
Exploring Effects of Raising Minimum Wage in San Francisco

Motivations & Summary

- 14 cities and counties in seven states have adopted an accelerated minimum wage hike including San Francisco
- In 2003 San Francisco voters approved Proposition L, the Minimum Wage Ordinance to pay a minimum wage of \$8.50 per hour. making San Francisco one of the few cities in the country with a local minimum wage higher than the state or federal minimum.
- In 2014 San Francisco enacted law to increase minimum wage to \$15/hr. by 2018
- We were interested in:
 - The change in wages vs. employment level
 - Comparing San Francisco to San Diego
 - Concentrating on Retail and Food/Accommodations

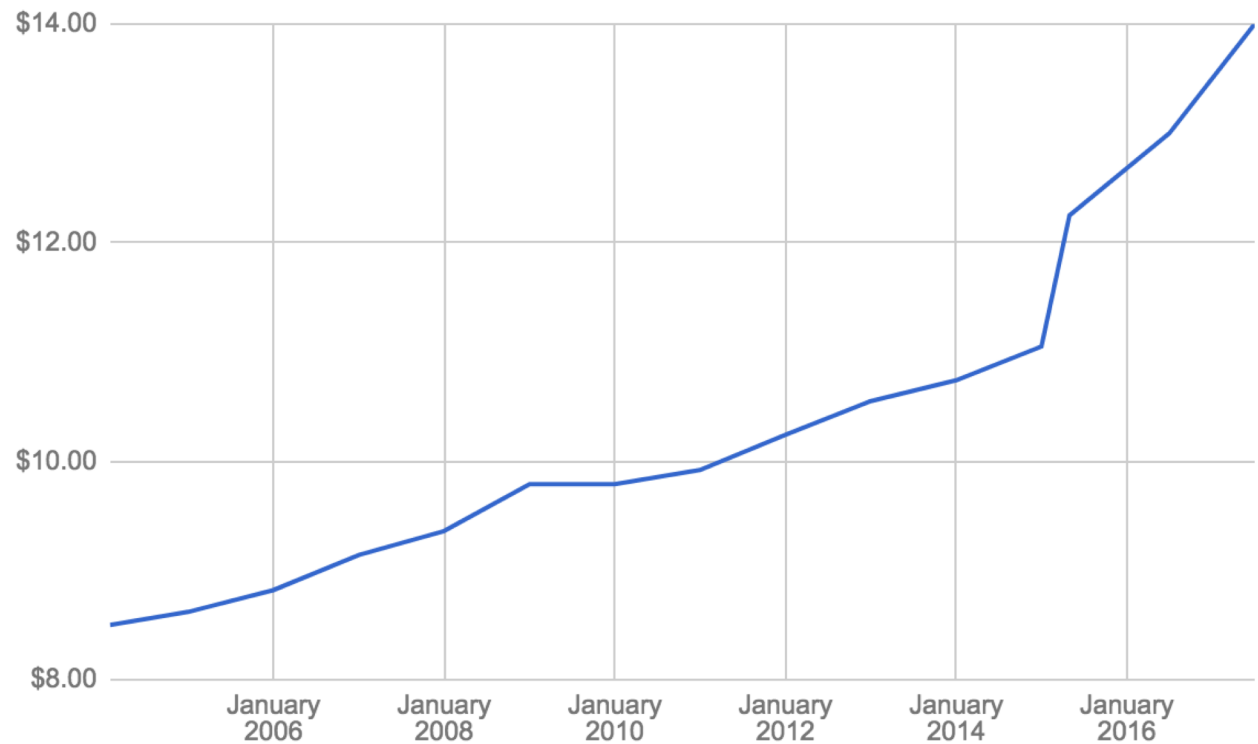
Questions & Data

- Does higher minimum wage put businesses out of business?
- Does higher minimum wage improve quality of workforce?
- Does higher minimum wage reduce amount of jobs?
- What impact on levels of employment can we see?
- How does a higher minimum wage measure against all other jobs?
- How does a higher minimum wage here compare to other places?

We explored, collected, and utilized data from several sources. We ultimately utilized the Bureau of Labor & Statistics for wage and employment data.

Historical Data

- July 1, 2017: **\$14.00/hour**
- July 1, 2016: **\$13.00/hour**
- May 1, 2015: **\$12.25/hour**
- January 1, 2015: **\$11.05/hour**
- January 1, 2014: **\$10.74/hour**
- January 1, 2013: **\$10.55/hour**
- January 1, 2012: **\$10.24/hour**
- January 1, 2011: **\$9.92/hour**
- January 1, 2010: **\$9.79/hour**
- January 1, 2009: **\$9.79/hour**
- January 1, 2008: **\$9.36/hour**
- January 1, 2007: **\$9.14/hour**
- January 1, 2006: **\$8.82/hour**
- January 1, 2005: **\$8.62/hour** (\$7.75
- February 23, 2004: **\$8.50/hour** (non



Data Cleanup & Exploration

Minimum Wage & Employment



Quarterly Census of Employment and Wages

QCEW Industry Codes and Titles (For NAICS Coded Data)

The QCEW program uses the North American Industry Classification System (NAICS) as detailed as well as at aggregated levels. Detailed industry NAICS coded data are available from 2006 they are coded to the 2002 version of NAICS. For periods from 2007 to 2011 they are coded to the 2012 version of NAICS, and for 2017 forward to the 2017 version. The NAICS coded QCEW data.

The table below is available as an Excel workbook (.xlsx), a comma separated values file (.csv).

DOWNLOAD: [XLSX](#) [CSV](#) [TXT](#)

Related Documentation: [QCEW Data Guide](#); [QCEW Industry Guide](#) [QCEW Data File](#)

QCEW Industry Codes and Titles (For NAICS Coded Data)

Code	Industry
10	10 Total, all industries
101	101 Goods-producing
1011	1011 Natural resources and mining
1012	1012 Construction
1013	1013 Manufacturing
102	102 Service-providing
1021	1021 Trade, transportation, and utilities
1022	1022 Information
1023	1023 Financial activities
1024	1024 Professional and business services
1025	1025 Education and health services
1026	1026 Leisure and hospitality
1027	1027 Other services
1028	1028 Public administration
1029	1029 Unclassified

2016_72_food.csv - Excel																											
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	area_fips	own_code	industry_c	agglvl	code_size	code	year	qtr	disclosure	area_title	own_title	industry_t	agglvl_title	size_title	qtrly_estal	month1_e	month2_e	month3_e	total_qtrly	taxable_qt	qtrly_cont	avg_wkly_lq	disclos_lq	qtrly_e	lq	qtrly_e	lq
2	1000	1	72	54	0	2016	1		Alabama - Federal Gc	NAICS 72 / State, N/A	All establish			10	413	419	438	1776873	0	0	323			1.98			
3	1000	1	72	54	0	2016	2		Alabama - Federal Gc	NAICS 72 / State, N/A	All establish			10	443	443	423	2047113	0	0	361			2.01			
4	1000	1	72	54	0	2016	3		Alabama - Federal Gc	NAICS 72 / State, N/A	All establish			10	428	422	421	1966554	0	0	357			2			
5	1000	1	72	54	0	2016	4		Alabama - Federal Gc	NAICS 72 / State, N/A	All establish			10	414	415	404	1955781	0	0	366			1.99			
6	1000	2	72	54	0	2016	1	N	Alabama - State Gov	NAICS 72 / State, N/A	All establish			1	0	0	0	0	0	0	0	N		4.42			
7	1000	2	72	54	0	2016	2	N	Alabama - State Gov	NAICS 72 / State, N/A	All establish			1	0	0	0	0	0	0	0	N		4.42			
8	1000	2	72	54	0	2016	3	N	Alabama - State Gov	NAICS 72 / State, N/A	All establish			1	0	0	0	0	0	0	0	N		4.69			
9	1000	2	72	54	0	2016	4	N	Alabama - State Gov	NAICS 72 / State, N/A	All establish			1	0	0	0	0	0	0	0	N		4.65			
10	1000	3	72	54	0	2016	1		Alabama - Local Gov	NAICS 72 / State, N/A	All establish			150	1204	1212	1215	6157398	102693	1532	391			16.98			
11	1000	3	72	54	0	2016	2		Alabama - Local Gov	NAICS 72 / State, N/A	All establish			152	1216	1224	1239	5816995	77115	1102	365			17.05			
12	1000	3	72	54	0	2016	3		Alabama - Local Gov	NAICS 72 / State, N/A	All establish			156	1095	1111	1208	6263471	41214	593	423			17.89			
13	1000	3	72	54	0	2016	4		Alabama - Local Gov	NAICS 72 / State, N/A	All establish			155	1228	1230	1228	6384558	25533	386	400			17.74			
14	1000	5	72	54	0	2016	1		Alabama - Private	NAICS 72 / State, N/A	All establish			9070	170386	173689	177629	6.52E+08	5.81E+08	6913107	288			1.07			
15	1000	5	72	54	0	2016	2		Alabama - Private	NAICS 72 / State, N/A	All establish			9191	181186	182091	181531	7E+08	4.17E+08	5037672	296			1.07			
16	1000	5	72	54	0	2016	3		Alabama - Private	NAICS 72 / State, N/A	All establish			9298	180484	182066	180870	7.29E+08	2.89E+08	3603627	310			1.08			
17	1000	5	72	54	0	2016	4		Alabama - Private	NAICS 72 / State, N/A	All establish			9401	178866	179021	176655	7.08E+08	2.22E+08	2855455	306			1.08			
18	1001	3	72	74	0	2016	1	N	Autauga Co	Local Gov	NAICS 72 / County, N/A	All establish		1	0	0	0	0	0	0	0	N		15.96			
19	1001	3	72	74	0	2016	2	N	Autauga Co	Local Gov	NAICS 72 / County, N/A	All establish		1	0	0	0	0	0	0	0	N		15.87			
20	1001	3	72	74	0	2016	3	N	Autauga Co	Local Gov	NAICS 72 / County, N/A	All establish		1	0	0	0	0	0	0	0	N		16.42			

Data Cleanup & Exploration

Minimum Wage & Employment

```
2 percentage_change = blah.pct_change()
3 percentage_change_df = percentage_change[["Total Wages Collected", "Yearly Total Emp"]]
4 percentage_change_df
```

Out[55]:

	Total Wages Collected	Yearly Total Emp
Year		
2004	NaN	NaN
2005	0.048038	0.012418
2006	0.044523	0.020940
2007	0.072121	0.031748
2008	0.039988	0.016149
2009	-0.070507	-0.055360
2010	0.028810	-0.001968
2011	0.069442	0.029117
2012	0.074603	0.043405
2013	0.060773	0.036024
2014	0.056180	0.040150
2015	0.104684	0.043533

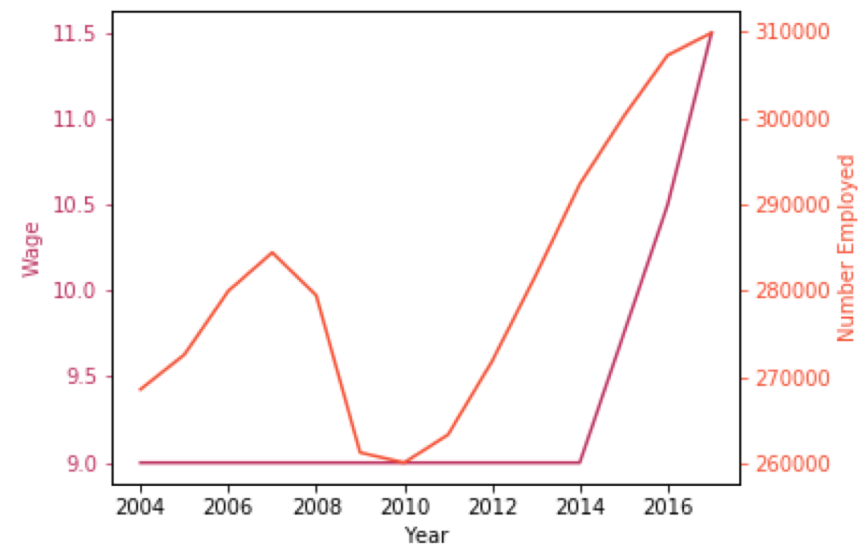
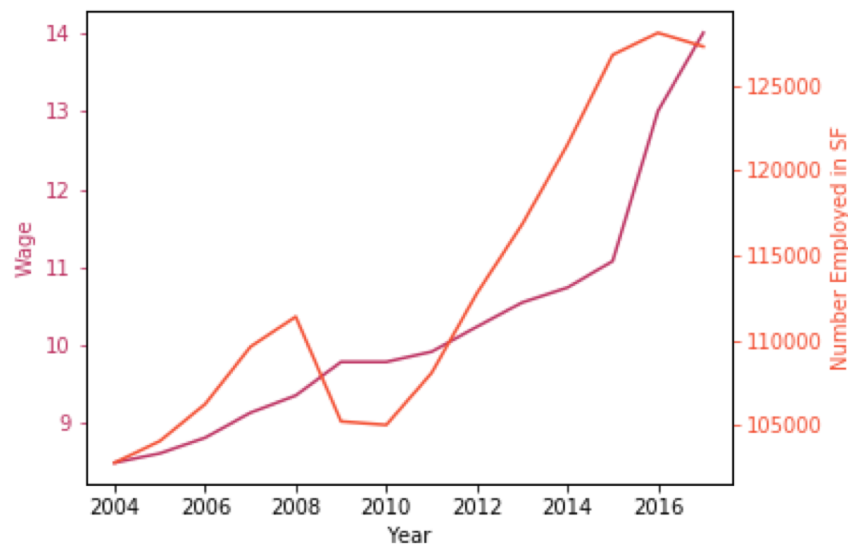
In [46]:

```
1 import os
2 import csv
3 import glob
4 import pandas as pd
5 import matplotlib.pyplot as plt
6 import seaborn as sns
```

In [47]:

```
1 year_list = []
2 industry_list = []
3 quarter_list = []
4 industry_type_list = []
5 month1_list = []
6 month2_list = []
7 month3_list = []
8 total_wages_list = []
9
10 for each_csv_file in glob.glob("*.csv"):
11     print(each_csv_file)
12
13     csvpath = each_csv_file
14
15     with open(csvpath, newline='') as csvfile:
16         csvreader = csv.reader(csvfile, delimiter=',')
```

Minimum Wage & Employment

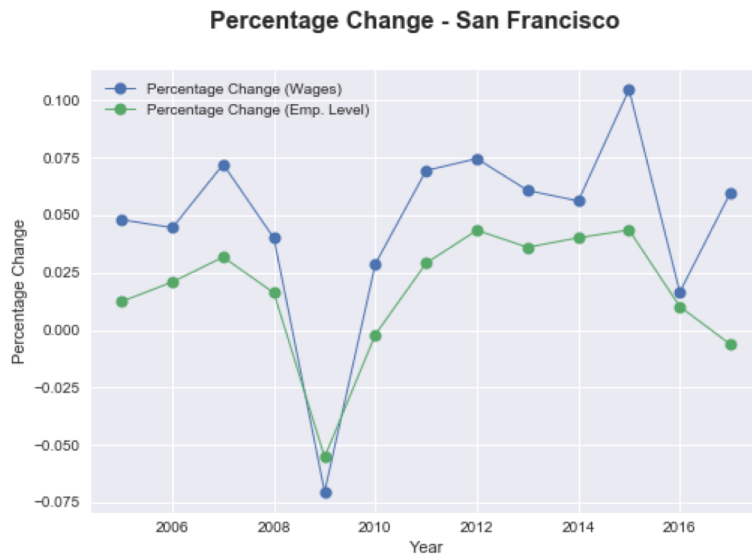


Net job number growth continues to rise in the the early years of accelerated minimum wage growth.

It isn't until the last year that we see job number declines.

There could be several factors contributing to this aside from the wage alone.

Minimum Wage & Employment



Accommodation & Food Services and Retail Trade

We narrowed our scope to the two most prominent occupational sectors to gain an overview on what may or may not have changed and how. Through the research we saw that the majority of minimum wage workers are in the Accommodation & Food Services and Retail Trade industries.

Minimum Wage & Employment

Percentage Change - San Francisco



Percentage Change - San Diego



- Using San Diego as a reference, minimum wage increases have been limited to state minimum wage schedule.
 - Compared to San Francisco, minimum wage increased 18% within a span of 18 months beginning 2015 to mid-2016
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Minimum Wage & Employment

Observations & Conclusions

1. No consensus amongst economic researchers.
 2. Past data has shown that there has been net job increases strongly correlated with minimum wage increases, which would seem to support minimum wage increases.
 3. From 2015-2016, minimum wage increased 18%, and employment growth showed a 75% decrease. Although this suggests that there was a minimum wage effect. Other possible causes can be because people are moving out of SF (cost of living, rents, etc.). More importantly, it does NOT show a loss of employment.
 4. It doesn't seem to be the case that a high/increasing minimum wage necessarily results in decreased employment, it is more likely that other factors affect employment more strongly, which can affect the data.
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Final Conclusions

What Did We Learn?

1. Leads to spike in wages, but may contribute to short-term job loss in certain sectors evidenced by job numbers & overall wage growth.
2. Minimum wage increases correlated with employment increases, not decreases

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Follow Up Notes

Minimum Wage & Employment

- Difficulties
 - Combining a lot of files
 - Getting Usable Data
 - Further Exploration
 - Employment data in the future or further in the past
 - Other economic measures (household spending, cost of living)
 - More cities/states, areas
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