

# OC LEADER BOARD

Opinion, Analysis, Insight

## California Dominance in Innovation Jobs Still Trumps Texas, But OC Lags



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We recently unveiled the **Chapman-UCI Innovation Indicator** that measures the strength of 22 innovation hubs across the nation in generating economic activity in this all-important sector of the economy.

That strength is reflected by the fact that the average wage paid in innovation industries in California is \$208,000 as compared to \$76,000 for all jobs. Innovation jobs also have a higher multiplier effect generating five additional jobs for each innovation job. In comparison, each manufacturing job generates only 1.6 additional workers.

"Innovation jobs" span many industries, according to a definition from the **Brookings Institute**. More than just traditional high-tech jobs in software and semiconductors, innovation industries also include high-value-added jobs in such categories as chemical manufacturing, aerospace, and science and technology services.

In partnership with the **CEO Leadership Alliance of Orange County**, our research team has gathered an extensive database that measures a weighted average of the proportion of establishments, jobs, and wages in innovation industries versus all economic activity on a quarterly basis from 2005 through the first quarter of 2020, which is the most current reporting period.

Table 1 compares the rank of the 22 largest innovation hubs from the first quarters of 2005 to 2020. For example, the San Jose hub has a weighted average of 0.101 (10.1%) innovative industries (establishments, jobs, and wages) as a proportion of all industries—almost double the 5.6% in the Seattle hub. Note, though, that by 2020, the San Jose hub stayed virtually the same at 0.103 in innovative industries while the Seattle hub narrowed the gap rising to 0.083.

What is particularly surprising in these findings is that all three Texas hubs (Austin, Dallas, and Houston) dropped in the innovation ranking. In light of all the media attention regarding the flight of businesses and jobs from California to Texas, one would have expected to see Texas' hubs rise in the ranks. Instead, we see sharp declines.

There are many moving parts to our Chapman-UCI Indicator. So to analyze Texas' apparent weakness in generating growth in innovative industries, our focus in this report will be on jobs rather than establishments and wages. We also will break up the 15-year period into two periods: 2005 to 2015 and 2015 to 2020.

As shown in Table 2, innovation jobs increased by 84,000 jobs in California hubs from 2005 to 2015 as compared to an increase of only 8,000 in Texas hubs. However, the total jobs in Texas increased by 1,304,000, almost double California's increase of 684,000 jobs. As a result, the ratio or percentage of innovation jobs increased in California from 5.8% to 6.3% while decreasing in Texas from 4.1% to 3.3%. The slow rate of innovation job growth in Texas hubs pulled down the numerator in the ratio of innovative jobs to total jobs, while the rapid job growth in the non-innovative job sectors in Texas hubs increased the denominator. Both of these changes explain the relatively sharp drop in the percentage of innovative jobs in Texas.

While it's clear California outperformed Texas in creating new inno-

**Table 2**

	2005:1	2015:1	Change
<b>Innovation Jobs</b>			
California Hubs	476,000	560,000	+84,000
Texas Hubs	193,000	201,000	+8,000
<b>Total Jobs</b>			
California Hubs	8,228,000	8,912,000	+684,000
Texas Hubs	4,735,000	6,039,000	+1,304,000
<b>% of Innovation Jobs</b>			
California Hubs	5.8%	6.3%	+0.5%
Texas Hubs	4.1%	3.3%	-0.8%

**Table 3**

	2015:1	2020:1	Change
<b>Innovation Jobs</b>			
California Hubs	560,000	691,000	+131,000
Texas Hubs	201,000	214,000	+13,000
<b>Total Jobs</b>			
California Hubs	8,912,000	9,881,000	+969,000
Texas Hubs	6,039,000	6,747,000	+708,000
<b>% of Innovation Jobs</b>			
California Hubs	6.3%	7.0%	+0.7%
Texas Hubs	3.3%	3.2%	-0.1%

novation jobs during the 2005-15 period, we thought this trend would be reversed during the most recent five-year period from 2015 to 2020, especially in light of recent reports pointing to sharp increases over that period in the net population outflow from California to Texas.

As shown in Table 3, that was not the case. In fact, not only did California's pace of innovation job growth of 131,000 jobs leave Texas' 13,000 job growth in the dust, total job creation in California was greater in nominal terms and almost equal to Texas in percentage terms (10.9% in California versus 11.7% in Texas). By 2020, the share of innovation jobs in California of 7.0% was more than double Texas' 3.2%.

These empirical findings fly in the face of conventional wisdom and media attention that point to the rise of Texas and the fall of California.

The Chapman-UCI Indicator suggests quite the contrary: California's dominance in innovation jobs versus Texas continues to reign supreme, not only in nominal growth but relative growth as well.

One caveat: These positive trends for California are not reflected by Orange County. While California hubs increased the number of jobs by 45 percent from 476,000 in 2005:1 to 691,000 by 2020:1, the number of innovative jobs in Orange County was roughly the same in 2005:1 (68,545) as it was in 2020:1 (68,884).

This, in part, explains why Orange County's No. 4 rank out of 22 hubs in 2005 dropped to No. 7 in 2020 in the Chapman-UCI Innovation Indicator Rank.

Meantime, our neighbor to the South, San Diego, moved from No. 7 to No. 4 as its innovation jobs grew almost 50% from 65,346 in 2005 to 95,943 in 2020.

The disappointing growth trend in Orange County is grist for much additional research and analysis. We'll keep you posted.

*Editor's Note: This Leader Board was written by Jim Doti, President Emeritus and Professor of Economics at Chapman University; Ken Murphy, Assistant Professor at Merage School of Business, University California, Irvine; Raymond Sfeir, Professor of Economics at Chapman University, and Marshall Toplansky, Clinical Assistant Professor at Chapman University.*

Table 1

RANK	Geography	2005:1	RANK	Geography	2020:1
1	San Jose-Sunnyvale-SC-MSA	0.101	1	San Jose-Sunnyvale-SC-MSA	0.103
2	Sea-Tac-Bell-MSA	0.056	2	Sea-Tac-Bell-MSA	0.083
3	Aus-RR-MSA	0.045	3	SF-Oak-Hay-MSA	0.068
4	Orange-County	0.041	4	SD-Carlsb-MSA	0.057
5	SD-Carlsb-MSA	0.040	5	Bos-Cam-Newt-MSA	0.052
6	Port-Vanc-Hills-MSA	0.040	6	Port-Vanc-Hills-MSA	0.045
7	Bos-Cam-Newt-MSA	0.038	7	Orange-County	0.044
8	Dal-FW-Ari-MSA	0.032	8	Aus-RR-MSA	0.040
9	SF-Oak-Hay-MSA	0.032	9	SaltLakeCity-MSA	0.037
10	Wash-Arl-Alex-MSA	0.027	10	Wash-Arl-Alex-MSA	0.032
11	Minn-SIP-Bloom-MSA	0.024	11	Den-Aur-Lakew-MSA	0.030
12	Phoe-Mesa-Scotts-MSA	0.023	12	Phoe-Mesa-Scotts-MSA	0.028
13	SaltLakeCity-MSA	0.022	13	Dal-FW-Ari-MSA	0.027
14	Phil-Cam-Wilm-MSA	0.021	14	Minn-SIP-Bloom-MSA	0.027
15	Los-Angeles-County	0.021	15	Phil-Cam-Wilm-MSA	0.026
16	Den-Aur-Lakew-MSA	0.020	16	Los-Angeles-County	0.022
17	Hou-Wood-SugarL-MSA	0.018	17	NY-New-JC-MSA	0.021
18	Chi-Nape-Elg-MSA	0.018	18	Atl-SS-Rosw-MSA	0.020
19	NY-New-JC-MSA	0.017	19	Chi-Nape-Elg-MSA	0.020
20	Char-Cncrd-Gast-MSA	0.016	20	Hou-Wood-SugarL-MSA	0.017
21	Atl-SS-Rosw-MSA	0.013	21	Char-Cncrd-Gast-MSA	0.016
22	Mia-FL-WPB-MSA	0.011	22	Mia-FL-WPB-MSA	0.015

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