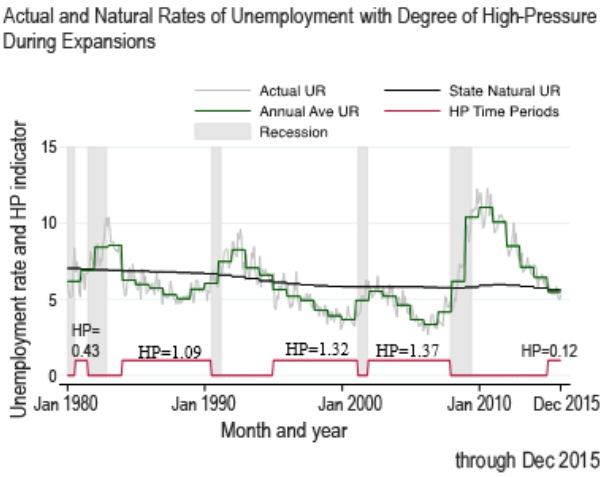
Details behind Measuring the Long-Term Impact of High-Pressure Economies on the Probability of Unemployment during Subsequent Recessions

I make use of cross-sectional data from the monthly Current Population Survey (CPS) to examine how a worker's probability of unemployment during a recession is affected by the degree to which the labor market in the state where they live was "high-pressure" during the prior expansion.

I quantify a high-pressure economy by using the average amount by which the person's state unemployment rate falls below the state's natural rate of unemployment during an expansionary period (as defined by NBER dating). As an example, the figure below illustrates how this calculation is performed for Florida.



Note that the state's natural rate of unemployment is constructed by adjusting the Congressional Budget Office's (CBO) U.S. natural rate by the difference between the average state and national unemployment rates between 1980 and 2015. Hence, the rate reported by the CBO is a state-specific shift in the U.S. natural rate of unemployment.

The chart shows that between the 2001 and 2007 recessions, Florida experienced a high-pressure economy equal to 1.37. This means that between the recessions, Florida's actual unemployment rate was 1.37 percentage points below the state's natural rate of unemployment each year, on average. This figure is the area of the space between the state's natural and actual rates of unemployment. Note that I use the 12-month average for this calculation, rather than the actual unemployment rate.

I then use a linear probability model to relate the magnitude of a state's high-pressure economy to an individual's likelihood of unemployment during the next recession. This analysis is cross-sectional; controls for state, month, and year fixed effects; and is limited to 18- to 64-year old labor force participants. The regression equation is as follows:

$$U_{ist} = \alpha + \sum_{k=1}^{3}\{AGE_i^k(\delta_{1k} + \delta_{2k}R_t + \delta_{3k}R_t * HP_s)\}$$
$$+ \sum_{k=2}^{4}\{RACE_i^k(\beta_{1k} + \beta_{2k}R_t + \beta_{3k}R_t * HP_s)\}$$
$$+ \sum_{k=1}^{3}\{EDUC_i^k(\varphi_{1k} + \varphi_{2k}R_t + \varphi_{3k}R_t * HP_s)\}$$
$$+MALE_i\{\theta_1 + \theta_2 REC_t + \theta_3 R_t * HP_s\} + R_t\{\rho_1 + \rho_2 HP_s\}$$
$$+\tau_t + \mu_t + \sigma_s + \varepsilon_{ist}\ .$$

Each demographic category (age, race, education, and male) enters on its own and interacts with a recession dummy (*R*), plus a recession dummy modified by the degree of high pressure during the expansion prior to the recession (*HP*). Note that the regression includes year (τ_t), month (μ_t), and state (σ_s) fixed effects. Standard errors are clustered at the state level.

Since unemployment tends to linger, especially after the most recent recession, the analysis was repeated designating "high-unemployment" time periods, which includes recessions. The conclusions are the same. I performed this analysis using CPS-supplied person basic weights, and standard errors are clustered at the state level.