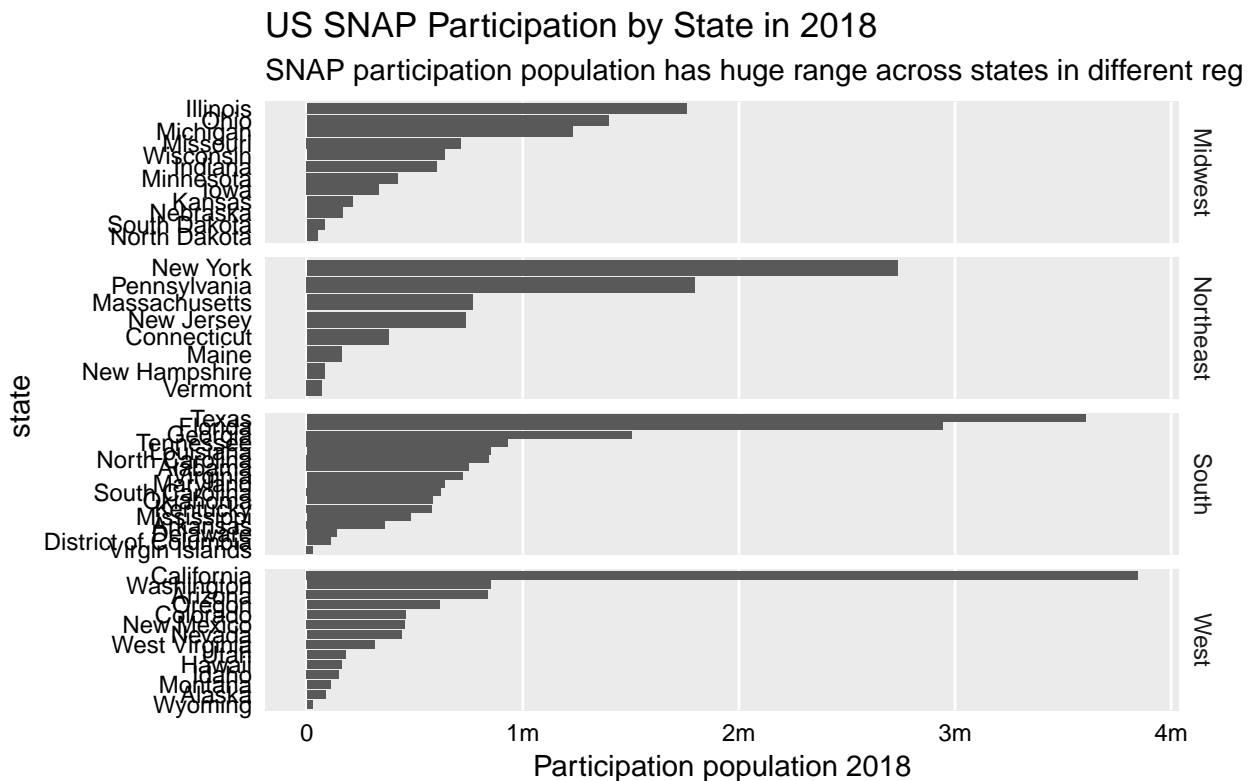


proj2.1
Yangyang Dai
2/1/2019

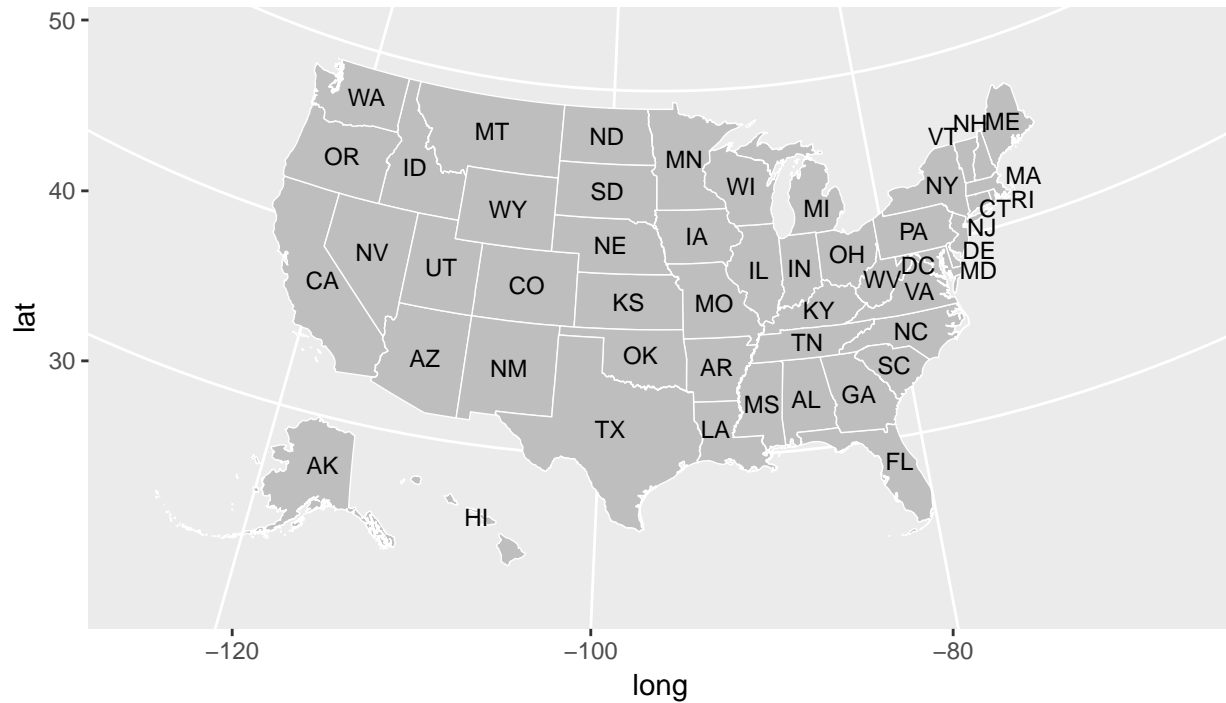
Participation by state



Source: USDA Food Nutrition Services
<https://www.fns.usda.gov/pd/supplemental-nutrition-assistance-program-snap>

Participation population of SNAP program in US across the 51 states, four regions, are shown above. West has the widest range of participation numbers, while it's more concentrated for Midwest. Overall, at state level, California has the most participations, nearly 4 million, and Wyoming has the fewest participants, about 0.1 million.

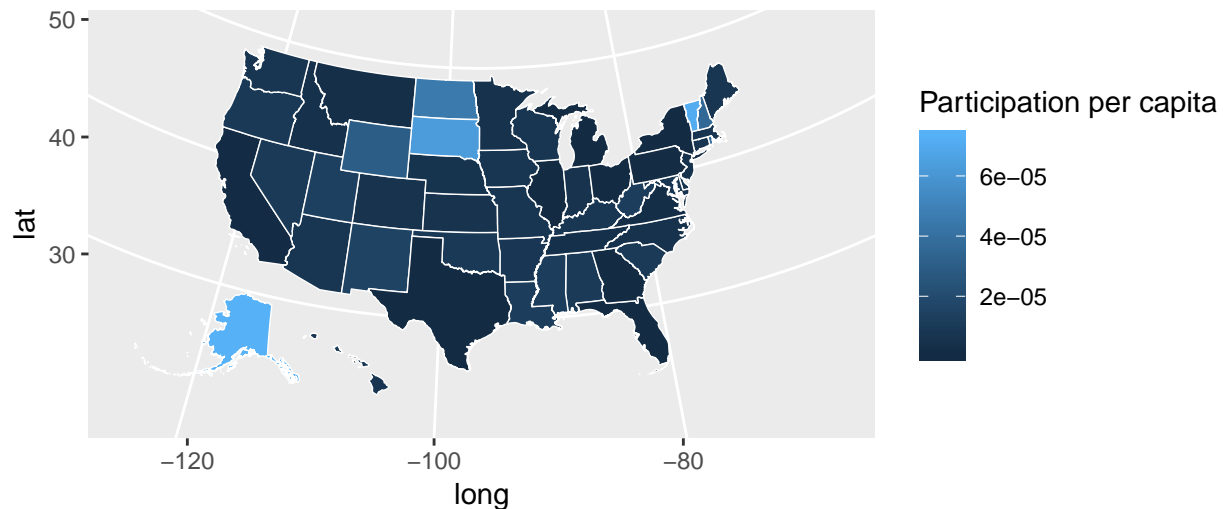
```
## Skipping install of 'urbnmapr' from a github remote, the SHA1 (e42435b7) has not changed since last
## Use `force = TRUE` to force installation
```



```
## Warning: Column `state_name` joining factor and character vector, coercing
## into character vector
```

US SNAP Participation per capita by State

State SNAP participation rate has small range



Source:USDA Food Nutrition Services

The first map is the US base map with state names labeled. From the US state map, combining with SNAP participation data, we can see that state AL, ND, SD and NH have the highest participation rate. This is reasonable as these states are less developed and tend to have more poor people. The participation rate range is not very big, therefore the colors are generally darker. Most of the states have participation rate around 0.00002 or lower.

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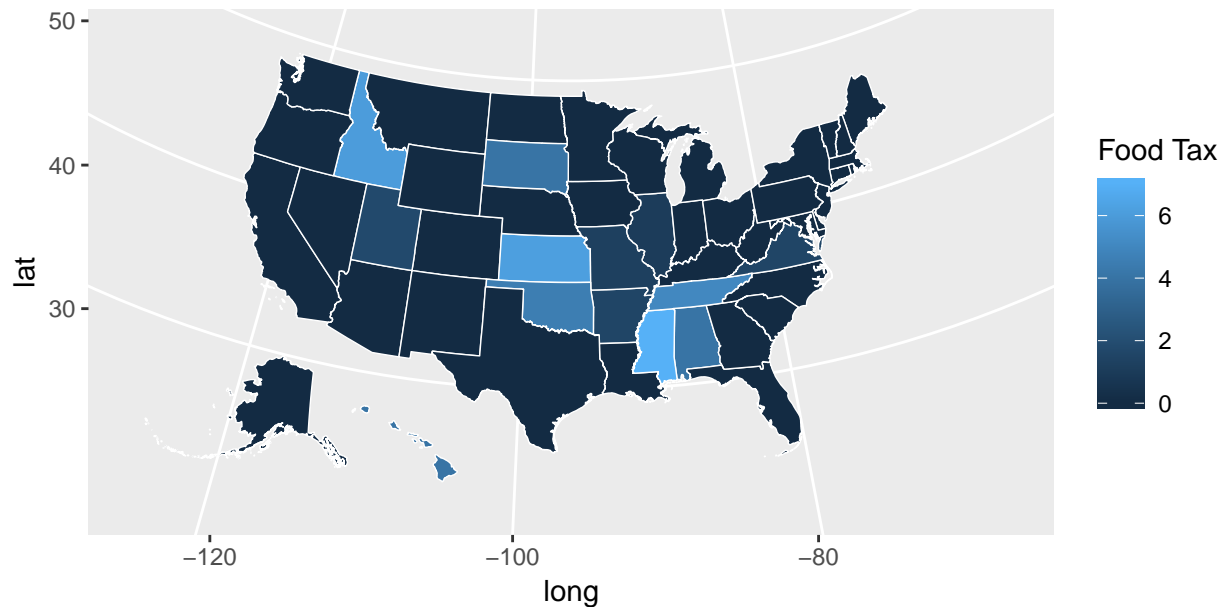
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## Warning: Column `state_abbv` joining factor and character vector, coercing
## into character vector
```

US Food Tax



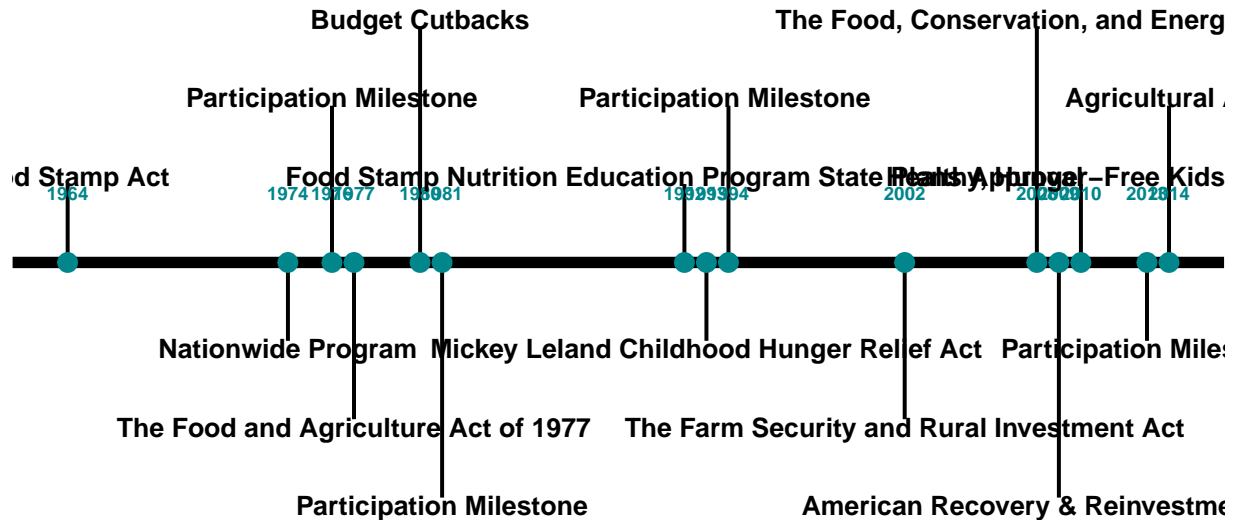
Source:USDA Food Nutrition Services

Drawing a US Food Tax map across states and comparing it with the previous participation rate map, we can see that places with higher SNAP participation rates do not have high food tax. And places with high food tax rates tend to have low SNAP participation rates.

PLOT

SNAP 1964 – Today

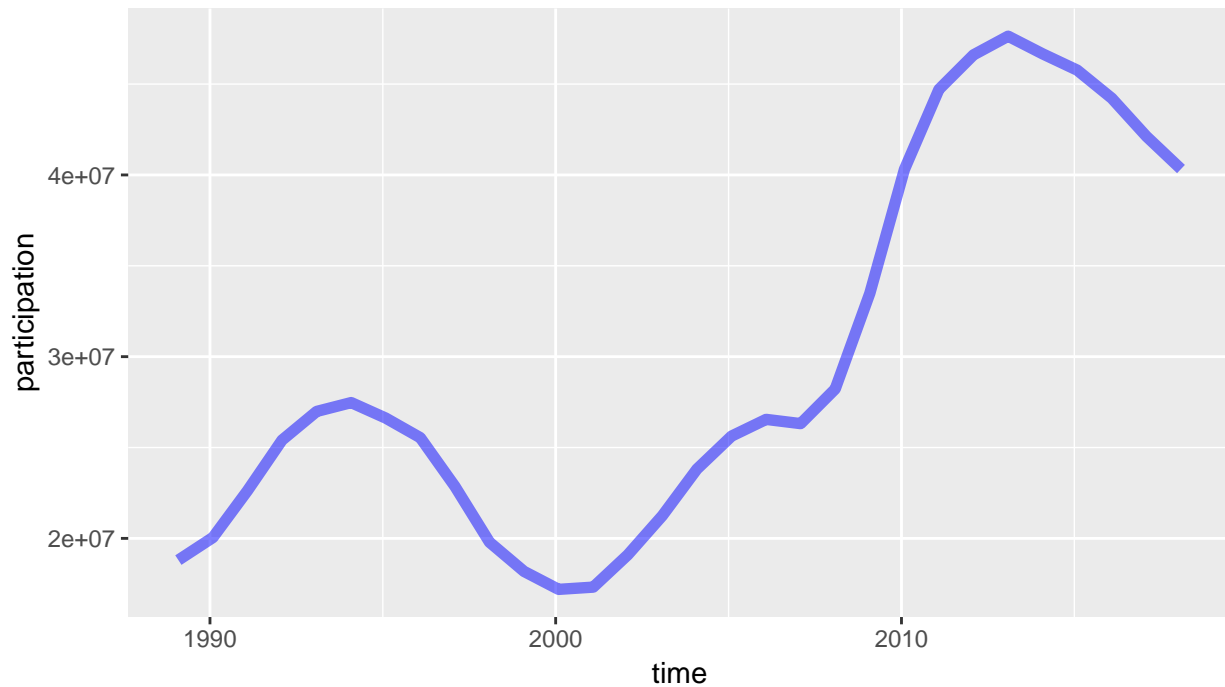
Big Events in SNAP History



Source: USDA Food Nutrition Services
<https://www.fns.usda.gov/snap/short-history-snap>

SNAP Participation Population 1989–2018

SNAP participation doubled over the last two decades

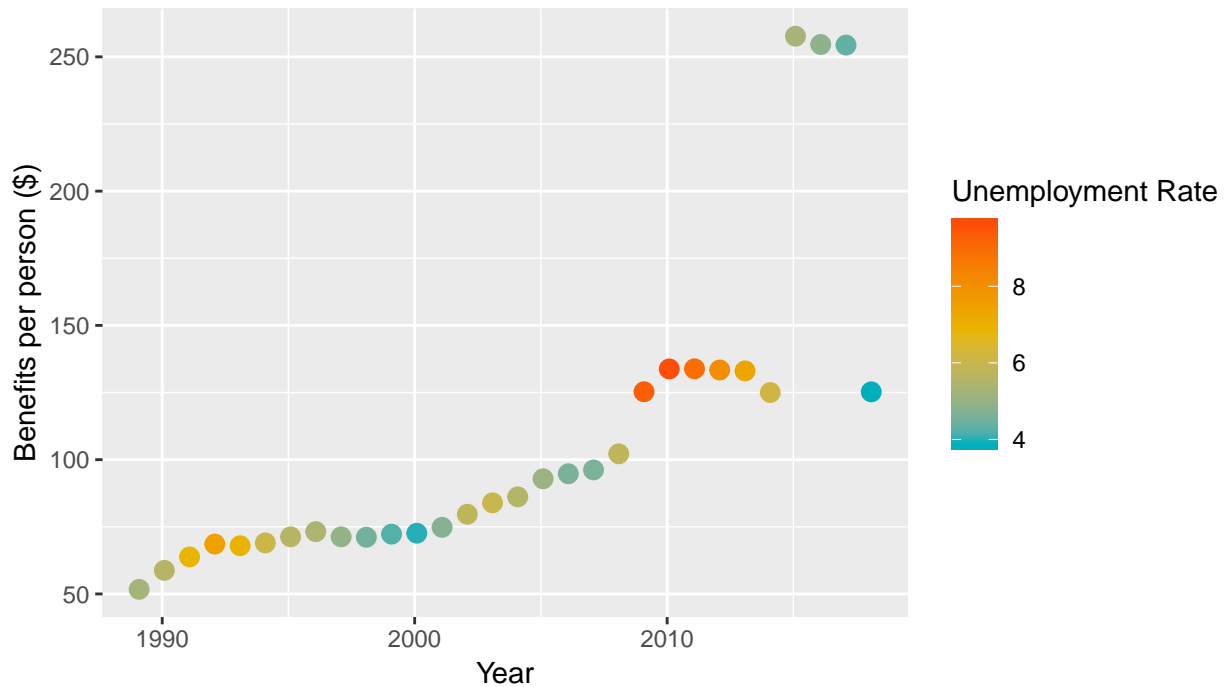


Source: USDA Food Nutrition Services
<https://www.fns.usda.gov/snap/short-history-snap>

From 1989 to 2018, the SNAP participation number in US increased from below two millions to about four millions, almost doubled in two decades. The peaks within the two decades happened at year 1994 and year 2013, reached over 2.5 millions and over 4.5 millions respectively. Connecting to the previous SNAP timeline graph, SNAP reached participation milestone for those two years. The Food Stamp Nutrition Education program at 1992 and Mickey Leland Childhood Hunger Relief Act at 1993 influenced the growth of SNAP, the participants increased dramatically afterwards. And from 2002 to 2014, there are five events happened that drove the SNAP participation greatly.

SNAP benefit dollar per person and Unemployment Rate 1989–2018

Overall the SNAP participation and benefits increased over the last two decades



Source: Bureau of Labor Statistics
<https://data.bls.gov/timeseries/LNS14000000>

From 1989 to 2018, the benefits per person increased dramatically. From around 50 dollars to above 250 dollars, the dollar benefit is currently five times more than from the beginning. The color scale shows the range of unemployment rate over the years. The unemployment rate fluctuates from 1989 to 2008, and increased dramatically around 2008 to 2014, which is the financial crisis period. The benefit per person decreased a little, but after the crisis, the benefit jumped very high till around 250 dollars per person and came back to around 125 in the most recent year.