Regional Income Studies Working Paper Series

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Working Paper #1

The Problem of Regional Wage Divergence

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The Problem of Regional Wage Divergence, 1980-2015

Introduction

In 1980, the average wage in New York was about 15% higher than the average wage in St. Louis. In 2014, New York's average wage had climbed to 38% higher than that in St. Louis. A similar story can be told about San Francisco, which in 1980 had an average wage that was about 14.5% higher than St. Louis's. By 2014, the wage differential had gone up to 45%.

This working paper marks the beginning of a collaborative effort by researchers from the East-West Gateway Council of Governments and the Bi-State Development Research Institute to understand the reasons for wage divergence among regions, and to consider policy options for addressing regional wage disparities.

Economic theory predicts that wages in different regions should converge over time. The reason is straightforward. If there is a high wage region and a low wage region, we might expect workers to move from the low wage to the high wage region. This would increase the supply of labor in the rich region, creating a downward pressure on wages. It would also decrease the supply of labor in the poor region, increasing wages. The opposite dynamic applies to the movement of firms. All things being equal, we would expect that firms, over time, would move from the high wage region to the low wage region, decreasing demand for labor, and hence wages, in the rich region, while increasing labor demand and wages in the poor region.

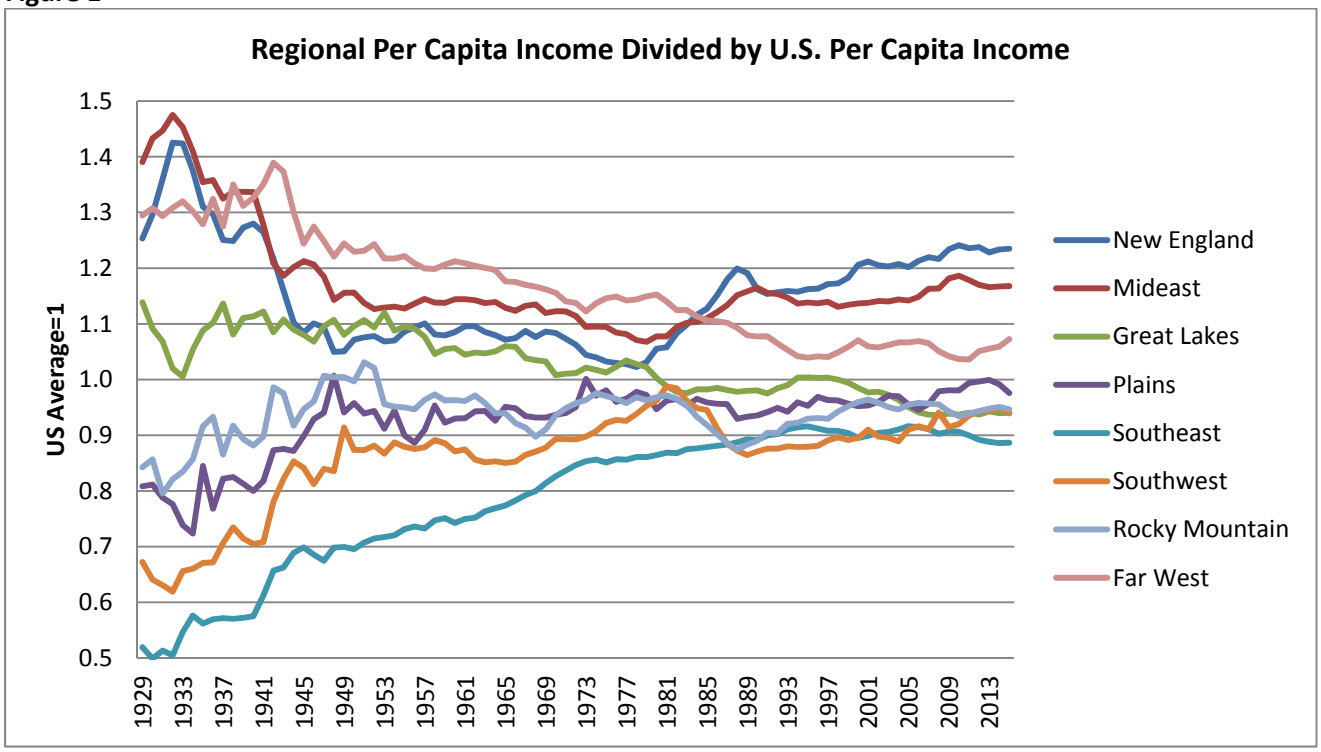
Indeed, over much of the last century, wage convergence occurred among regions in the United States. Figure 1 shows wages, as a percent of the national average for eight broad regions as defined by the U.S. Bureau of Economic Analysis (BEA). From 1930 until 1980, wages in wealthier regions tended to grow less quickly than the U.S. as a whole, resulting in a downward movement on the graph. Dark red shows the Mideast region, which includes New York. In the 1930s, the average wage for the Mideast region was nearly 50% higher than the national average. The Pacific Coast, shown in light red, had wages nearly 40% higher than the national average at the end of World War II. By 1980, wages in this region were less than 15% higher than the national average, while Mideast wages were less than 10% higher. For New England, shown in dark blue, there is a similar trend.

In the same time period, wages in the poorest regions tended to rise relative to the national average. The Southeast was the poorest region in 1930, with an average wage just half that of the U.S. The Southwest in the early 1930s had wages nearly 40% lower than the national average. The Southwest caught up to the national average by 1980, and the Southeast had closed most of the gap.

Around 1980, though something happened. The Mideast and Pacific Coast started to rise again, relative to the rest of the country. New England halted its drop in the early 1990s, after which its relative wage rose slightly. Meanwhile, the Southeast and the Southwest stabilized or fell relative to the rest of the country. The Rocky Mountains, Plains, and Great Lakes regions also stabilized at just under the national average following 1980.

This white paper shows how income in the St. Louis region has fared relative to other regions in recent decades, and documents changes in income distributions for St. Louis and other metropolitan areas since 1980.

Figure 1



Source: BEA Table SA1 (State)

The St. Louis Economy, 1970-2015

Figure 2 shows how the St. Louis economy performed relative to peer regions over approximately the last 45 years. Among the 50 most populous metropolitan areas, St. Louis ranked 23rd on per capita income in 1969. The ranking was essentially unchanged by 2013, when the region ranked 22nd. The region ranked 31st on growth in per capita income over this time period. This was close to the national average, and slightly lower than most peer regions. With respect to employment, St. Louis has consistently been a slow growth region. From 1969 to 2013, St. Louis ranked in the bottom 10 regions for growth in employment.

Some of the regions that experienced the most rapid growth in the number of jobs were also among the lowest in terms of income growth. Regions with high job growth and low income growth included Las Vegas, Orlando, Riverside, and Phoenix.

The St. Louis region's rank on per capita income remained stable across the decades. However, rankings do not give an indication of the magnitude of the difference between St. Louis and regions with the highest income.

Figure 3 shows the average wage per job for five metropolitan areas. For each region, the value on the chart reflects that region's average wage divided by the St. Louis region's average wage. The regions were selected to include four of the highest wage regions in 2013, along with Kansas City for a Midwestern point of comparison. In 1970, wages in New York, San Francisco and San Jose were all about 15% higher than in St. Louis, on average. Boston's average wage was within 1% of the St. Louis average wage. These ratios did not change significantly between 1970 and 1980.

Between 1980 and 2000, though, dramatic wage divergence occurred. San Jose, with Silicon Valley, saw its average wage become nearly twice as high as the St. Louis average. In San Francisco and New York, wages increased to a level

more than 40% higher than in St. Louis. Boston, which was close to St. Louis in per capita income until 1980, increased its average wage to more than 30% higher than the St. Louis average. After 2000, wage levels relative to St. Louis stabilized. In New York and San Jose, relative wages dropped slightly, although they remained well above the ratios observed in 1970 and 1980. Kansas City stayed about the same as St. Louis throughout the decades.

Figure 2: Economic Growth, 1969-2013

Per Capita Income
1969

1	**San Francisco**	**5,321**
2	Washington, D.C.	5,242
3	New York	4,950
4	San Jose	4,875
5	Los Angeles	4,823
6	Hartford	4,735
7	San Diego	4,733
8	Las Vegas	4,725
9	Chicago	4,706
10	Seattle	4,645
11	Detroit	4,487
12	Cleveland	4,486
13	Boston	4,473
14	Minneapolis	4,417
15	Sacramento	4,400
16	Philadelphia	4,336
17	Milwaukee	4,313
18	Miami	4,312
19	Denver	4,279
20	Baltimore	4,187
21	Portland	4,153
22	Dallas	4,149
23	**St. Louis**	**4,098**
24	Kansas City	4,068
25	Indianapolis	4,067
26	Virginia Beach	4,010
27	Buffalo	3,990
United States		**3,930**
28	Riverside	3,922
29	Providence	3,889
30	Cincinnati	3,886
31	Houston	3,865
32	Columbus	3,833
33	Phoenix	3,831
34	Oklahoma City	3,826
35	Pittsburgh	3,821
36	Atlanta	3,817
37	Richmond	3,810
38	Louisville	3,729
39	Jacksonville	3,717
40	Orlando	3,661
41	Tampa	3,544
42	San Antonio	3,510
43	Salt Lake City	3,508
44	New Orleans	3,491
45	Raleigh	3,461
46	Nashville	3,441
47	Charlotte	3,398
48	Austin	3,342
49	Memphis	3,227
50	**Birmingham**	**3,193**

Source: Bureau of Economic Analysis

Per Capita Income
2013

1	**San Jose**	**69,205**
2	San Francisco	69,127
3	Boston	61,754
4	Washington, D.C.	61,507
5	New York	59,246
6	Hartford	55,355
7	Seattle	55,190
8	Baltimore	54,457
9	Philadelphia	52,503
10	Denver	51,946
11	Houston	51,930
12	San Diego	51,384
13	Minneapolis	51,183
14	Chicago	49,071
15	Pittsburgh	49,049
16	Los Angeles	48,425
17	Milwaukee	47,688
18	Dallas	46,989
19	Sacramento	46,499
20	Providence	46,345
21	Richmond	46,118
22	**St. Louis**	**45,992**
23	Nashville	45,759
24	Cleveland	45,747
25	Kansas City	45,558
26	Miami	45,377
United States		**44,765**
27	Austin	44,760
28	Virginia Beach	44,756
29	New Orleans	44,746
30	Buffalo	44,301
31	Oklahoma City	44,280
32	Raleigh	43,947
33	Cincinnati	43,923
34	Columbus	43,867
35	Portland	43,728
36	Jacksonville	43,149
37	Detroit	42,887
38	Birmingham	42,570
39	Indianapolis	42,542
40	Charlotte	41,645
41	Salt Lake City	41,547
42	Louisville	41,477
43	Atlanta	41,307
44	Memphis	40,987
45	Tampa	40,425
46	San Antonio	39,951
47	Phoenix	38,745
48	Las Vegas	37,457
49	Orlando	36,992
50	**Riverside**	**33,025**

Source: Bureau of Economic Analysis

Change in Per Capita Income
Percent Change, 1969-2013

1	**San Jose**	**1,320**
2	Boston	1,281
3	Houston	1,244
4	Austin	1,239
5	Birmingham	1,233
6	Nashville	1,230
7	Baltimore	1,201
8	San Francisco	1,199
9	Pittsburgh	1,184
10	New Orleans	1,182
11	Memphis	1,170
12	Raleigh	1,170
13	Charlotte	1,126
14	Denver	1,114
15	Philadelphia	1,111
16	Richmond	1,110
17	New York	1,097
18	Providence	1,092
19	Seattle	1,088
20	Salt Lake City	1,084
21	Washington, D.C.	1,073
22	Hartford	1,069
23	Jacksonville	1,061
24	Minneapolis	1,059
25	Oklahoma City	1,057
26	Columbus	1,044
27	Tampa	1,041
United States		**1,039**
28	San Antonio	1,038
29	Dallas	1,033
30	Cincinnati	1,030
31	**St. Louis**	**1,022**
32	Kansas City	1,020
33	Virginia Beach	1,016
34	Louisville	1,012
35	Buffalo	1,010
36	Milwaukee	1,006
37	San Diego	986
38	Atlanta	982
39	Sacramento	957
40	Portland	953
41	Miami	952
42	Indianapolis	946
43	Chicago	943
44	Cleveland	920
45	Phoenix	911
46	Orlando	910
47	Los Angeles	904
48	Detroit	856
49	Riverside	742
50	**Las Vegas**	**693**

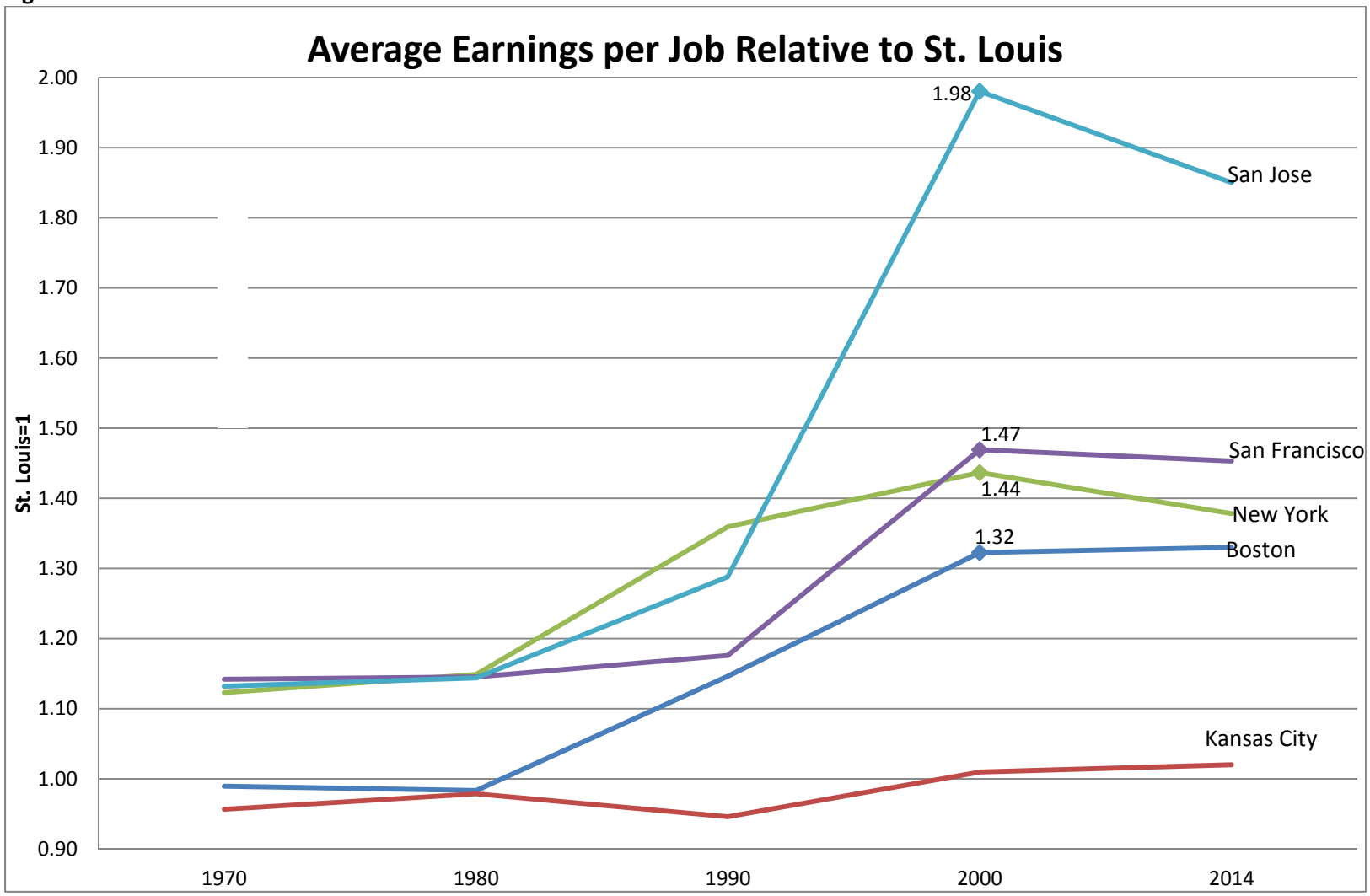
Source: Bureau of Economic Analysis

Change in Employment
Percent change, 1969-2013

1	**Las Vegas**	**663.1**
2	Austin	497.5
3	Orlando	479.3
4	Phoenix	389.7
5	Raleigh	329.3
6	Riverside	278.8
7	Tampa	244.4
8	Salt Lake City	236.6
9	Houston	232.7
10	Dallas	212.0
11	Sacramento	209.5
12	Atlanta	204.4
13	Denver	181.8
14	Miami	180.3
15	Nashville	166.7
16	San Antonio	159.9
17	San Diego	157.8
18	Portland	154.8
19	San Jose	150.5
20	Charlotte	143.9
21	Seattle	141.1
22	Jacksonville	139.9
23	Washington, D.C.	119.6
24	Oklahoma City	116.0
25	Columbus	115.1
26	Minneapolis	113.3
27	Richmond	96.3
28	Indianapolis	83.4
United States		**80.6**
29	Kansas City	75.6
30	Memphis	70.5
31	Los Angeles	68.4
32	Virginia Beach	65.6
33	Cincinnati	65.1
34	Birmingham	64.2
35	San Francisco	62.3
36	Louisville	59.7
37	Baltimore	52.7
38	Boston	51.3
39	Milwaukee	41.4
40	Hartford	36.8
41	**St. Louis**	**36.2**
42	Chicago	32.0
43	Philadelphia	28.5
44	New Orleans	27.1
45	Providence	25.2
46	New York	23.3
47	Pittsburgh	16.4
48	Detroit	11.6
49	Buffalo	6.1
50	**Cleveland**	**4.9**

Source: Bureau of Economic Analysis

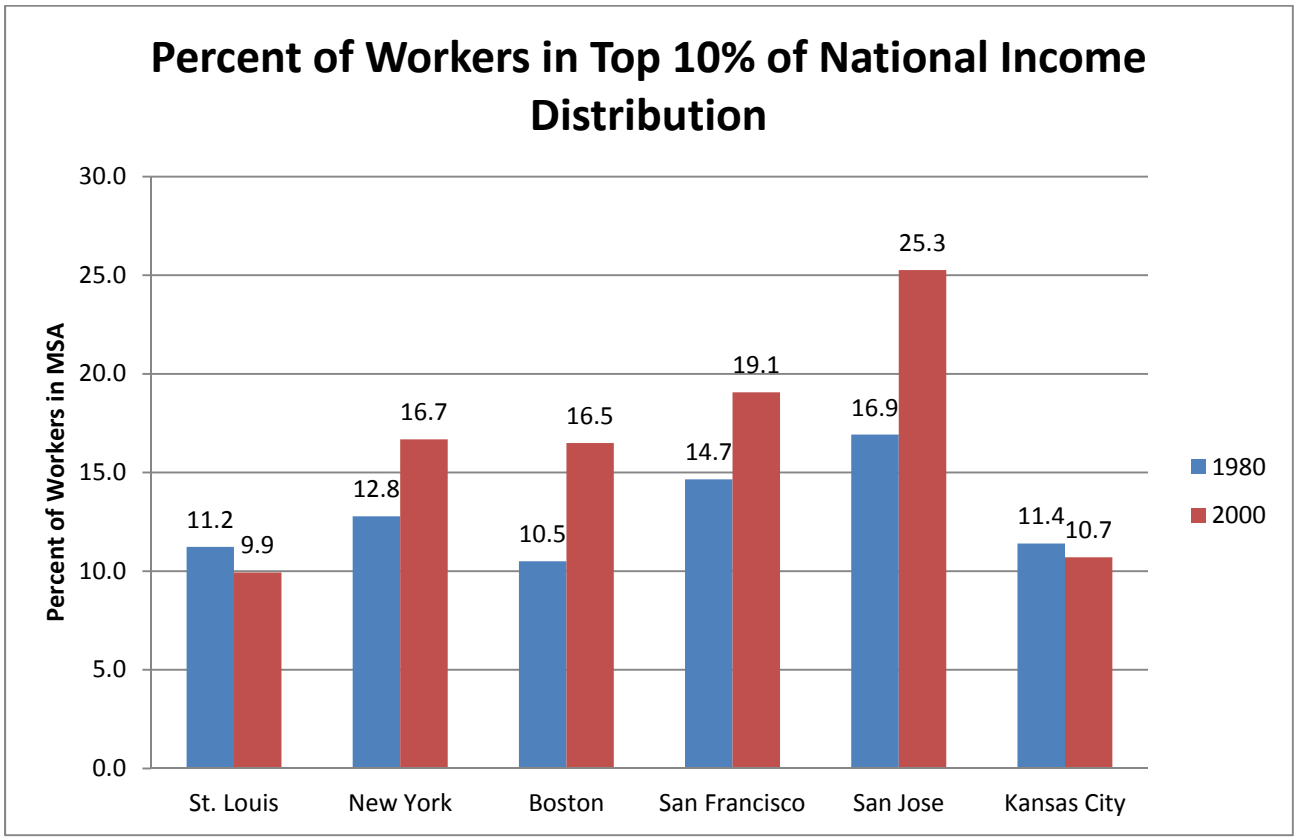
Figure 3



Source: US Bureau of Economic Analysis, Table CA30

Much of the observed divergence in wages has been due to an increasing geographic concentration of the highest wage jobs. Figure 4 shows the percentage of workers that ranked in the top decile of the national income distribution in six metropolitan areas, for the years 1980 and 2000. In 1980, 11.2% of workers in the St. Louis region were in the top 10% of all earners nationwide. By 2000, this percentage had fallen to 9.9%. At the same time, in New York, the percentage of workers in the top national decile rose from 12.8% to 16.7%. The change in share of top decile workers was even more dramatic in Boston, San Francisco, and San Jose.

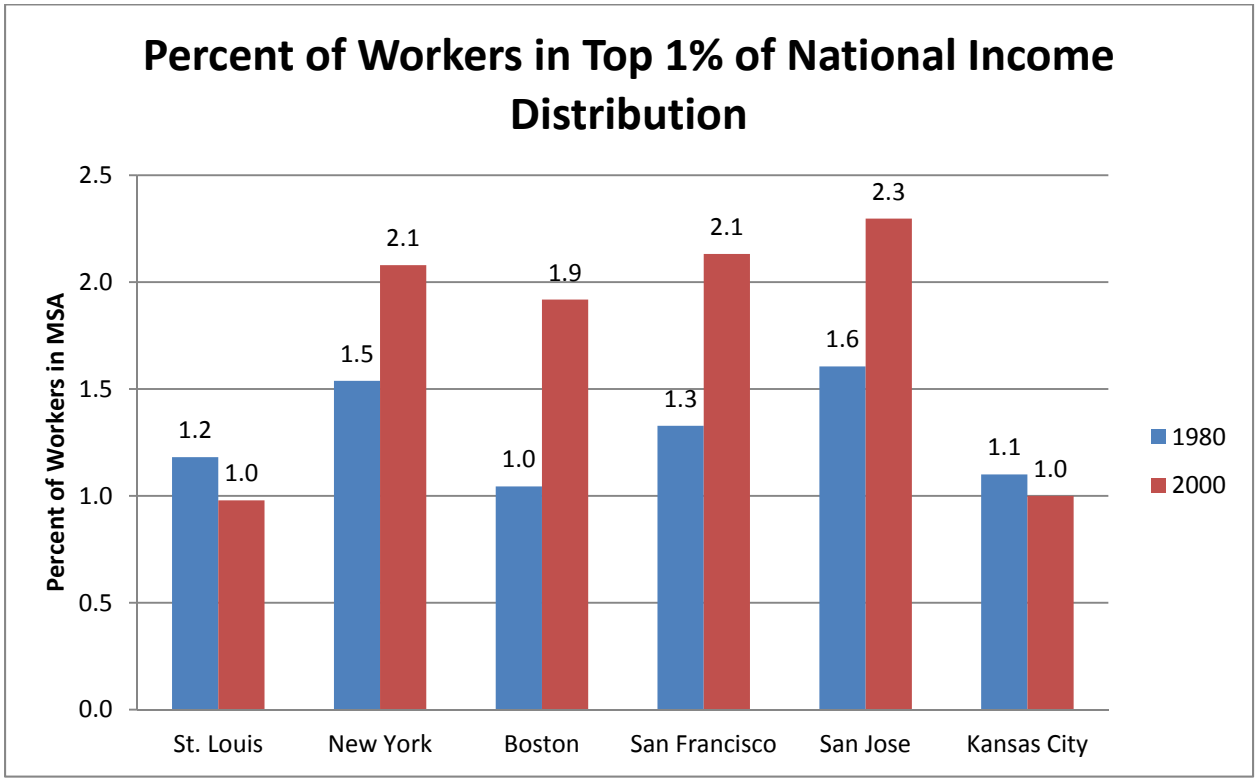
Figure 4



Source: **Steven** Ruggles, Katie Genadek, Ronald Goeken, Josiah Grover, and Matthew Sobek. *Integrated Public Use Microdata Series: Version 6.0* [Machine-readable database]. Minneapolis: University of Minnesota, 2015.

Figure 5 shows a similar breakdown for workers in the top 1% of the national income distribution. In 1980, 1.2% of workers in the St. Louis region were in the national top 1%. In 2000, this had fallen to just 1%. By contrast, New York, Boston, San Francisco and San Jose saw dramatic increases in their share of workers in the top 1%, each with about double the national average of these top-earning workers.

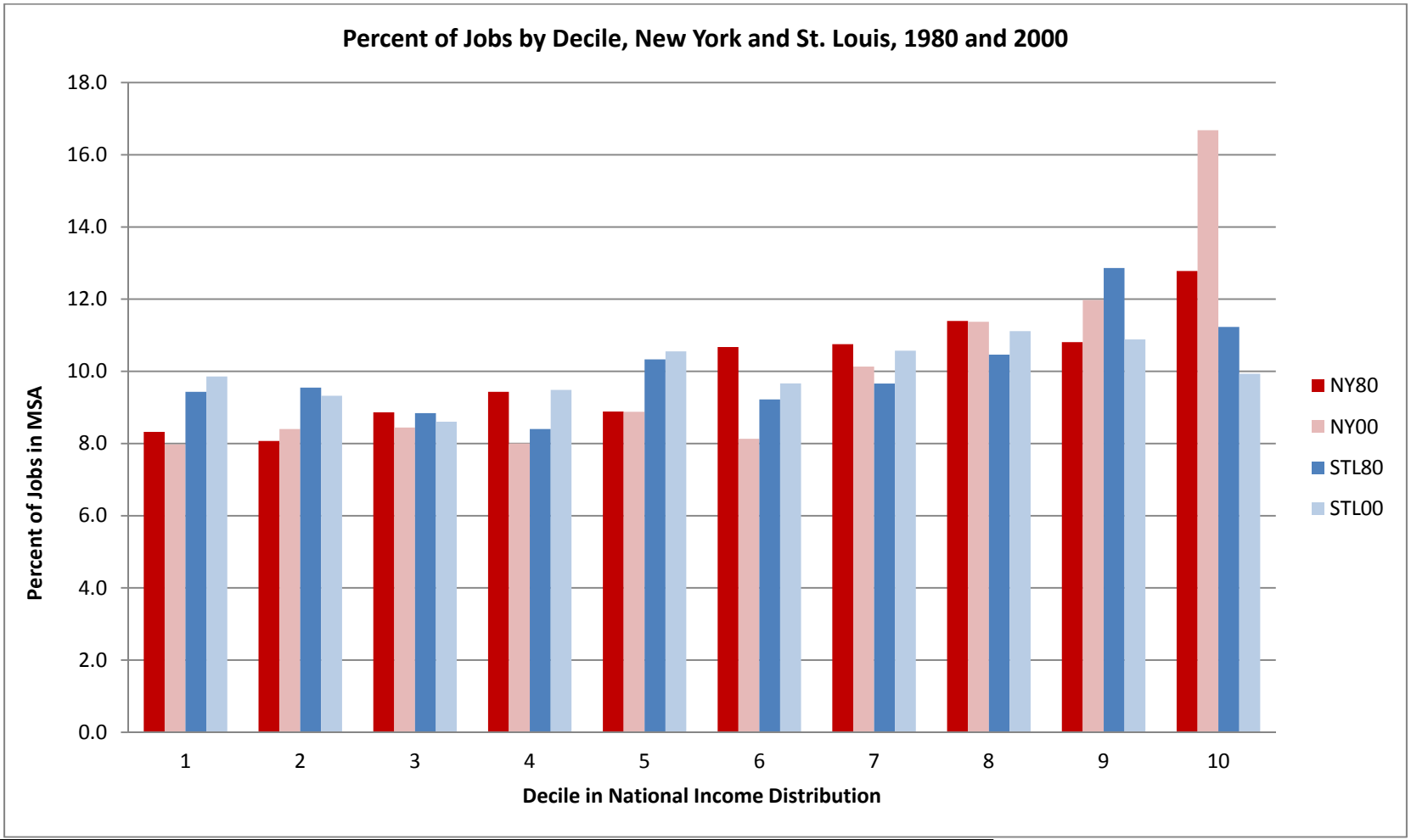
Figure 5



Source: **Steven** Ruggles, Katie Genadek, Ronald Goeken, Josiah Grover, and Matthew Sobek. *Integrated Public Use Microdata Series: Version 6.0* [Machine-readable database]. Minneapolis: University of Minnesota, 2015.

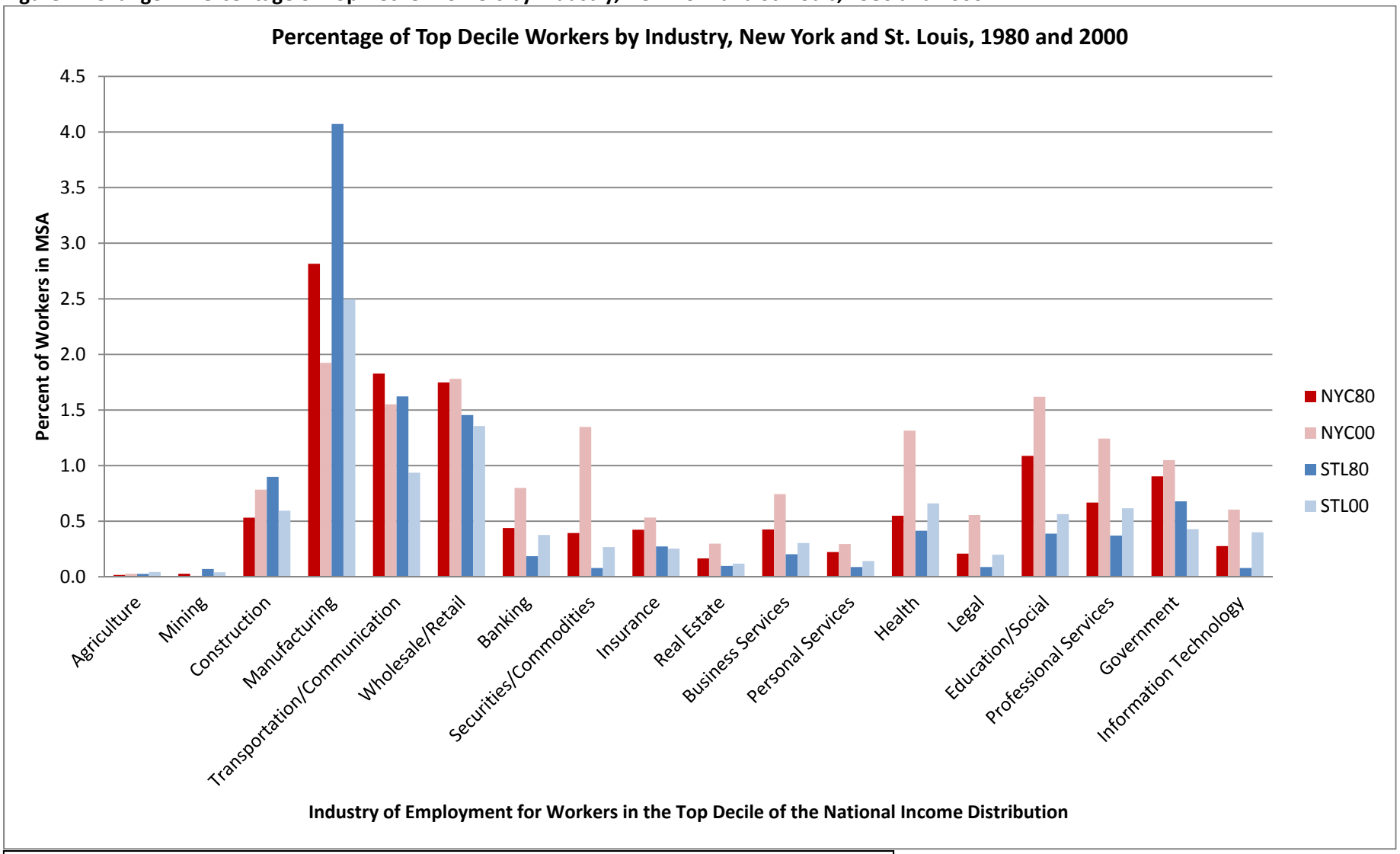
Figure 6 shows, for the St. Louis and New York regions, the change in percentage of workers for each decile of the national income distribution. As noted previously, New York had an increase in the percent of workers in the top decile, while St. Louis had a decrease. The same was true of the second highest decile. St. Louis had increases in the percentage of workers in each of the fourth through eighth percentiles, i.e., from the 30th to the 79th percentile. New York saw declines in the percentage of workers in these middle deciles. For both regions, changes were modest in the bottom three deciles of the income distribution. Thus, New York increased its wages relative to St. Louis by seizing a growing share of workers in the top 20% of the income distribution.

Figure 6: Percentage of Jobs by Decile, New York and St. Louis, 1980 and 2000



Source: **Steven** Ruggles, Katie Genadek, Ronald Goeken, Josiah Grover, and Matthew Sobek. *Integrated Public Use Microdata Series: Version 6.0* [Machine-readable database]. Minneapolis: University of Minnesota, 2015.

Figure 7: Change in Percentage of Top Decile Workers by Industry, New York and St. Louis, 1980 and 2000



Source: **Steven** Ruggles, Katie Genadek, Ronald Goeken, Josiah Grover, and Matthew Sobek. *Integrated Public Use Microdata Series: Version 6.0* [Machine-readable database]. Minneapolis: University of Minnesota, 2015.

Figure 7 takes a closer look at the types of jobs in the top decile that were gained and lost in St. Louis and New York between 1980 and 2000. The tall dark blue bar on the chart represents manufacturing employment in St. Louis in 1980. It shows that in 1980, more than 4% of the St. Louis workforce consisted of manufacturing workers that were in the top decile of the national income distribution. By 2000, the number had fallen to just 2.5%. New York also saw a decrease in the percentage of the labor force that consisted of top decile manufacturing workers in the top decile.

New York enjoyed a strong growth in high-earning finance workers. Both banking and firms specializing in securities and commodities saw a dramatic growth. By 2000, 2.9% of New York's workforce was a top decile earner working in finance, insurance, or real estate. St. Louis was hurt more than New York by the decline of manufacturing, while New York was helped more than St. Louis by the rise of finance.

Conclusion

In 1980, the income gap between St. Louis and other high wage regions, such as New York, Boston and San Francisco, was relatively small. Since 1980, the wage gap between St. Louis and these high wage regions has increased. Most of the divergence in wages occurred between 1980 and 2000.

Much of the wage divergence between regions can be attributed to an increasing concentration of high income workers, particularly those in the top decile of the national income distribution. New York, Boston and San Francisco each saw dramatic increases in the percentage of workers in the top decile, while St. Louis experienced a drop. A similar geographic concentration of workers in the top 1% also occurred.

A closer look at the differences between New York and St. Louis shows that St. Louis was harder hit by the national decline in manufacturing, and that New York gained more from the rise of finance.

The fact of regional wage divergence documented in this paper raises additional questions about why industries with high wage workers became more geographically concentrated over time. This topic will be addressed in future working papers.