/tech growth, rather than suppressing it.

Methodology

First, let's look at the detailed analysis. The Progressive Policy Institute analyzed the detailed database of online help wanted ads created by the Conference Board, using a methodology developed by South Mountain Economics LLC.[3] Help-wanted ads provided a very useful way of tracking labor markets, because companies have to specify both location and what skills they need. Moreover, the help-wanted database is updated daily. As a result, we can see changes in demand in specific areas well before they show up in the official numbers.

We examined the reported want ads for the month ending March 13, and compared that to the same month a year earlier. We used data for California's metropolitan statistical areas (MSA), assigned to regions as designed by the California Economic Strategy Panel. The assignments can be found in the appendix to the paper.

PPI used help-wanted ads to track California's local labor markets, picking up changes in demand well before the official data.

However, there's also a caveat: As described in the methodology appendix, help-wanted ads contain a lot of information about the changing state of the labor market, but they are 'noisy'. An ad may be duplicated across multiple job boards, or an employer may hire more than one worker from the same want ad. In addition, the same want ad may be aimed at multiple geographies, or an employer may advertise in a different geography in hopes of finding an employee, either to telecommute or to move.

As a result, we must exercise some care in how we interpret help-wanted ads. For the purpose of this report, we will focus only on the percentage change over the past year, which reduces much of the distortion and noise in the data. In future reports, we estimate absolute levels of Internet/tech jobs in various California regions, which will require additional validation of the data.

Computer and Mathematical Occupations

We will start with the broad category of computer and mathematical occupations, as defined by the Bureau of Labor Statistics. This category includes a wide range of Internet/tech workers, ranging from mobile app developers to data analysts to computer support specialists to computer software engineers. Notably, this category does not include computer and electronic hardware engineers.

Statewide, help-wanted ads for computer and mathematical occupations are up by 4% over the past year, after doubling since 2009. The increase is not spread evenly, however. Strikingly, the data shows the Central Valley with the biggest gain in ads for computer and mathematical occupations over this period.

This is both surprising and encouraging. If any area could benefit from a spurt in Internet/tech hiring, it's the long-suffering Central Valley. Employment in the Central Valley is still 6% below the pre-recession peak, and the unemployment rate in areas such as Merced, Fresno, and Visalia remains in double digits.

An examination of the want ads suggests that Internet/tech hiring in the Central Valley is benefiting from a diverse mix of employers. For example, Smart Hospitality Corporation in Visalia, a company that provides hotels with digital entertainment systems, was advertising for a web designer/developer. Keeper Security, a maker of password mobile apps with engineering offices in Folsom, was advertising for a data sciences analyst and a software engineer. And University of the Pacific in Stockton is looking for a web applications developer. (Although the Central Coast shows a decline in want ads for broad computer and mathematical occupations, we will see in the next two sections that the region shows a big gain in want ads for media and communications workers and for web developers).

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Where California Labor Demand is Rising
Focus: Computer and Mathematical Occupations*

	Rise in Help Wanted Ads over Previous Year**
Bay Area	2.9%
Central Coast	-10.7%
Central Valley	**11.8%**
Southern Border	3.1%
Southern California	-1.2%

* Includes software developers, web developers, data analysts, support specialists, Does not include hardware-related occupation such as computer hardware engineers.
** Month ending March 13, 2013
PRELIMINARY ESTIMATES
Source: The Conference Board, South Mountain Economics, PPI

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Media and Communications Workers

The Internet/tech growth is generating plenty of content and social media jobs as well. We combined the dual categories of media and communications workers—which would includes content creators and social media editors—and media and communications equipment workers, which could include broadcast and sound technicians for online shows.

Statewide, the demand for these jobs is on the rise, with want ads up 27% over the past year. Big gainers include public relations jobs, jobs requiring sound techni-

cian skills, and jobs for reporters. The last sounds odd in a time when print media are struggling, but the 'reporter' category includes internet-related jobs such as bloggers and other online content creators, which are clearly on the upswing.

While the rising demand for media and communications workers is being driven by digital/Internet growth, the focus for demand growth is not the Bay Area. Instead, the growth in want ads is coming in the Los Angeles and San Diego regions—Southern California and the Southern Border regions in the table below. Want ads for media and communications workers are up 34% over the past year in the Los Angeles area, and up almost 42% in the San Diego area.

For example, one Los Angeles parking company was advertising for a social media specialist to use "social networks, pop culture, and social media trends to increase monthly parking." Technicolor is looking for a "digital media technician" for its Glendale office. CBS Interactive had a job opening in Los Angeles for a "Video Operations Coordinator."

<div style="margin-left: 2em; color: #4a7a9b;">
On a national level, California has by far the most ads for web developers, more than 60% higher than second place New York.
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Where California Labor Demand is Rising
Focus: Media and Communications Workers*

	Rise in Help Wanted Ads over Previous Year*
Bay Area	13.7%
Central Coast	22.4%
Central Valley	15.4%
Southern Border	**41.8%**
Southern California	**34.2%**

Includes equipment specialists as well
**Month ending March 13, 2013*
PRELIMINARY ESTIMATES
Source: The Conference Board, South Mountain Economics, PPI

Web Developers

Finally, let's take a look at the demand for web developers in California, a subset of computer and mathematical occupations. This is a very strong category in the state: On a national level, California has by far the most ads for web developers, more than 60% higher than second place New York. And within California, the main locations for web developers are Los Angeles and San Francisco, which is not surprising.

The surprising part is that the want ad data shows a sharp growth in demand for Web developers in the Central Valley and the Central Coast. Want ads for web developers rose more than 40% in the Central Valley and more than 50% in the Central Coast, including areas such as Santa Barbara.[4] For example, AppFolio, a Goleta (CA)-based company that makes web-based property management software and other applications for small and mid-sized businesses, is advertising for

an "Interaction Designer" to help create the user interface for the company's web applications. BCT Consulting, based in Fresno, is looking for a full-time web developer. And RightScale, a cloud management company based in Santa Barbara, is advertising for several positions related to web development, including a senior web designer and user experience designer.

Where California Labor Demand is Rising **Focus: Web Developers***	
	Rise in Help Wanted Ads over Previous Year**
Bay Area	1.6%
Central Coast	**50.4%**
Central Valley	**40.6%**
Southern Border	14.8%
Southern California	-7.7%

*Not including content specialists
**Month ending March 13, 2013
PRELIMINARY ESTIMATES
Source: The Conference Board, South Mountain Economics, PPI

Further Work

In this report we have calculated growth rates of Internet/tech want ads in various regions. It is potentially possible to translate that number into an actual number of jobs, but that requires doing an additional level of validation to improve the quality of the data. Once the validation is done, we can also estimate the average salary of Internet/tech jobs in the state, as well as the economic impact (for a similar analysis by state, see "The Geography of the App Economy").[5]

Policy Implications

The Internet/tech growth is spreading across different regions of California, fostering the state's economic recovery. How can government policy encourage this trend, or at least not stand in its way?

There are two policy implications that are especially useful. First, we saw from the late 1990s that once the tech sector gets hot, it can exhaust the normal labor sources. Employers start reaching out to unlikely areas and training workers in new skills. This is the time when the unemployment rate really starts to fall.

The second important policy implication is the concept of countercyclical regulatory policy, as described in the 2010 PPI paper "Reviving Jobs and Innovation: The Role of countercyclical Regulatory Policy."[6] Basically, countercyclical regulatory policy argues that it's self-defeating for governments to impose extra regulations on growing industries during the recovery period from a recession. Like countercyclical monetary and countercyclical fiscal policy, regulatory policy

should have as one of its goals stimulating the economy and bringing down un-employment.

California's Internet/tech growth can help the whole state—as long as excess regulation doesn't throttle the growth before it has its full positive effect on jobs.

Appendix

Methodology
We analyze Internet/tech jobs across California, using the Conference Board's HWOL database of help-wanted ads, using the methodology developed by South Mountain Economics LLC in "The Geography of the App Economy" (October 2012) and "Where the Jobs Are: The App Economy" (February 2012). The database labels each want ad with an occupation and a referenced location by metropolitan statistical area (MSA). We use the window of ads available from February 14, 2013 to March 13, 2013. We aggregate all available MSAs into broad economic regions, using the schema laid out by the California Economic Strategy Panel.

The key point, as noted above, is that help-wanted ads are a very useful source of information about labor demand, but they are 'noisy,' in the sense that there is not a one-to-one correspondence between want ads and job openings. An ad may be duplicated across multiple job boards. Alternatively, an employer may hire more than one worker from the same want ad. In addition, the same want ad may be aimed at multiple geographies, or an employer may advertise in a different geography in hopes of finding an employee, either to telecommute or to move.

In order to make want ads useful as a source of labor demand information, it's necessary to adopt an approach that adjusts for the data's noisiness. In the two papers mentioned above, South Mountain Economics benchmarked the want-ad data to official government statistics. In this paper we take a different approach by only focusing on rates of growth over time, rather than absolute levels. The assumption is that the level and pattern noisiness of the data stays constant over time, measured as a share of overall want ads. Under that assumption, the percentage change in want ads is an accurate measure of the increase in demand.

It would be possible in the future to apply the validation procedure used in "The Geography of the App Economy." That would enable us to estimate actual number of Internet/tech jobs for each California region, as well as average salary and economic impact.

Regions
We aggregated all California MSAs into five regions—Bay Area, Central Coast, Central Valley, Southern Border, and Southern California--using the scheme laid out by the California Economic Strategy Panel. [7] We combined the Panel's Northern Sacramento, Greater Sacramento, and San Joaquin Valley regions into one region that we called the Central Valley. Two other regions contained no MSAs and so were not included in our analysis.

Bay Area
      San Francisco-Oakland-Fremont MSA
      San Jose-Sunnyvale-Santa Clara MSA
      Napa MSA

Santa Cruz-Watsonville MSA
Santa Rosa-Petaluma MSA
Vallejo-Fairfield MSA

Central Coast
Salinas MSA
San Luis Obispo-Paso Robles MSA
Santa Barbara-Santa Maria-Goleta MSA

Central Valley
Bakersfield-Delano MSA
Chico MSA
Fresno MSA
Hanford-Corcoran MSA
Madera-Chowchilla MSA
Merced MSA
Modesto MSA
Redding MSA
Sacramento--Arden-Arcade--Roseville MSA
Stockton MSA
Visalia-Porterville MSA
Yuba City MSA

Southern California
Los Angeles-Long Beach-Santa Ana MSA
Oxnard-Thousand Oaks-Ventura MSA
Riverside-San Bernardino-Ontario MSA

Southern Border
El Centro MSA
San Diego-Carlsbad-San Marcos MSA

Endnotes

[1] Data for regions based on relevant metropolitan statistical areas (MSAs) as described in the appendix.

[2] Credible estimates of the multiplier effect vary widely. For example, a December 2012 paper from the Bay Area Council Economic Institute, "Technology Works: High-Tech Employment and Wages in the United States," estimates that "the creation of one job in the high-tech sector of a region is associated with the creation of 4.3 additional jobs in the local goods and services economy of the same region in the long run." By contrast, the February 2012 paper from South Mountain Economics, "Where the Jobs are: The App Economy," used a much more conservative multiplier.

[3] We thank The Conference Board for use of its data. The Conference Board bears no responsibility for the conclusions of this paper. The methodology is described in "Where the Jobs Are: The App Economy" and developed further in "The Geography of the App Economy." These papers from South Mountain Economics can be found at http://southmountaineconomics.com/papers/.

[4] The data for "web developers" is relatively noisy because it's a subcategory of "computer and mathematical occupations." As a result, the figures presented here are less likely to be precise.

[5] In "Technology Works: High-Tech Employment and Wages in the United States," Ian Hathaway estimated that "workers in high-tech industries earned 17.1 percent more than comparable workers in other industries between 1995 and 2011" after adjusting for age, gender, education and other variables. http://www.bayareaeconomy.org/media/files/pdf/TechReport.pdf.

[6] Michael Mandel, "Reviving Jobs and Innovation: The Role of Countercyclical Regulatory Policy", Progressive Policy Institute, November 2010, http://www.progressivefix.com/wp-content/uploads/2010/11/11.2010-Mandel_Reviving-Jobs-and-Innovation.pdf.

[7] California Economic Strategy Panel Regions, October 2006, http://www.cvc.edu/wp-content/uploads/2009/01/california_economic_strategy_panel_regions.pdf.

About the Author

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