Case Study of Unemployment Insurance Reform in North Carolina*

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Abstract

In July 1, 2013 unemployed workers in North Carolina lost access to all federally financed unemployment benefit extensions. Our objective here is twofold 1) to construct and make available a dataset that contains most relevant series to provide a common ground for the discussion of the performance of the labor market in North Carolina following this reform; 2) to evaluate whether the evidence from North Carolina is consistent with past research on the effects of unemployment benefits. In this note we describe the data series provided in the accompanying file, present basic graphs summarizing the data, and offer some tentative conclusions.

*The views expressed in this paper are those of the authors and do not necessarily reflect the position of the Federal Reserve Bank of New York or the Federal Reserve System.

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1 Introduction

In February 2013, faced with the fifth-highest unemployment rate in the US and an accumulated unemployment insurance system debt to the federal government of over $2 billion, North Carolina's legislature decided to reform its unemployment insurance system. It reduced the maximum benefit payout and the number of weeks residents can receive unemployment benefits. This reform violated the federal law, under which states whose residents receive federally-financed unemployment compensation after exhausting their state benefits are not allowed to reduce the benefit amount. As a consequence, on July 1, 2013 unemployed residents of North Carolina lost access to all (federally financed) unemployment benefit extensions.

This change attracted enormous attention in the press and from the academic and policy community because it might be helpful for assessing the consequences of the decision to not extend federal Emergency Unemployment Compensation program starting in January 2014. In this Note we describe the available evidence in the hope of informing this debate and helping to provide a more complete picture. A file with all the data described here is available on the authors' websites.

It is very important to recognize before proceeding any further, that one cannot derive definitive conclusions about the effects of unemployment benefit programs on the labor market from the analysis of the experience of a single state. Decisions of even a single large employer, which may be unrelated to the unemployment insurance reform, may have an impact on the statistics. It is also hard to isolate the impact of the reform from the impact of weather, other policy changes, changes in interstate migration decisions, changes in the determinants of the decisions to enter the labor force or retire, etc. Moreover, only a few months of data are available and sample sizes available in most data sets are too small to yield reliable predictions of month to month changes in variables such as employment, unemployment, etc. So the evidence provided below should be interpreted with extreme caution.

We provide evidence from three data sources containing relevant information.

1. Current Population Survey, CPS, also known as the Household Survey.
2. Current Employment Statistics, CES, also known as the Establishment Survey.
3. Bureau of Labor Statistics estimates from the Local Area Unemployment Statistics (LAUS) program.

It is important to assess the evidence in all these sources of data as they are known to diverge occasionally[1] and not independently of the business cycle conditions[2]. Moreover, the recent data from the latter two sources is subject to future revisions, which are occasionally substantial.

[1] See, e.g., Bowler and Merisi (2006), Abraham, Haltiwanger, Snadusky, and Spletzer (2009).
[2] See, e.g., Hall (2008), Hagedorn and Manovskii (2011).

All three data sources show robust employment growth since the residents of North Carolina lost access to federally financed unemployment benefits. Over the same period there were significant declines in the unemployment rate and the number of people unemployed. The evidence on the size of the labor force is mixed, as the CPS indicates a large increase while LAUS a substantial but statistically insignificant decrease.

In the last section of this Note we discuss whether available evidence is supportive of the arguments that (1) the dominant macroeconomic effect of unemployment benefit extensions is to stimulate the economy by increasing the level of aggregate demand, and (2) the reduction in unemployment is mainly due to unemployed individuals stopping the job search and dropping out of the labor force. The observed sizable employment growth in North Carolina over the past six months seems to contradict both arguments. Further, we provide evidence that the reduction of unemployment benefits in North Carolina increases employment, job openings and labor force and decreases unemployment relative to her neighbors.

These conclusions are, of course, only suggestive and subject to the disclaimer above.

2 Labor Force Statistics from the Household Survey (CPS)

Table 1: Labor Force Statistics from the Household Survey (CPS)

Date:	Unemp. Rate	Unemp. Level	Employment Level	Labor Force Level	Employment Polpulation Ratio	Labor Force Participation Rate
2012 12	10.1	458780	4074639	4533420	65.2	72.6
2013 1	11.5	515347	3972064	4487411	63.3	71.5
2013 2	9.6	419353	3960124	4379477	62.1	68.7
2013 3	9.6	417452	3952589	4370041	63.6	70.3
2013 4	9.3	407835	3963476	4371311	63.6	70.2
2013 5	9.3	407345	3995574	4402919	64.6	71.2
2013 6	8.1	358646	4059181	4417827	65.3	71.1
2013 7	8.3	369001	4071220	4440221	65.3	71.3
2013 8	7.0	310522	4113063	4423585	66.5	71.5
2013 9	7.6	344246	4156993	4501239	66.2	71.6
2013 10	7.6	352413	4254380	4606793	68.0	73.6
2013 11	6.8	310212	4282261	4592473	67.5	72.4
2013 12	6.4	295784	4333506	4629290	67.7	72.3
			Change from June 2013 to December 2013			
	-1.7	-62862	274325	211463	2.4	1.2

Note - Authors' calculations from the Monthly Current Population Survey. Sample restricted to those aged 16-65. Data are seasonally adjusted with an X-12 ARIMA model.

Observations. Table 1 indicates that the implementation of the reforms was followed by:

1. A substantial decline in the number of unemployed workers and in the unemployment rate.
2. A substantial increase in the employment level and in the share of population that is employed.
3. A strong increase in the labor force (sum of employment and unemployment) and in the fraction of workers working or looking for work in the total population.[3]

To better interpret these findings, in Figures 1 through 4 we plot the key series for a longer time period and also for four states bordering North Carolina: Georgia, South Carolina, Tennessee and Virginia. This helps isolate the effect of the reform from other potentially confounding factors, such as shocks to a region's economy. The evidence in the figures suggests that North Carolina stands out among its neighbors in the improvement in its labor market performance since its unemployment insurance system was reformed.[4]

[3]Using the standard formula for the Binomial distribution, we estimate the standard errors for monthly figures to be around 0.6% for the unemployment rate, 1.1% for the employment-population ratio, and 1.0% for the labor force participation rate. Given these standard errors, a change in these statistics is deemed statistically significant if it is larger than 2.0% for the labor force participation rate, 2.1% for the employment-population ratio, and 1.1% for the unemployment rate. The changes in the CPS that we document over the period June 2013 to December 2013 suggest that the declines in the unemployment rate and the rise in the employment-population ratio are statistically significant. However, the increase in the labor force participation rate appears to be insignificant.

[4]The scope for improvement is probably smaller in Virginia relative to the two Carolinas as it has a substantially better performing labor market throughout the period.

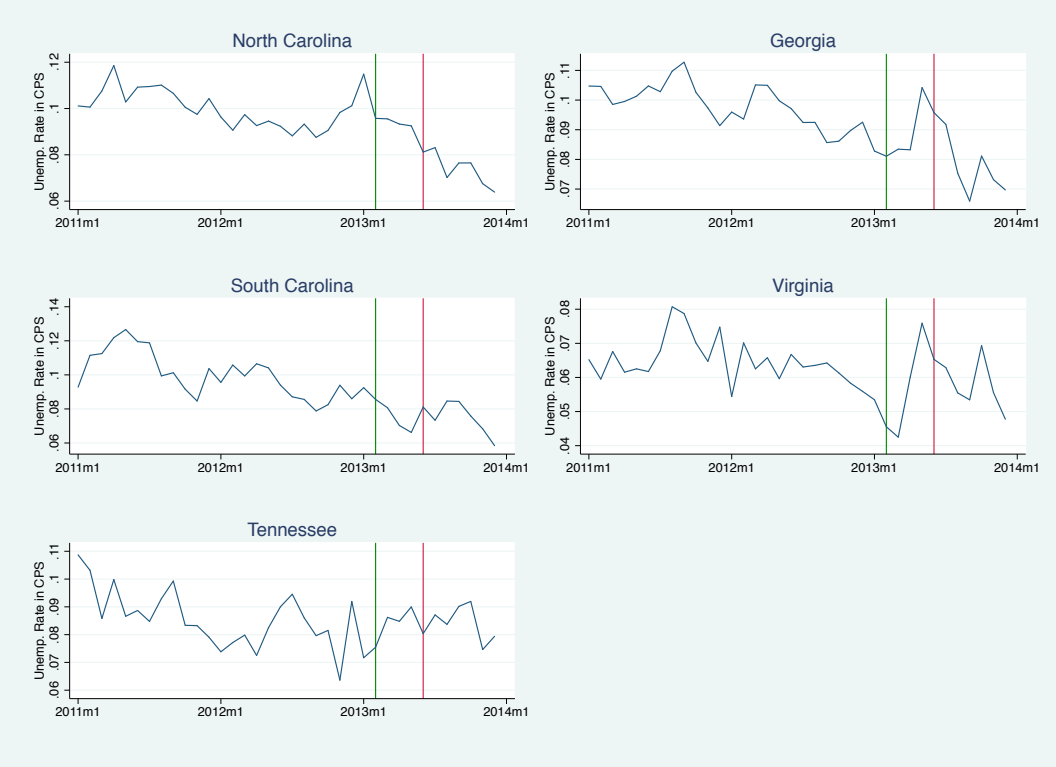

Figure 1: Unemployment Rate from Household Survey (CPS).

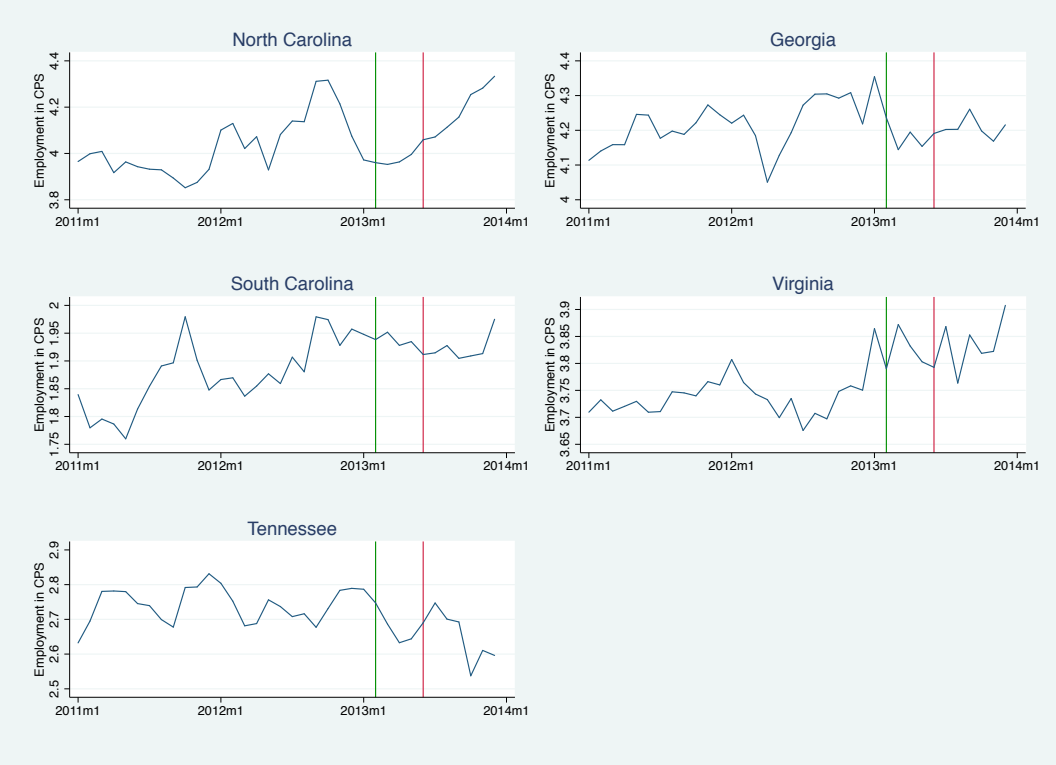

Figure 2: Employment from Household Survey (CPS).

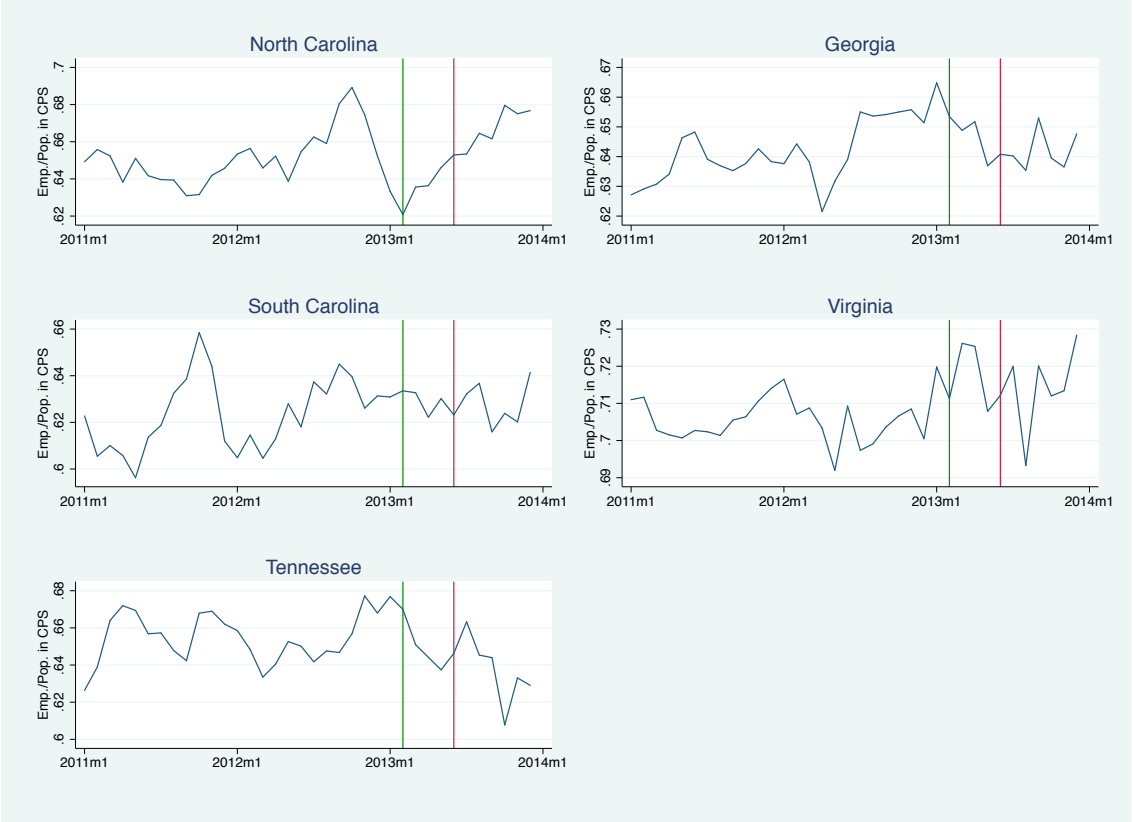

Figure 3: Employment to Population Ratio from Household Survey (CPS).

Figure 4: Labor Force Participation Rate from Household Survey (CPS).

3 Labor Force Statistics from the Establishment Survey (CES)

Table 2: Nonfarm Payroll Employment from the Establishment Survey (CES)
(Thousands of Employees)

Date:	Total	Total Private	Goods Producing	Service Providing	Service Providing Private	Government
2012 12	4,032.3	3,317.6	618.5	3,413.8	2,699.1	714.7
2013 01	4,046.4	3,330.8	623.9	3,422.5	2,706.9	715.6
2013 02	4,048.9	3,332.1	623.6	3,425.3	2,708.5	716.8
2013 03	4,048.5	3,332.7	618.4	3,430.1	2,714.3	715.8
2013 04	4,047.8	3,331.4	616.5	3,431.3	2,714.9	716.4
2013 05	4,042.7	3,328.2	613.7	3,429.0	2,714.5	714.5
2013 06	4,045.4	3,331.5	616.2	3,429.2	2,715.3	713.9
2013 07	4,054.0	3,344.2	617.7	3,436.3	2,726.5	709.8
2013 08	4,056.9	3,352.7	616.5	3,440.4	2,736.2	704.2
2013 09	4,064.8	3,355.9	614.9	3,449.9	2,741.0	708.9
2013 10	4,090.6	3,375.3	617.0	3,473.6	2,758.3	715.3
2013 11	4,085.7	3,371.9	615.8	3,469.9	2,756.1	713.8
2013 12	4,096.8	3,382.5	616.1	3,480.7	2,766.4	714.3
	Change from June 2013 to December 2013					
	51.4	51.0	-0.1	51.5	51.1	0.4

Observations.

1. Evidence from the establishment survey confirms a substantial increase in employment in North Carolina following the unemployment insurance reform.

2. The increase in payroll employment reported by the sample of North Carolina employers is smaller than the increase in employment reported by workers in the household survey.

3. The increase in employment driven by the private service sector.

4. A comparison of the growth in employment between North Carolina and the adjacent states in Figure 5 reveals a similar growth in the post-reform period between the two Carolinas and Georgia, which is much faster growth than in Tennessee and Virginia.

5. Results in Table 3 reveal a mild tendency toward higher weekly wages and earnings and little change in hours.

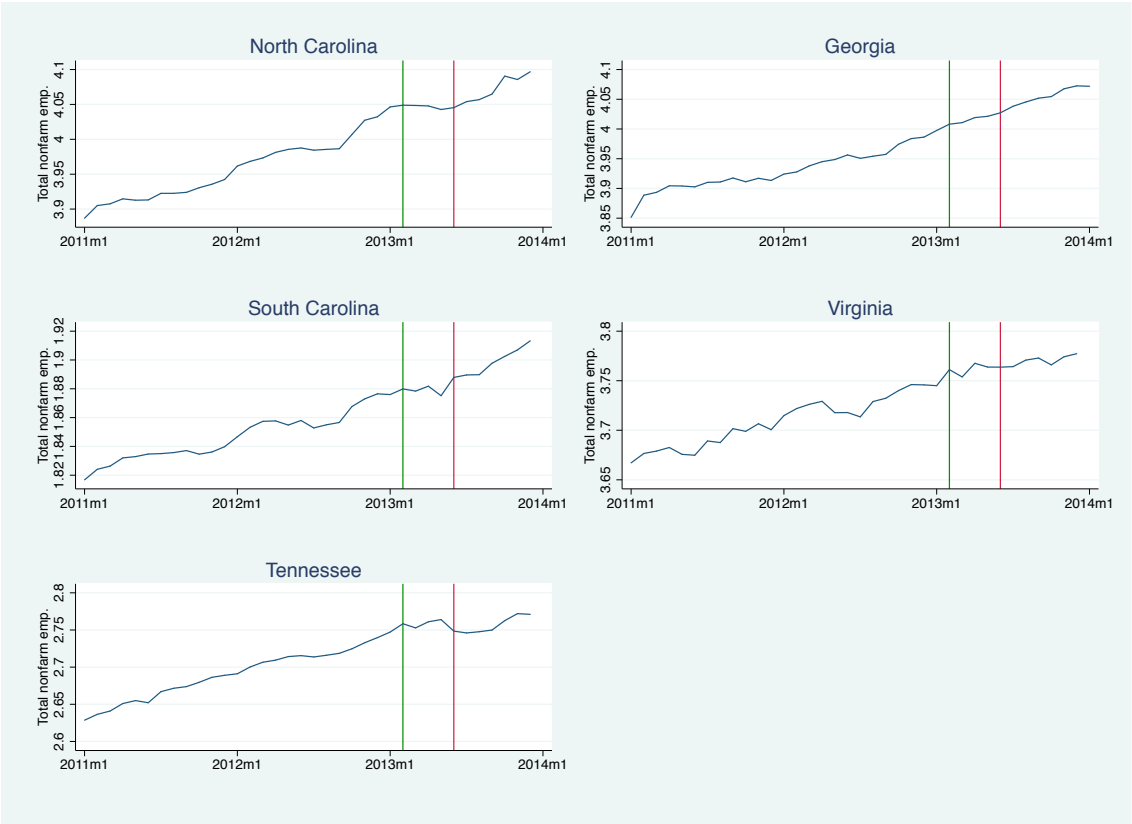

Figure 5: Nonfarm Payroll Employment from the Establishment Survey (CES).

Table 3: Nonfarm Private Payroll Hours and Earnings from the Establishment Survey (CES) (Not Seasonally Adjusted)

Date:	Average Weekly Hours	Average Hourly Earnings	Average Weekly Earnings
2012 12	34.8	22.10	769.08
2013 01	34.0	21.92	745.28
2013 02	34.4	21.84	751.30
2013 03	34.5	21.75	750.38
2013 04	34.4	21.64	744.42
2013 05	34.3	21.55	739.17
2013 06	34.9	21.68	756.63
2013 07	34.2	21.53	736.33
2013 08	34.6	21.53	744.94
2013 09	35.0	21.71	759.85
2013 10	34.4	21.57	742.01
2013 11	34.6	21.70	750.82
2013 12	34.7	21.91	760.28
	Change from June 2013 to December 2013		
	-0.2	0.23	3.65

Note - Series id: SMU37000000500000002, SMU37000000500000003, SMU37000000500000011.

4 Labor Force Statistics from the BLS LAUS program.

Table 4: Labor Force Statistics from the BLS LAUS program.

Date:	Unemployment Rate	Unemployment Level	Employment Level	Labor Force Level
2012 12	9.4	447033	4320201	4767234
2013 01	9.5	453425	4322922	4776347
2013 02	9.4	446828	4318025	4764853
2013 03	9.2	434546	4307301	4741847
2013 04	8.9	419016	4302496	4721512
2013 05	8.8	416171	4303455	4719626
2013 06	8.8	416314	4292251	4708565
2013 07	8.9	418228	4278652	4696880
2013 08	8.7	409178	4275100	4684278
2013 09	8.3	390298	4287928	4678226
2013 10	8.0	371749	4294465	4666214
2013 11	7.4	343611	4314502	4658113
2013 12	6.9	322689	4333615	4656304
		Change from June 2013 to December 2013		
	-1.9	-93625	41364	-52261

Note - Series id: LASST37000003, LASST37000004, LASST37000005, LASST37000006.

Observations.

1. Large decline in unemployment following the implementation of the reform. The decline is almost the same (-1.8 pp vs -1.9 pp) as what is found in the household survey. Over longer periods, the dynamics of unemployment in LAUS is comparable to that observed in the household survey.[5]

2. The increase in employment is sizable, although smaller in magnitude than in the establishment survey, and much smaller than in the household survey.

3. LAUS program estimates a large, but statistically insignificant, decline in the labor force following the reform. This stands in sharp contrast to the direct observations in the household survey. We could not establish the reasons for this discrepancy based on our conversations with the BLS.

4. Figures 6 through 9 indicate that in LAUS data trends in employment, unemployment, and labor force are fairly similar between North and South Carolinas.

[5]Unemployment in LAUS data is less volatile as it is smoothed using an econometric model. Publicly available detailed description of the procedure can be found in "Local Area Unemployment Statistics Program Manual," U.S. Department of Labor, Bureau of Labor Statistics, March 13, 2003.

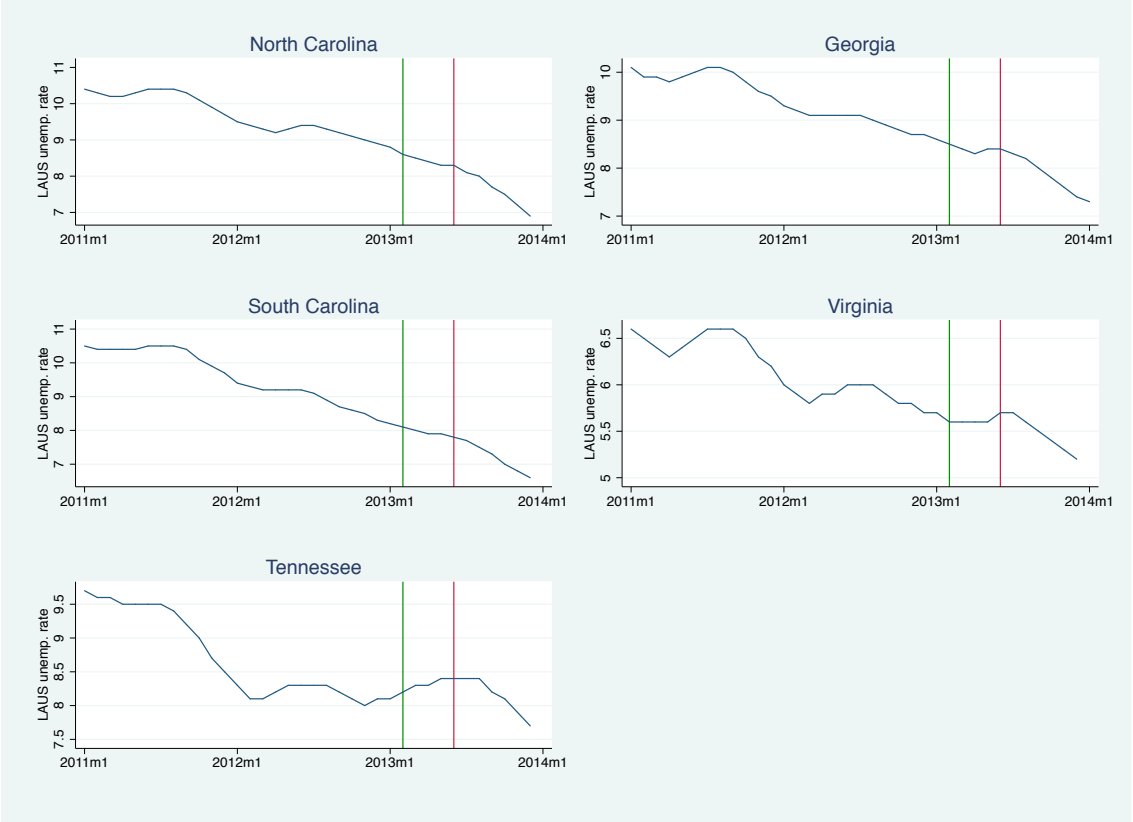

Figure 6: Unemployment Rate in BLS LAUS Data.

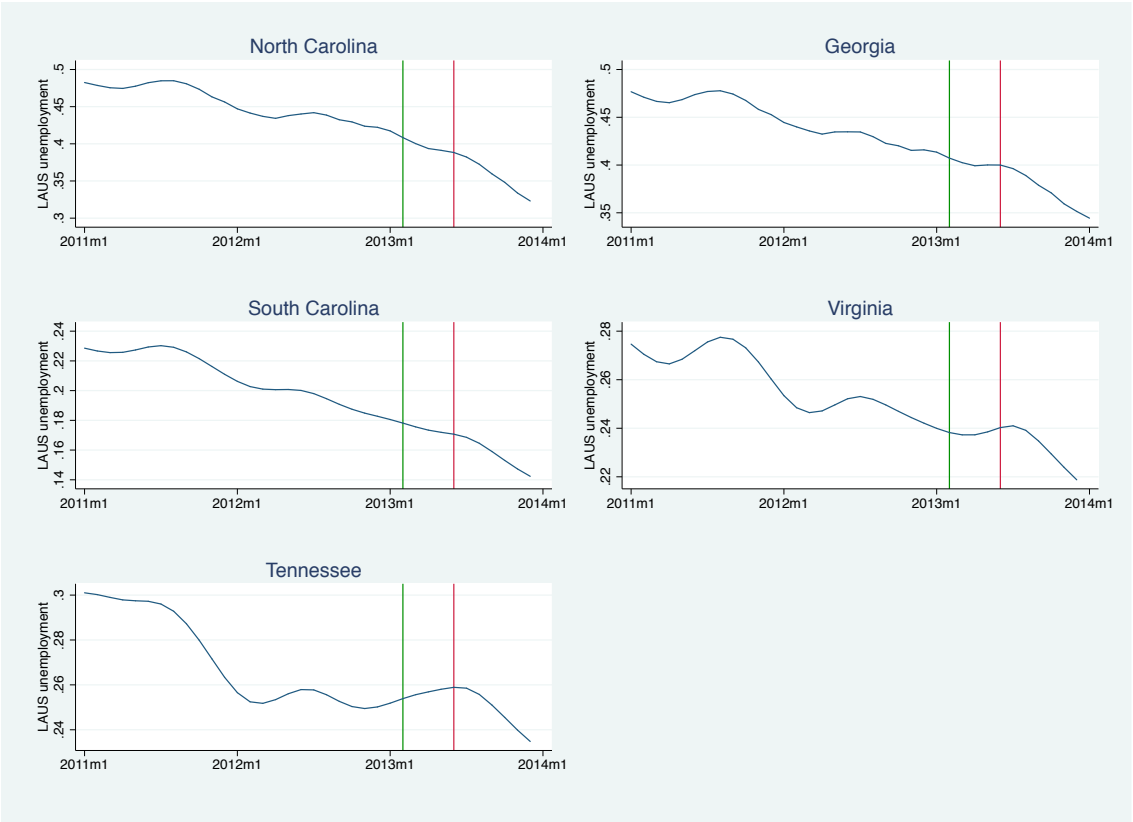

Figure 7: Unemployment in BLS LAUS Data.

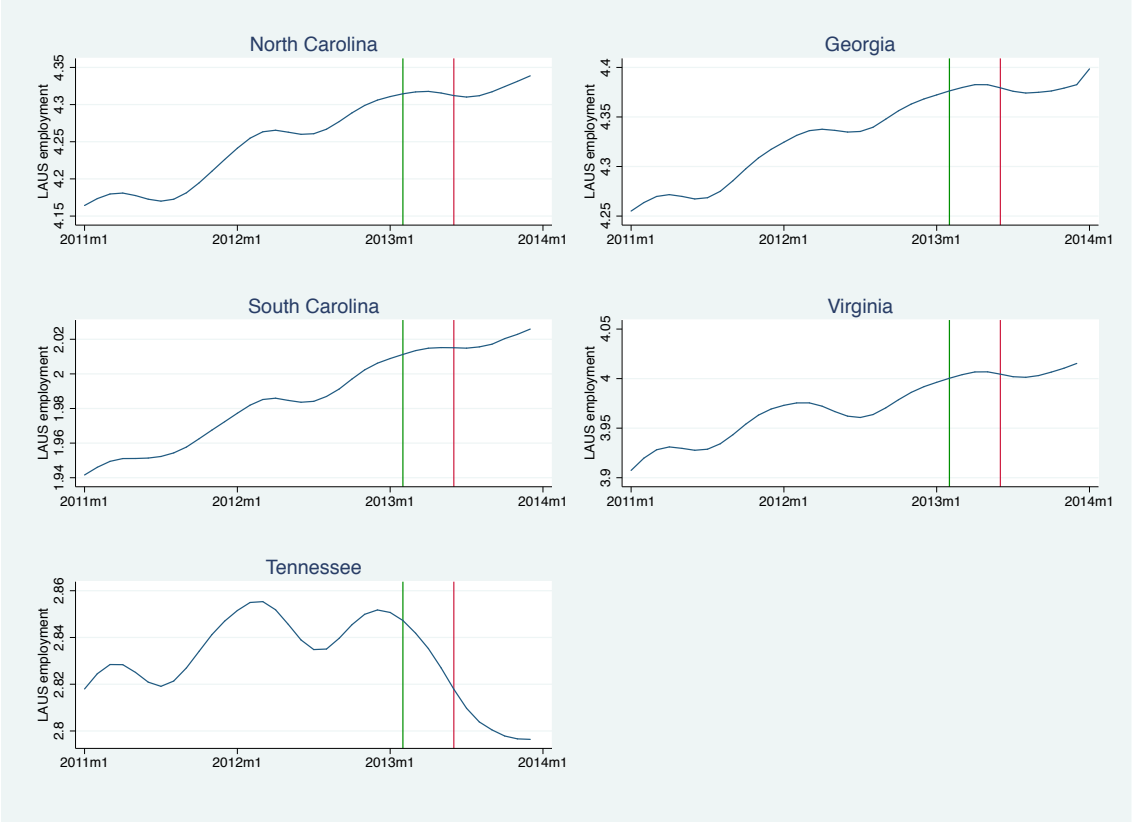

Figure 8: Employment in BLS LAUS Data.

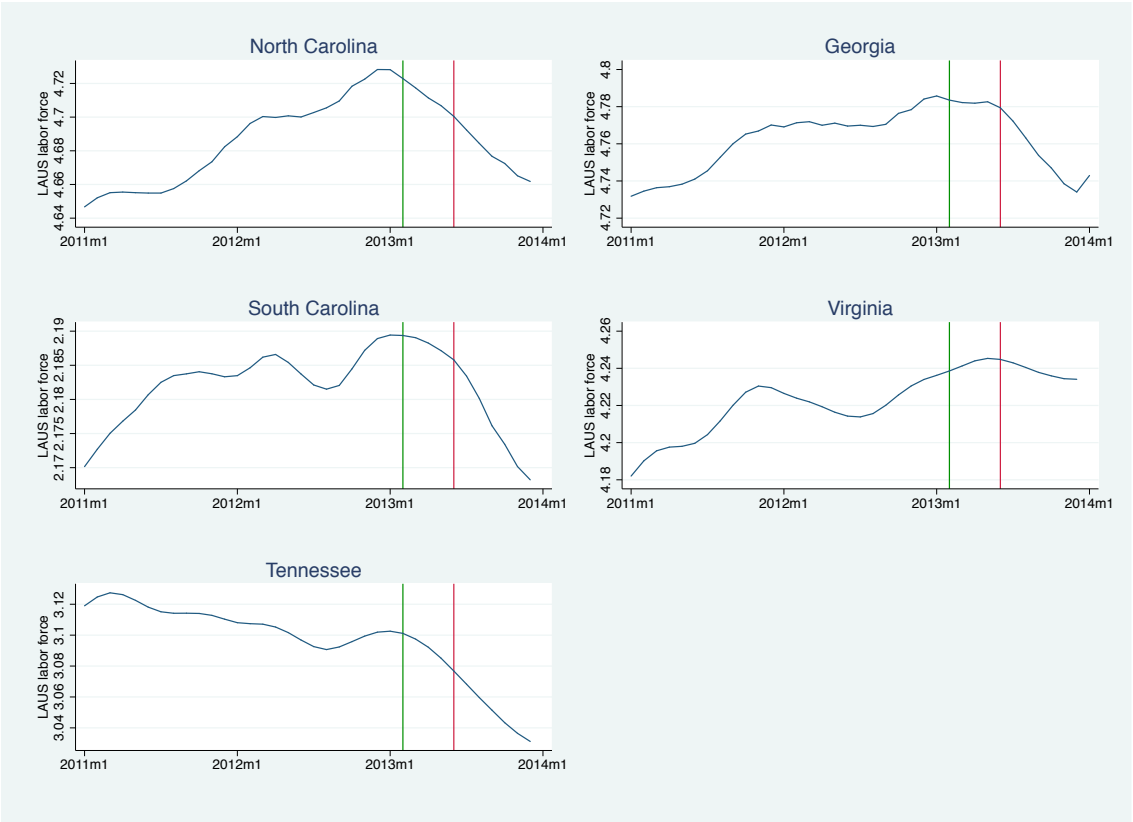

Figure 9: Labor Force in BLS LAUS Data.

5 Analysis

While the presentation of the data and graphs are meant to be illustrative of the relative labor market performance of North Carolina and her neighbors after the reform, we also provide a basic analysis of the data. We measure to what extent the differences in employment, job openings and unemployment between North Carolina and her neighbors can be explained by the difference in the number of weeks of unemployment benefits available.

Our main empirical specification is as follows:

$$\Delta_p X_t = \alpha \Delta_p b_t + \eta_p + \epsilon_{p,t}$$

where X_t denotes the labor market variable of interest (e.g. unemployment) at time t, b_t is the number of weeks available at time t, η_p is a state-pair specific fixed effect and $\epsilon_{p,t}$ is the error term. Δ_p denotes the difference between North Carolina and state p, Thus, we have a balanced panel of four state pairs.

We cannot bring this specification directly to the data, however, as the coefficient α would be biased because of the mechanical correlation between the unemployment rate and the number of weeks of benefits available (federal and state law specify that the number of weeks of benefits depend on the state unemployment rate). Unlike changes in benefit durations in other periods, the variation in North Carolina on July 1, 2013 was mainly driven by fiscal considerations and is arguably exogenous to the North Carolina labor market at that time. Thus we instrument $\Delta_p b_t$ with an indicator variable $I(t \geq \text{July 1, 2013})$ and run a two-stage least squares estimation with pair fixed effects. The results of the regressions are displayed in Tables 5-7. Note that across all data sets, higher benefits are associated with lower employment and higher unemployment. The evidence is supportive of the effects of benefits found in Hagedorn, Karahan, Manovskii, and Mitman (2013). However, as noted previously, one should be careful interpreting results based on one state over a small time window. Further, one should use caution interpreting the values of the coefficients since this specification does not control for expectations (e.g. over future policy changes) nor provide a sharp economic interpretation, and we thus refer to Hagedorn, Karahan, Manovskii, and Mitman (2013) for a full discussion of these issues.

6 Some Tentative Conclusions

The weight of the evidence reported here seems to point to several conclusions. As discussed in the Introduction, these have to be interpreted with caution as preliminary data describing a few months' experience of a single state is not sufficient to draw scientifically definitive conclusions.

Table 5: Effects of Benefits in CPS

	Unemployment	E/P Ratio	Labor Force	LF Participation
Weeks of Benefits	0.1071**	-0.0261***	-0.0408***	-0.0177***
	(0.042)	(0.007)	(0.007)	(0.006)
Observations	540	540	540	540

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6: Effects of Benefits in CES

	Payroll	Private Payroll
Weeks of Benefits	-0.0111***	-0.0125***
	(0.003)	(0.003)
Observations	540	540

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7: Effects of Benefits in LAUS

	Employment	Labor Force	Unemployment
Weeks of Benefits	-0.0177***	-0.0141***	0.0473**
	(0.003)	(0.003)	(0.022)
Observations	540	540	540

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

1. A common assertion in the literature is that "...positive effects on aggregate demand of UI and EUC are ... the key channel through which EUC can aid economic growth and the recovery."[6]

   The direct effect of cutting off the inflow of federally financed benefits is a sizable decline in disposable income for North Carolina. Indeed, the payments to unemployed workers financed by the federal government declined by hundreds of millions of dollars. North Carolinians are still responsible for servicing the federal debt. In case of an **inadequate level of aggregate demand**, one might expect this to lead to a decline in employment. Yet, the **evidence** to date is **not supportive** of this idea and instead appears to support the findings in Hagedorn, Karahan, Manovskii, and Mitman (2013) and Mitman and Rabinovich (2013) that the negative effects of unemployment benefit extensions on job creation decisions of employers dominate any potential stimulative effect that some ascribe to such policies.

   The evidence on the relative unimportance on the stimulus to aggregate demand in North Carolina becomes even more striking when the sectoral composition of post-reform employment growth is considered. One would expect a decline in the aggregate demand in North Carolina to affect most severely the non-tradeable service sector within the state. In contrast, all of the employment growth in North Carolina was in services, according to the CES.

2. Another common claim in the policy literature is that extended unemployment benefits keep unemployed workers in the labor force and encourage job search. A negative consequence of reducing the length of benefit eligibility is then a reduction in the total search effort.

   Such assertions are not grounded in economic theory and are not supported by available empirical evidence. If unemployed were actually searching and that search was productive, stopping their search must have led to a *decline* in employment, at least relative to the other states. On the contrary, **employment has risen** according to all available sources of data. Moreover, the size of the labor force declined in South Carolina, just as it did in LAUS data for North Carolina. At the minimum, this suggests that at least a sizable part of the decline in the labor force observed in LAUS data for North Carolina might not be related to the reform of the unemployment insurance system. Finally, although it is statistically insignificant, the decline in the labor force in North Carolina apparent in the current release of BLS LAUS data (subject to future revisions) is in sharp contrast to the *increase* in the labor force in North Carolina measured directly in the household survey.

   Are the **new jobs** created in NC somehow **inferior**? We see no evidence for that in the available data on hours, employment and wages.

[6] "The Economic Benefits of Extending Unemployment Insurance," report by the Council of Economic Advisers and the Department of Labor, December 2013.

Bibliography

Abraham, K. G., J. C. Haltiwanger, K. Snadusky, and J. Spletzer (2009): "Exploring Differences in Employment between Household and Establishment Data," Working Paper 14805, National Bureau of Economic Research.

Bowler, M., and T. L. Merisi (2006): "Understanding the Employment Measures from the CPS and CES Survey," *Monthly Labor Review*, 129(2), 23–38.

Hagedorn, M., F. Karahan, I. Manovskii, and K. Mitman (2013): "Unemployment Benefits and Unemployment in the Great Recession: The Role of Macro Effects," NBER Working Paper 19499.

Hagedorn, M., and I. Manovskii (2011): "Productivity and the Labor Market: Co-Movement over the Business Cycle," *International Economic Review, Forthcoming*, 52(3), 603–619.

Hall, R. (2008): "Cyclical Movements along the Labor Supply Function," in *Labor Supply in the New Century*, ed. by K. Bradbury, C. L. Foote, and R. K. Triest, pp. 241–278. Federal Reserve Bank of Boston.

Mitman, K., and S. Rabinovich (2013): "Do Changes in Unemployment Insurance Explain the Emergence of Jobless Recoveries?," mimeo, University of Pennsylvania.