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Abstract

Although more rapid development is a primary motivation behind city-county consolidations, relatively few empirical papers explore the actual impact of consolidation on development. This study uses the synthetic control method (SCM) to examine the long-term impact of city-county consolidations on per capita income, population, and employment. The results from the three cases explored indicate that consolidation does not guarantee development and can actually have negative effects. Additionally, the effects vary based upon the county, time horizon, and development measure.

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1 Introduction

Although the United States has a rich history of local governments, there have been increasing calls for consolidation into regional forms of government. Reformers argue that consolidated governments would improve the efficiency of service delivery, solve equity problems, internalize spillovers, and foster economic development. One of the most widely discussed forms of local government consolidation is city-county consolidations. Although only 39 of the 166 attempted city-county consolidations in the United States since 1815 have successfully been implemented (Martin and Schiff, 2011), attempts at city-county consolidations remain popular. In the wake of the Great Recession, city-county consolidations have been seen as a way of economizing on government expenses and stimulating economic development.[1] A current example is the planned consolidation of the city of Syracuse with Onondaga County in upstate New York. A central motivation for consolidation is to foster economic development and reverse the trend of a declining population and workforce by establishing a broader tax base and a countywide land use plan (Sugiyama, 2017).

Although development is routinely cited as a motivation for consolidation, relatively little empirical research explores the actual development impacts of city-county consolidations. Among the small but growing literature are Feiock and Carr (1997), Carr and Feiock (1999), Carr et al. (2006), and Faulk and Schansberg (2009) who all use time-series or panel models to demonstrate that consolidation typically has no effect on employment or the number of businesses. Our paper contributes to the literature in two ways. First, we employ the synthetic control method (SCM), which is a generalization of the difference-in-differences model (Abadie et al., 2010). The model is well-suited to analyze the impact of unique events, such as city-county consolidations, over time. While previous studies compare growth in consolidated counties to state-wide trends or comparison counties defined in an ad hoc way, the SCM systematically defines a comparison case by weighting all counties in a state based upon a set of key predictor variables for development. Second, in addition to analyzing employment, we also include per capita personal income and population. With the rise of consumer cities (Glaeser et al., 2001; Glaeser and Gottlieb, 2006), these other factors of development beyond business activity and employment are increasingly important. A better understanding of the real development impacts of city-county consolidations will both contribute

[1] For a thorough treatment of the theoretical reasons for and against local government consolidations as well as an analysis of the case-study evidence, see Hall et al. (2016).

to the academic discussion and inform local governments considering consolidation.

2 Context

2.1 Theory

Proponents of local government consolidation point to three reasons for why consolidation promotes development. First, consolidation improves the comprehensive planning capacity of local governments and reduces socially inefficient competition. Larger governments can establish a specialized department focusing on economic development, which improves coordination and expertise (Fleischmann and Green, 1991). Rather than smaller governments competing with each other, a single larger government can facilitate cooperation between different regions. Second, consolidation simplifies the regulatory process. The result is reduced uncertainty and lower transaction costs for business activity (Carr and Feiock, 1999). For example, instead of having to obtain permits from multiple government agencies, with a unified government, a business deals with a single agency (Feiock and Carr, 1997). Third, consolidation allows for large regional development projects. If the costs of a large development project are borne within the boundaries of a city but the benefits spill over into a larger region, projects that are socially optimal will not be undertaken (Feiock et al., 1993). Additionally, consolidation expands the tax base, which helps in financing large development projects such as mass transit systems and sports stadiums (Feiock and Carr, 1997).

Although consolidation is argued to increase development, fragmentation could actually increase development. Kim and Jurey (2013) summarize the chain of events between fragmentation and development. First, fragmented governments promote competition between jurisdictions. Second, under competitive pressure, each jurisdiction seeks to reduce tax burdens while providing attractive amenities. Lastly, the appealing combination of low taxes and valuable services draws in new businesses and residents, which increases the growth rate for jobs, population, and income.

2.2 Empirics

Ultimately, the effect of city-county consolidations on development is an empirical question. The first paper to empirically examine the impact of a city-county consolidation over time is Feiock and Carr (1997). They use an interrupted time series design to analyze the growth in the number

of manufacturing, retail, and service establishments both before and after the Jacksonville-Duval County consolidation in Florida. Their results suggest that consolidation had no impact on growth in any sector. Expanding upon their previous work, Carr and Feiock (1999) assess the development impacts of nine city-county consolidations between 1967 and 1984. Using the same time series approach, they find no evidence of more rapid growth than statewide trends in the number of manufacturing, retail, and service establishments. With nine different cases, they are able to conclude that consolidation's non-impact on development is not sensitive to the extent of consolidation or differences between large and small metropolitan areas.

Subsequent research has expanded to include different sizes of businesses, employment, and payroll. Using an interrupted time series approach, Carr et al. (2006) find no effect of the Louisville-Jefferson County and the Lexington-Fayette County consolidations in Kentucky on employment and payroll for different-sized firms in the manufacturing, retail, and service sectors. Most recently, Faulk and Schansberg (2009) use a panel approach and find that consolidation in the Augusta-Richmond County, Kansas City-Wyandotte County, and Lafayette City-Lafayette Parish cases did not have a statistically significant impact on employment or the number of businesses. Although the existing empirical literature differs from this paper by using time series or panel methods instead of the synthetic control method, we explore the same city-county consolidations. Understanding the context of each consolidation is important for interpreting the synthetic control results.

2.3 Major City-County Consolidation Cases

The three consolidations examined are Lafayette City-Lafayette Parish Louisiana, Athens-Clarke County Georgia, and Augusta-Richmond County Georgia. These three cases[2] were selected because of the relatively populous size of the consolidated areas, their prominence in discussions about city-county consolidations, and consolidation in the 1990s, which allows us to observe the long term impacts of consolidation.

[2]Ideally, the Kansas City-Wyandotte County Kansas and Louisville-Jefferson County Kentucky consolidations would also be included. However, since these counties have the largest populations in their states, the SCM is not able to generate an appropriate synthetic for either of these cases.

Lafayette City-Lafayette Parish, Louisiana

As shown in Figure 1, Lafayette Parish is located in south-central Louisiana and is the second smallest parish in the state by land area. As shown in Table 1, Lafayette Parish is substantially wealthier and more populous than the average Louisiana parish. The parish's economic and population growth started in the 1940s with the city's ideal location for the petroleum industry. Since then, Lafayette's economy has diversified and become a regional technology and retail center. Unlike in the analytical model of Leland and Thurmaier (2005), the push for consolidation was not the result of a crisis climate. Instead, consolidation was viewed as the practical next step in completing the ongoing process of expanding the city's boundaries through annexation.

With support from the Greater Lafayette Chamber of Commerce and an overall positive outlook for greater professionalism and growth opportunities in a consolidated government, the consolidation passed by a wide margin. At the time of the consolidation referendum[3] in 1992, the parish had a population of 171,468 and the city 106,977 with 67% of city residents and 49% of residents living outside the city supporting the referendum. After the successful referendum, there was a four year transition period until the consolidated government became fully operational in 1996.

Athens-Clarke County, Georgia

As shown in Figure 2, Clarke County is located in northeastern Georgia. Despite being the smallest in area of Georgia's 159 counties, it is one of Georgia's most populous counties. At the time of the consolidation referendum[4] in 1990, the county had a population of 88,058 with the population about evenly split between the city and unincorporated areas. Many of the county's residents are students at the University of Georgia, and as shown in Table 2, the county has a substantial larger fraction of college graduates and government employees than the average county in Georgia. With a growing university, the county has enjoyed stable economic growth over time.

Unlike with the Lafayette case, historically there has been resistance to consolidating Athens and Clarke County. Consolidation referenda failed in 1966, 1969, 1972, and 1982. With the 1990 referendum, in order to ensure support from public employees in both the county and city governments and expedite the consolidation process, the consolidation charter included a provision

[3]For additional details, see Bacot (2004).
[4]For additional details, see Fleischmann (2000) and Durning et al. (2004).

guaranteeing that no public employee would lose their job. The provision also helped ease tensions between the two governments, which had been escalating in recent years and was a primary impetus for consolidation. Consolidation was viewed as a way to eliminate the competition between the governments in the provision of services and instead promote cooperation. The elimination of duplicate services was expected to increase efficiency and create a more conducive environment for economic development. Overall, the push for consolidation was not due to a crisis but a desire for greater professionalism and good governance.

With the pro-development outlook for the consolidation, both business leaders and the Quality Growth Task Force established by the local chamber of commerce were leading supporters of the consolidation. Support for the consolidation was evenly split between city and unincorporated residents with 57.5% of city residents and 59.9% of unincorporated residents supporting the referendum. Unlike with the Lafayette, Louisiana case, there was not a long transition period, and the consolidated government became operational in 1991.

Augusta-Richmond County, Georgia

As shown in Figure 2, Richmond County is located in eastern Georgia on the border with South Carolina. At the time of the consolidation referendum[5] in 1995, the county population was 200,027 with about $\frac{1}{4}$ of residents within Augusta city boundaries. Leading up to the referendum, the city of Augusta had experienced declines for several decades. With 'white flight' wealthy white residents living in the city moved to suburbs in unincorporated areas of the county or to other counties. With the decline in population and changing demographics, the city's tax base was shrinking and bankruptcy was looming. Leland and Thurmaier's (2005) crisis model of consolidation applies to the Augusta-Richmond County case as Augusta's severe financial crisis was a primary impetus for the successful 1995 referendum. In addition to avoiding bankruptcy and the subsequent service cuts and layoffs, the consolidation was pursued in order to eliminate the duplication of services and improve their overall quality.

Prior to the successful consolidation, there had been four failed referenda between 1971 and 1988. Thus, as with the Athens-Clarke County case, the 1995 consolidation charter ensured public employee job protection and wage equalization. In the midst of the crisis situation, the consolidation

[5]For additional details, see Fleischmann (2000) and Campbell et al. (2004).

referendum passed by a wide margin with 77% support among city voters and 62% support from voters in unincorporated areas. As with the other Georgia case, the consolidated government was swiftly implemented and fully operational the year after the referendum.

3 Synthetic Control Method

The Synthetic Control Method (SCM) invented by Abadie and Gardeazabal (2003) and further developed by Abadie et al. (2010) and Abadie et al. (2015) is a unique technique for investigating the specific effects of a particular social shock or institutional change. Government policy is a common shock so following Abadie et al. (2010) more recent research such as Marcus and Siedler (2015) and Chaurey (2016) continues to employ the SCM to evaluate the effect of a wide variety of government policies. The SCM works by calculating a synthetic counterfactual which could not happen and has not happened in the real world. Formally, the synthetic control method finds the optimal weights for each region in the donor pool by minimizing

$$(X_1 - X_0W)'V(X_1 - X_0W) \tag{1}$$

where X_1 is a $(K \times 1)$ vector of pretreated values of K economic growth predictors for the treated region. X_0 is a $(K \times J)$ matrix containing the values of the same variables for the J possible control regions in the donor pool. V is a diagonal matrix with nonnegative components, and the values of the diagonal elements of V reflect the relative importance of the different growth predictors. The weights vector W^* is chosen to minimize Equation 1, subject to $w_j \geq 0 (j = 1, 2, ..., J)$ and $\sum_{j=1}^{J} w_j = 1$. The weights vector W^* defines the combination of all the other regions in the donor pool (Abadie and Gardeazabal, 2003). More specifically, in this research, the social shock is the city-county consolidation, the treated region is a county with a successful consolidation, and the treated year is the vote year of the consolidation.

There is a trade-off between overfitting and potentially unintended bias when doing the donor pool selection. Abadie and Gardeazabal (2003) mention that synthetic control results depend on the selection of regions which plausibly have similar economic characteristics of the one with the specific intervention; Abadie et al. (2015) also emphasize that restricting the donor pool could

help avoid interpolation biases. Another important reason to restrict the donor pool is to avoid overfitting (Grier and Maynard, 2016). However, at the same time, the donor pool selection might lead to unintended bias. In our research, we choose all other counties within the same state but without a consolidation as the control regions in the donor pool[6]. Using a large number of counties within the donor pool follows Munasib and Rickman (2015) who analyze the shale gas and oil boom using the SCM. Limiting the donor pool to counties within the same state is consistent with Faulk and Schansberg (2009) who use same-state counties as the comparison group in their panel model. As they point out, local government functions and structures are determined by state governments and thus vary across states. Therefore, including only counties within the same state ensures comparable local governments between the county under consideration and counties in the donor pool.

Further, in order to avoid mistaking random differences as real effects, a placebo test is necessary. The test investigates the other regions not experiencing the consolidation shock by the same method and checks whether it has a similar "treated effect" or not, but without the treated region in their donor pools (Abadie and Gardeazabal, 2003; Abadie et al., 2010). Since the population scale of every county within the same state varies, the relative difference between a county and its synthetic counterfactual rather than the absolute difference may provide a better comparison. Therefore, inspired by Adhikari and Alm (2016), we calculate a comparable relative difference by dividing the absolute difference by the synthetic counterfactual.

4 Data

Data for the outcome variables of total employment, per capita personal income, and population are collected at the county level for each year between 1970 and 2010 from the U.S. Bureau of Economic Analysis (BEA). Per capita personal income is adjusted for inflation and is reflected in real 2010 dollars. In addition to the outcome variables, we also collected data for three types of

[6]Another trade-off with donor pool selection is between having an appropriate comparison group and potential spillover effects (Gobillon and Magnac, 2016). Areas adjacent to the treated region are natural controls but could experience spillover effects from the treated region. For example, if consolidation leads to better development prospects, businesses and residents from surrounding counties could move to the newly consolidated county. This effect would violate the SCM assumption that the shock only affects the treated region. Thus, following Pfeifer et al. (2016) who drop from the donor pool municipalities directly adjacent to their treated regions, in addition to our main results, we also perform an analysis with counties adjacent to the consolidated counties dropped from the donor pool. The results are similar and available upon request.

predictor variables in order to construct the synthetic control.

First, following the literature on city and county growth such as Leichenko (2001), Higgins et al. (2006), and Duranton and Puga (2014), we include the following demographic variables: the % of the adult population completing a 4-year degree, % foreign born, % black, % white, and % of the population 65 or older. The stock of college graduates is especially relevant as Glaeser and Saiz (2004) demonstrate that the proportion of college graduates living in a city is a strong predictor of income, productivity, and population growth. Additionally, % foreign born is relevant as Ottaviano and Peri (2006) find that cities with a greater diversity of countries of origin among residents have higher wages and productivity. The demographic variables all come from the U.S. Census Bureau decennial census data and are thus only available every 10 years. In order to have complete data for every year, we use simple linear interpolation for the years in between censuses.

The second set of predictor variables capture the natural environment and rural-urban environment. The natural amenity attractiveness of counties is able to explain a substantial amount of county-level employment and population growth (McGranahan, 1999). Thus, we collected data from the USDA Economic Research Service (ERS) Natural Amenities Scale. The scale accounts for the natural amenities that most people prefer such as warm and sunny winters, mild and low-humidity summers, proximity to water, and topographic variation. Since natural amenities change little over time, each county's score remains the same over time. We also include each county's rural-urban continuum code from the ERS because measures of urbanization and proximity to urban areas are associated with differences in income levels (Partridge et al., 2009) and population changes (Partridge et al., 2008). The ERS rural-urban continuum code is well suited to control for these effects because it captures both population levels and adjacency to metropolitan areas. The rural-urban continuum code was updated in 1974, 1983, 1993, and 2003. To avoid having years with missing data, each year that is not a reporting year is assigned the same value as the reported value from that decade. For example, all years in the 1970s are assigned the reported value from 1974.

Lastly, following several other synthetic control papers such as Abadie and Gardeazabal (2003) and Munasib and Rickman (2015), we include variables to reflect industry composition. Using SIC codes for 1970-2000 and NAICS codes from 2001-2010 from the BEA, we include the proportion of people employed in the government, manufacturing, and retail sectors. Several counties do not

have sector data available for each year over the sample. After dropping these counties as well as other consolidated counties, the donor pool for Georgia contains 120 counties while the donor pool for Louisiana contains 48 counties.

Descriptive statistics of Lafayette and the other 48 counties in Louisiana with complete data available are reported in Table 1. Descriptive statistics of Clarke, Richmond, and the other 120 counties in Georgia with complete data available are reported in Table 2.

5 Results

5.1 Lafayette, LA

The SCM results for Lafayette, LA are shown in Figure 3. The figure shows pre-consolidation and post-consolidation[7] comparisons of actual to synthetic control per capita personal income, population, and total employment estimates. The relatively close fit between Lafayette and the synthetic during the pre-consolidation years suggests that the synthetic Lafayette is an appropriate counterfactual for Lafayette. Post-consolidation actual per capita personal income, population, and total employment all exceed the synthetic control estimates, suggesting that consolidation had a broadly positive impact on development.

The placebo tests indicate strong evidence for a positive effect of consolidation in all three areas of development. The placebo tests with constant values are shown in Figure 4 while the placebo tests with percentage are shown in Figure 5. Each black line is the difference between the actual and synthetic Lafayette in terms of per capita personal income, population, and total employment. Each gray line is the difference between the respective donor county and its synthetic control in terms of per capita personal income, population, and total employment. Since in each case, the black line lies above the mass of gray lines centered around zero during the post-consolidation period, there is strong evidence that consolidation had a positive effect on development in Lafayette both in magnitude and percentage terms.

One explanation for the development success of the Lafayette consolidation is with regional development projects, which is discussed in the theory subsection. As described in Bacot (2004),

[7] Although the consolidated government was not fully functional until 1996, the year of the referendum (1992) is used as the treatment year because between 1992 and 1996 there was a transition to the consolidated government.

shortly after the consolidation, the new government was able to bring in a $229 million bond for needed road and drainage improvements. Following consolidation there were many infrastructure improvements, such as the $45 million Camellia Boulevard road and bridge project meant to decrease traffic congestion in the city. More infrastructure spending following consolidation is consistent with Solé-Ollé (2006) who finds evidence of spillovers arising from residents in neighboring jurisdictions crowding into another jurisdiction's facilities. In addition to benefitting from larger, regional infrastructure improvements that may not have been implemented without consolidation, Lafayette also benefitted from improved coordination. Instead of competing as separate jurisdictions, the consolidated government became more successful at obtaining funds for projects from state and federal governments (Bacot, 2004).

5.2 Clarke, GA

The SCM results for Clarke, GA are shown in Figure 6. The figure shows pre-consolidation and post-consolidation comparisons of actual to synthetic control per capita personal income, population, and total employment estimates. The close fit between Clarke and the synthetic during the pre-consolidation years suggests that the synthetic Clarke is an appropriate counterfactual for Clarke. Post-consolidation actual levels for all three variables are less than the synthetic control estimates, suggesting that consolidation had a broadly negative impact on development.

However, the placebo tests provide only weak support that the negative effects are non-random. The placebo tests with constant values are shown in Figure 7 while the placebo tests with percentage are shown in Figure 8. Since with population and total employment, the black line is centered around zero in the middle of the distribution of gray lines during the post-consolidation period, there is no evidence that consolidation had a non-random negative effect on population and total employment in either magnitude or percentage terms. However, there is weak evidence supporting the negative effect of consolidation on per capita personal income.

The result of negative impacts is consistent with previous case-study research. In surveys of county and city public employees both before and after consolidation, Durning (1995) finds that public employees expected the consolidated government to be inferior in terms of efficiency and economic growth and that their views worsened after the consolidation. Selden and Campbell (2000) find that the government's overall operating expenditure increased after consolidation, although

certain areas of government expenditure declined. A more conducive growth environment brought about by more efficient government services was not realized. The results from the synthetic control method of no effect or a negative effect of consolidation on development are consistent with the previous findings of no change or decreases in the efficiency of service provision.

5.3 Richmond, GA

The SCM results for Richmond, GA are shown in Figure 9. The figure shows pre-consolidation and post-consolidation comparisons of actual to synthetic control per capita personal income, population, and total employment estimates. There is a close fit between Richmond and the synthetic during the pre-consolidation years except for the years immediately leading up to the referendum. Due to the severe financial crisis leading up to the referendum, this gap is expected. Overall, the pre-consolidation years for Richmond and the synthetic are closely matched. Post-consolidation actual levels for all three variables are less than the synthetic control estimates, suggesting that consolidation had a broadly negative impact on development. However, the negative impact of consolidation on per capita personal income was short-lived since the actual Richmond levels return back to those of the synthetic within 10 years of the consolidation.

The placebo tests indicate that the negative effects of consolidation on per capita income, population, and total employment vary in their distinction from random effects. The placebo tests with constant values are shown in Figure 10 while the placebo tests with percentage are shown in Figure 11. There is no evidence that consolidation negatively affected per capita personal income either in absolute magnitude or percentage terms in a way that differs from random. However, there is strong evidence that consolidation negatively impacted population and moderate evidence for a negative impact on total employment.

The lack of evidence to support a positive effect of consolidation on development is consistent with Taylor et al. (2017) who use an interrupted time series approach to analyze the impact of consolidation in three cases including Richmond. They find that the total amount of government spending increased after consolidation, although not in a statistically significant way. The consolidated government did not provide more efficient services to create an environment conducive to more rapid development.

5.4 Robustness Check

The main results use donor pools of all other counties in the same state that are not consolidated and that have complete data. However, counties that consolidate may differ in significant ways from counties that never attempt consolidation. In Leland and Thurmaier's (2005) analytical model, consolidation attempts stem from crisis situations and perceptions that existing political structures are incapable of promoting subsequent development. Thus, including in the donor pools counties that have never attempted consolidation could produce negatively biased effects of consolidation on development. The negative effects found in both Georgia cases could simply be due to ongoing and anticipated development problems that other areas never attempting consolidation did not face.

In order to control for this potential bias, we repeat the analysis for Athens-Clarke County and Augusta-Richmond County[8] but construct the donor pool based upon the Georgia counties with unsuccessful consolidations shown in Table 3. After dropping Athens, Clarke, and Muscogee because of subsequent successful consolidations and two other counties with incomplete data, the new donor pool consists of 11 counties.

Figures 12 and 15 display the SCM results for Athens-Clarke County and Augusta-Richmond County. With the exception of population in Clarke County, the results with the 11 county donor pool match the main findings. Post-consolidation actual levels tend to be less than the synthetic control estimates, confirming the negative effect of consolidation on development. However, as with the main findings, the results are not always different from random. Figures 13, 14, 16, and 17 display the placebo tests. Matching the main findings, for Clarke County, consolidation has an effect differing from random only with per capita personal income. For Richmond County, consistent with the main findings, there is no non-random effect with income but there is with population and employment. Based upon the SCM results and placebo tests, the results are robust to the inclusion of only counties with failed consolidation attempts in the donor pool.

6 Conclusion

Previous research has used time series and panel approaches to estimate the impact of city-county consolidations on employment and business activity. Collectively, this small but growing literature

[8] We do not re-examine Lafayette because there are no failed consolidation attempts in Louisiana (Murphy, 2012).

finds that consolidation has no impact on development. Using the synthetic control method, we contribute to the literature by exploring the impact of consolidation on per capita personal income, population, and employment in Lafayette City-Lafayette Parish Louisiana, Athens-Clarke County Georgia, and Augusta-Richmond County Georgia. The results reveal that development impacts vary across consolidations.

Lafayette experienced a strong increase in all three areas of development following consolidation. However, both Georgia consolidation cases experienced declines. The impact of consolidation on development can also vary based upon time horizon and how development is measured. For example, in the Augusta-Richmond case, although per capita personal income initially falls after consolidation, it returns to its expected level within 10 years. Additionally, for the Augusta-Richmond case, the effect on per capita personal income is not different from random but for population and total employment consolidation has a strong negative effect. Overall, the results indicate that consolidation does not guarantee development, even when consolidation is not sought as a solution to a crisis. Although Lafayette experienced development increases after consolidation, Athens-Clarke County did not. Additionally, consolidation is not a guaranteed solution to crises. Based upon the negative findings with the Augusta-Richmond case, present-day local governments seeking consolidation as a way of reversing negative development trends, such as the proposed Syracuse-Onondaga County consolidation, should be careful about viewing consolidation as a panacea for development problems.

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Tables and Figures

Table 1: Summary Statistics of Lafayette and Louisiana

Lafayette	**Mean**	**Std. Dev.**	**Min.**	**Max.**
Per Capita Income ($)	30629	7170	17495	46581
Population	169875	29667	111926	222147
Total Employment	113907	36255	48423	175259
Post-secondary (%)	22.41	4.14	13.50	29.00
Foreign Born (%)	2.29	0.81	0.55	4.11
Black (%)	22.57	1.65	20.24	25.76
White (%)	75.43	2.94	69.37	78.75
Elderly Population (%)	8.15	1.46	5.86	10.28
Government Sector (%)	10.87	2.01	8.76	16.38
Retail Sector (%)	16.21	3.01	10.55	19.37
Manufacturing Sector (%)	4.68	0.59	3.64	5.59
Rural&Urban Code	2.76	0.44	2	3
Natural Amenities Scale	-2.47	0	-2.47	-2.47
Louisiana	**Mean**	**Std. Dev.**	**Min.**	**Max.**
Per Capita Income ($)	23073	6114	11369	57726
Population	63387	74408	7725	470047
Total Employment	28262	40598	2469	275497
Post-secondary (%)	11.45	5.17	3.30	34.62
Foreign Born (%)	1.19	1.16	0	11.04
Black (%)	29.77	13.46	3.73	69.03
White (%)	68.55	13.09	28.93	95.11
Elderly Population (%)	11.70	2.89	4.22	18.51
Government Sector (%)	20.72	9.78	8.76	86.70
Retail Sector (%)	14.00	3.56	4.11	24.30
Manufacturing Sector (%)	12.51	8.22	0.59	45.74
Rural&Urban Code	4.54	2.13	0	9
Natural Amenities Scale	-0.37	0.88	-2.47	1.63

Table values reflect yearly averages from 1970-2010. The Louisiana subsection of the table includes the average from all 49 counties. Thus, the total observations for Lafayette is 41 while for Louisiana it is 2009.

Table 2: Summary Statistics of Clarke, Richmond and Georgia

Clarke	**Mean**	**Std. Dev.**	**Min.**	**Max.**
Per Capita Income ($)	24229	2807	18258	27847
Population	89569	15658	65494	117469
Total Employment	61680	14903	36101	86058
Post-secondary (%)	36.40	3.52	27.80	39.80
Foreign Born (%)	5.44	3.09	1.70	10.92
Black (%)	24.98	2.33	19.65	27.25
White (%)	70.33	5.57	61.89	79.61
Elderly Population (%)	7.95	0.72	5.94	8.63
Government Sector (%)	27.01	1.74	23.53	30.29
Retail Sector (%)	15.40	3.43	10.06	21.00
Manufacturing Sector (%)	17.44	5.28	7.84	24.52
Rural&Urban Code	3.49	0.87	3	5
Natural Amenities Scale	-0.71	0	-0.71	-0.71
Richmond	**Mean**	**Std. Dev.**	**Min.**	**Max.**
Per Capita Income ($)	26490	3301	20049	31046
Population	187352	14449	154835	204164
Total Employment	118140	16060	88766	135944
Post-secondary (%)	16.59	2.72	10.90	20.39
Foreign Born (%)	3.10	0.49	1.54	3.59
Black (%)	42.78	7.32	29.93	54.17
White (%)	53.85	8.82	39.70	69.13
Elderly Population (%)	9.56	1.46	6.64	11.33
Government Sector (%)	32.48	4.14	28.16	41.14
Retail Sector (%)	14.40	3.17	8.11	18.35
Manufacturing Sector (%)	11.27	2.96	5.74	15.78
Rural&Urban Code	2	0	2	2
Natural Amenities Scale	0.02	0	0.02	0.02
Georgia	**Mean**	**Std. Dev.**	**Min.**	**Max.**
Per Capita Income ($)	24133	6319	11251	73835
Population	52128	102394	2796	926038
Total Employment	28747	80734	984	959204
Post-secondary (%)	12.10	7.12	2.10	48.58
Foreign Born (%)	1.96	2.60	0	25.60
Black (%)	25.36	16.17	0	67.12
White (%)	72.53	16.16	18.87	99.99
Elderly Population (%)	11.38	2.85	3.17	26.57
Government Sector (%)	17.28	7.88	6.97	80.29
Retail Sector (%)	13.38	3.87	3.84	29.70
Manufacturing Sector (%)	21.60	11.84	0.98	59.87
Rural&Urban Code	5.08	2.64	0	9
Natural Amenities Scale	0.33	0.97	-1.42	3.11

Table values reflect yearly averages from 1970-2010. The Georgia subsection of the table includes the average from all 122 counties. Thus, the total observations for Clarke and Richmond is 41 while for Georgia it is 5002.

Table 3: City-County Consolidation Referenda in Georgia

City/County	**Failed Referenda**	**Successful Referenda**	**11 Counties**
Albany/Dougherty County	1954/1956		Y
Athens/Clarke County	1966/1969/1972/1982	1990	
Augusta/Richmond County	1971/1974/1976/1988	1995	
Brunswick/Glynn County	1969/1987		Y
Columbus/Muscogee County	1962	1970	
Conyers/Rockdale County	1989		Y
Cusseta/Chattahoochee County		2003	
Douglasville/Douglas County	1994		Y
Georgetown/Quitman County		2006	
Griffin/Spalding County	1991/1997		Y
Gainesville/Hall County	2001		Y
Hawkinsville/Pulaski County	2000		
Lakeland/Lanier County	1986		
Macon/Bibb County	1933/1960/1972/1976		Y
Metter/Candler County	1994		Y
Preston/Webster County		2008	
Savannah/Chatham County	1973		Y
Statenville/Echols County		2008	
Tifton/Tift County	1984		Y
Waycross/Ware County	1998		Y

Sources:

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Table 4: Summary Statistics of Clarke, Richmond and the 11 Counties with Failed Referenda in Georgia

Variables	**Mean**	**Std. Dev.**	**Min.**	**Max.**
Per Capita Income ($)	26111	5176	14384	41844
Population	90592	62237	6328	265896
Total Employment	51981	40693	2786	182413
Post-secondary (%)	16.57	7.70	5.10	39.80
Foreign Born (%)	3.03	3.08	0.11	16.16
Black (%)	29.01	13.00	5.43	67.12
White (%)	68.03	13.11	29.59	94.09
Elderly Population (%)	10.73	2.67	5.65	16.43
Government Sector (%)	18.21	6.13	8.38	41.14
Retail Sector (%)	16.01	3.43	8.10	25.31
Manufacturing Sector (%)	16.08	7.88	4.43	44.87
Rural&Urban Code	3.47	2.08	0	7
Natural Amenities Scale	0.42	0.90	-0.71	2.06

Table values reflect yearly averages from 1970-2010. This table includes the average from Clarke, Richmond and the other 11 counties having failed referenda with available data. Thus, the total observations is 533.

Figure 1: Lafayette and Louisiana Map

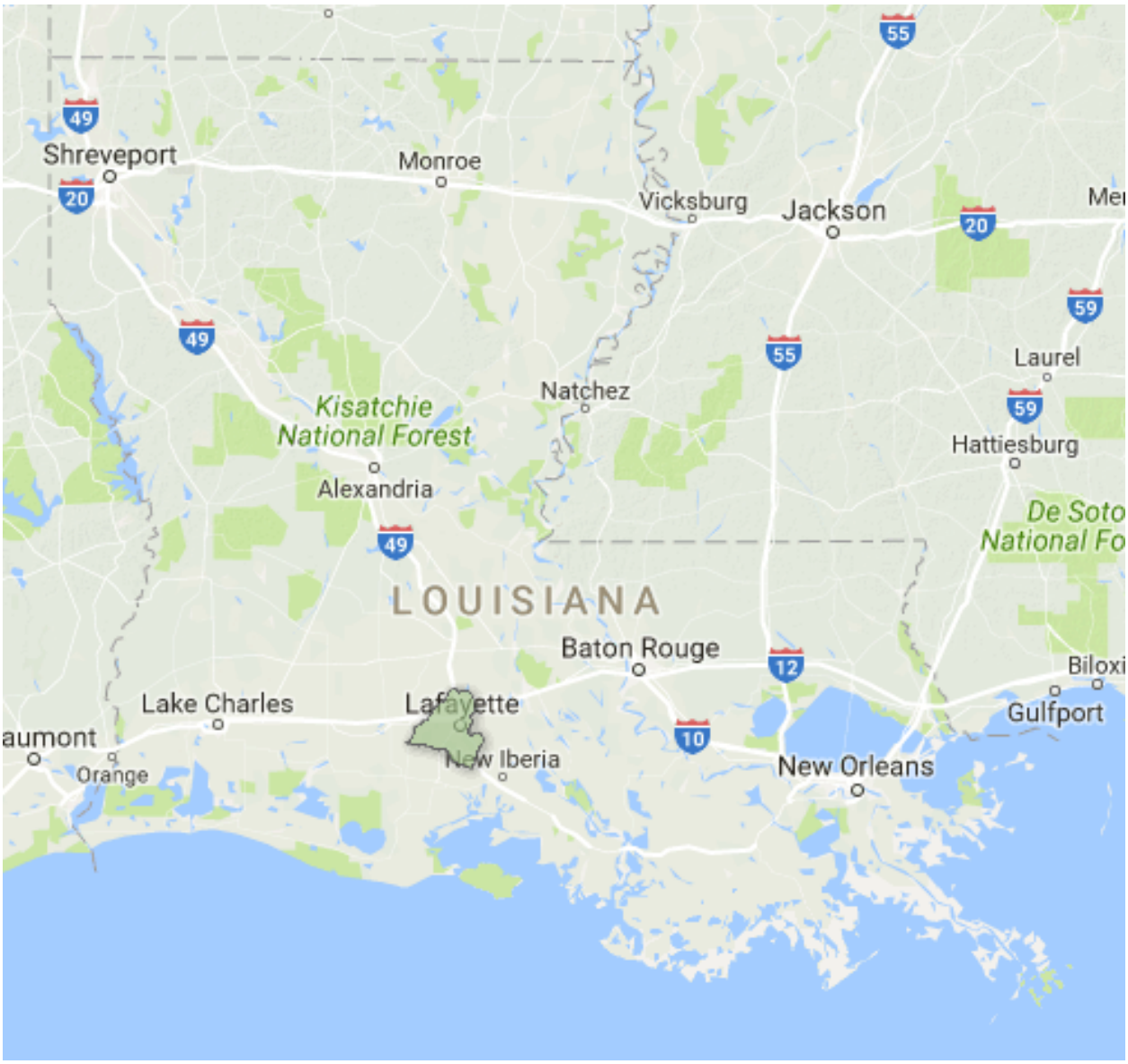

Figure 2: Clarke (Athens), Richmond (Augusta) and Georgia Map

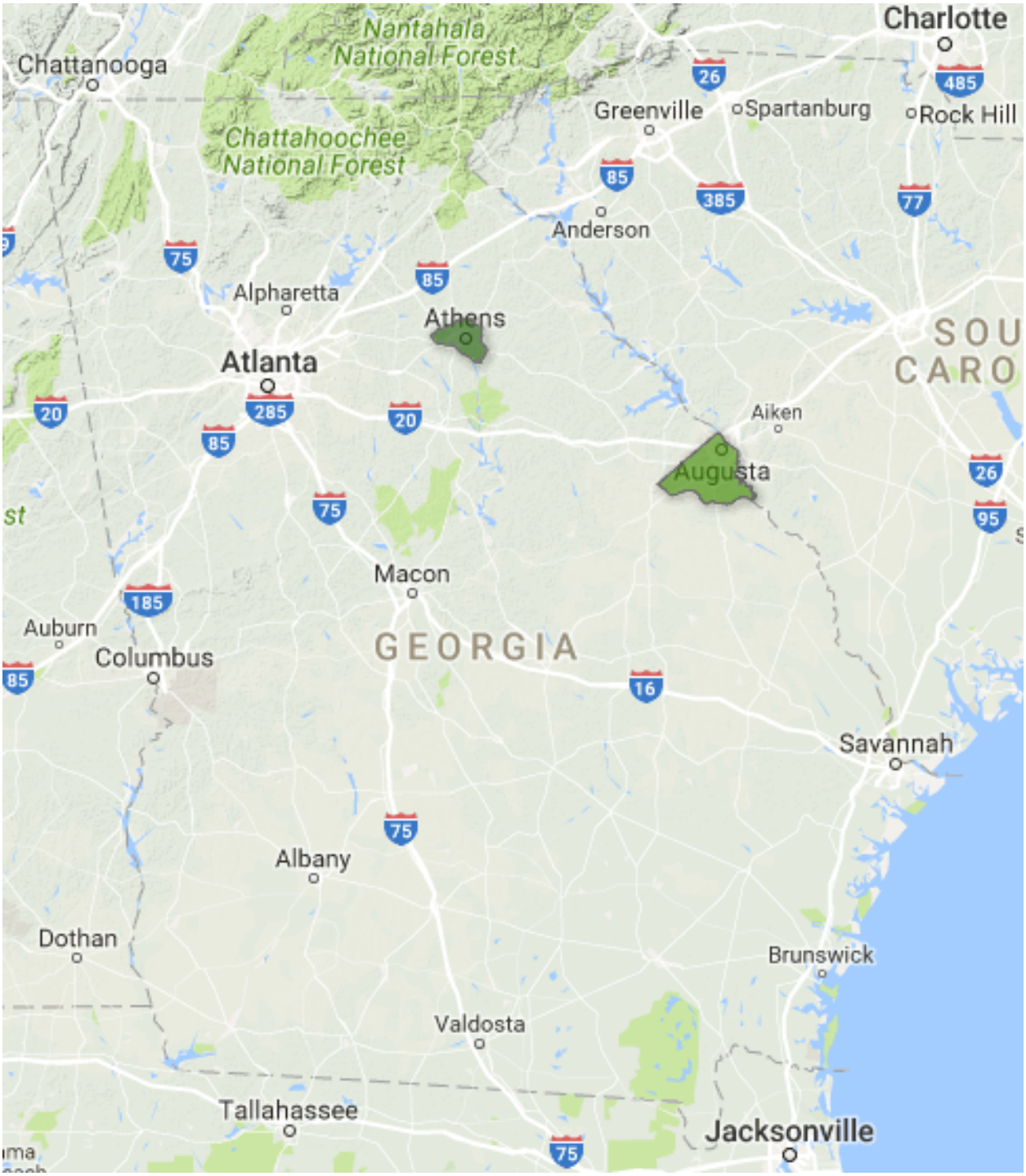

Figure 3: Lafayette and its Synthetic

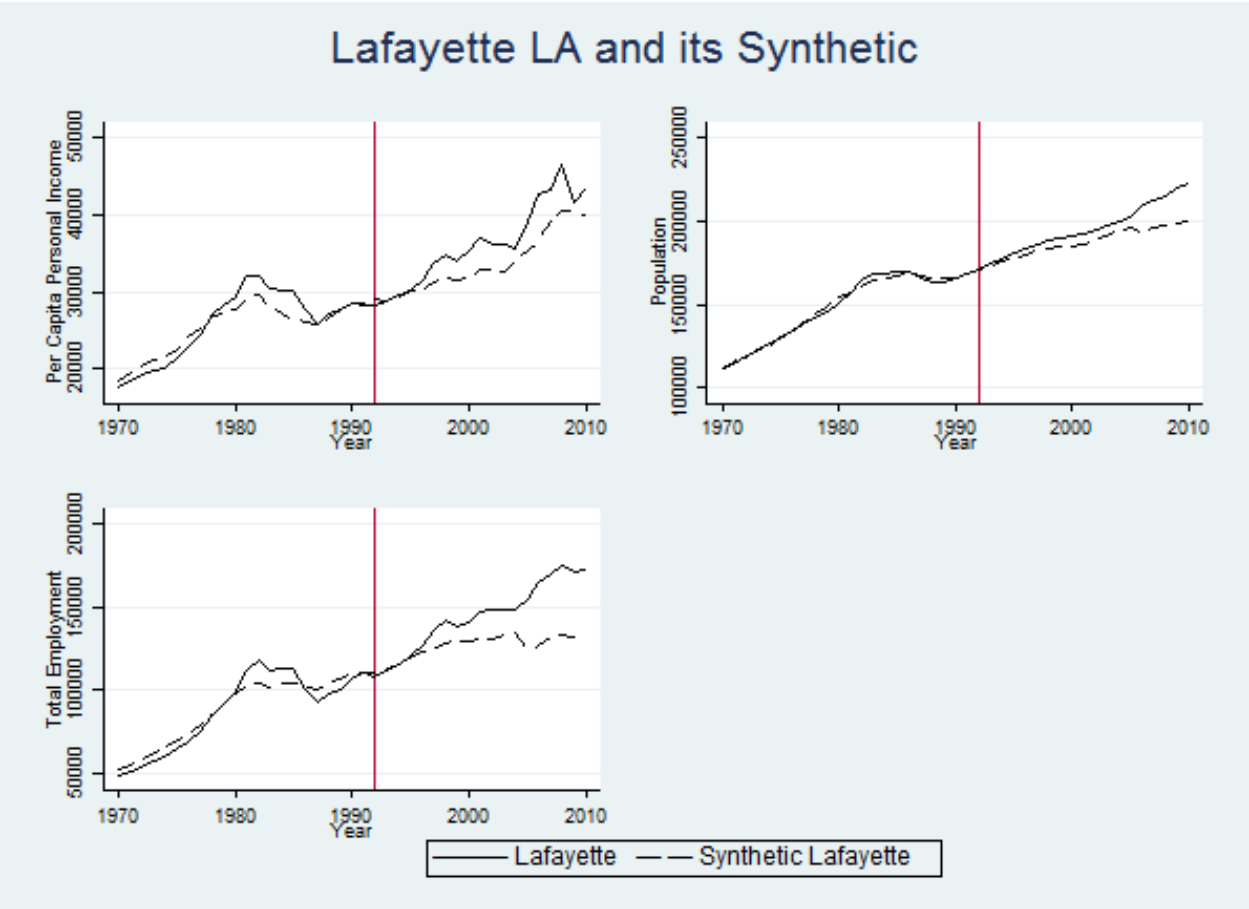

Figure 4: Placebo Tests of Lafayette

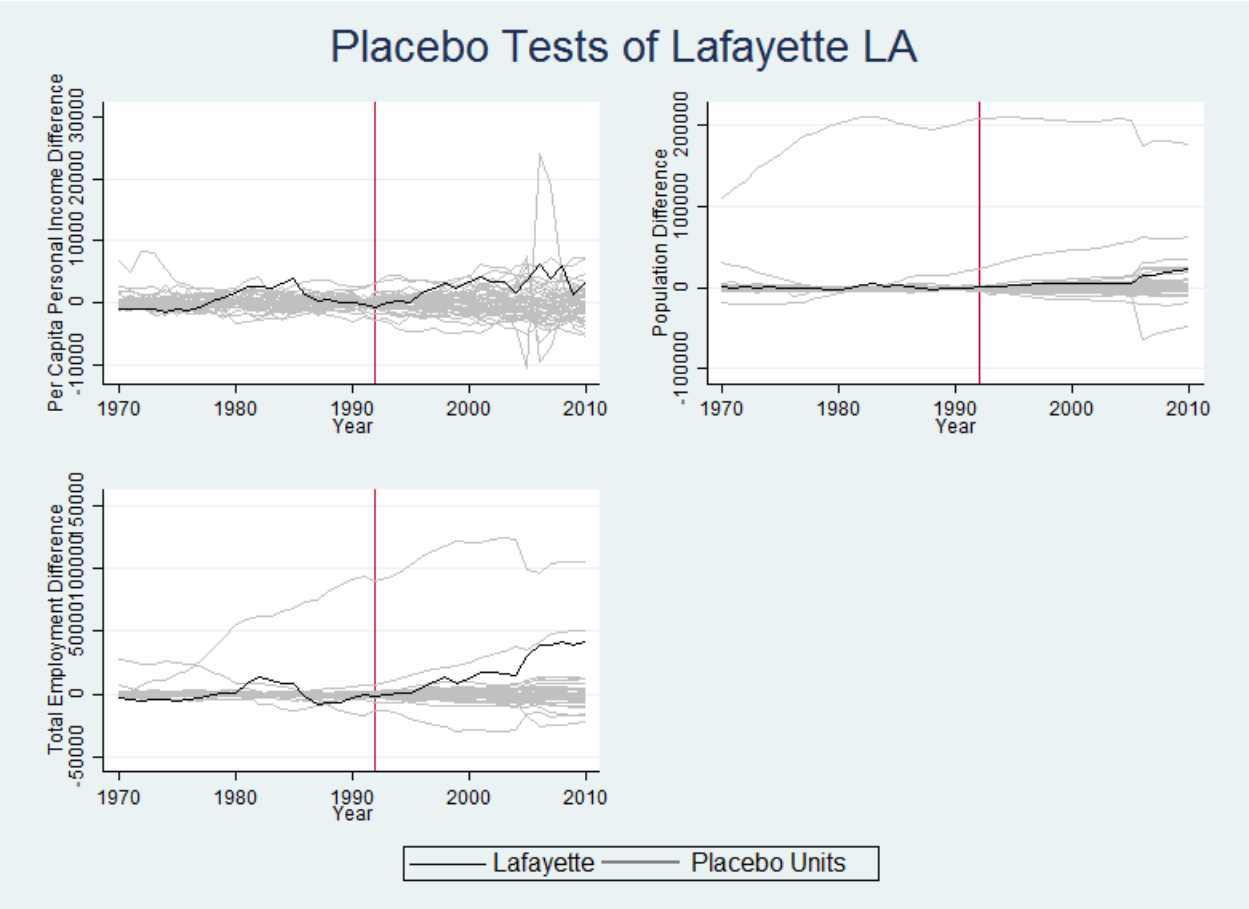

Figure 5: Placebo Tests of Lafayette (Percentage)

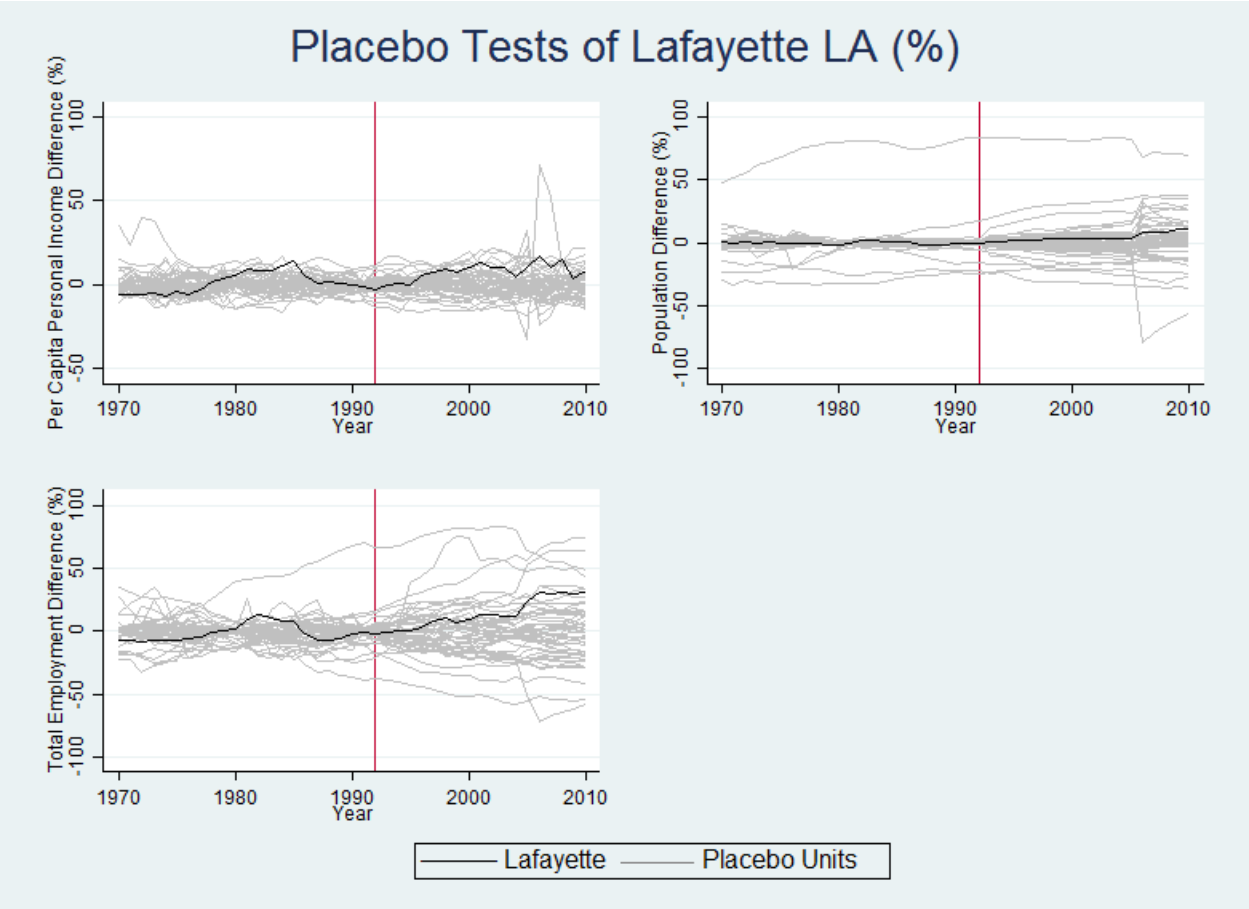

Figure 6: Clarke and its Synthetic

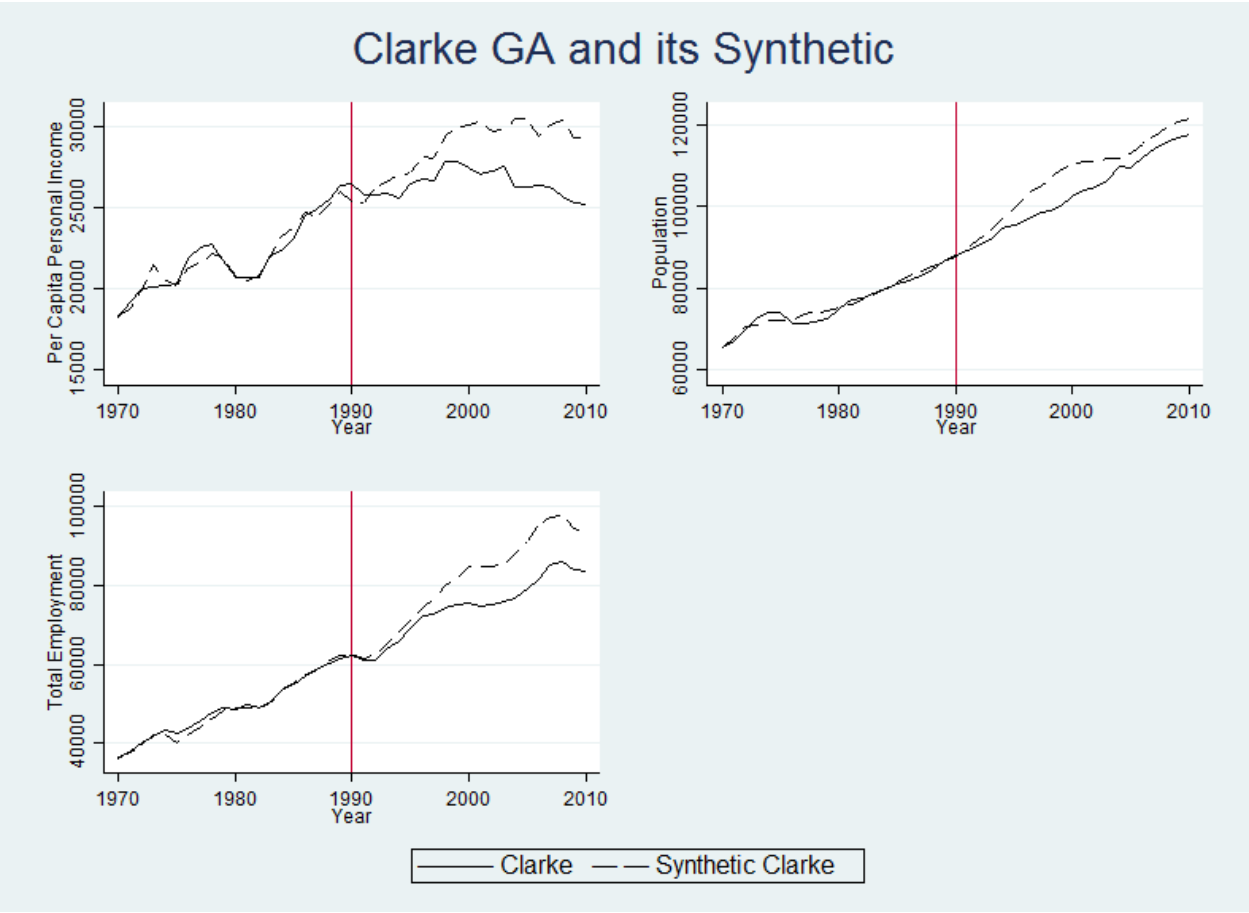

Figure 7: Placebo Tests of Clarke

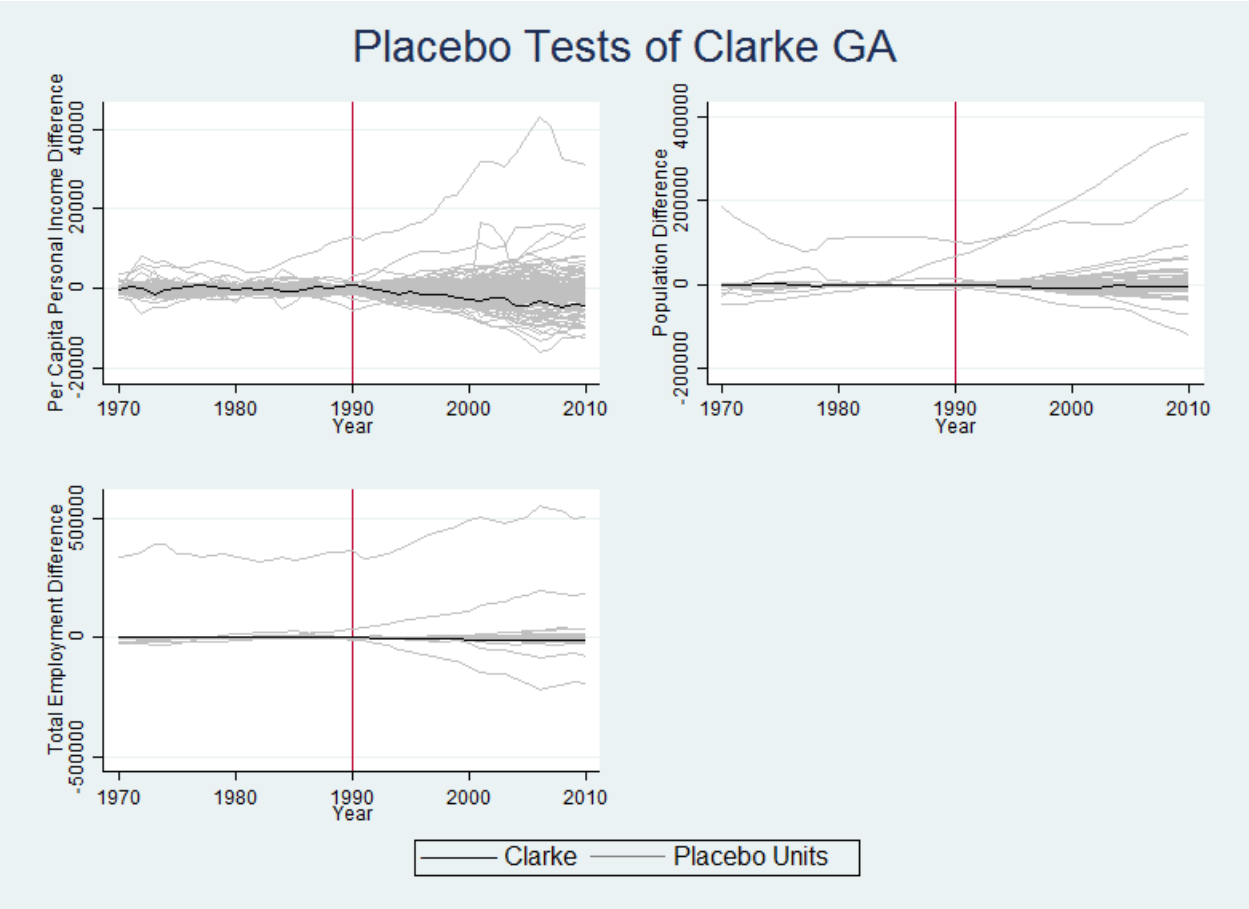

Figure 8: Placebo Tests of Clarke (Percentage)

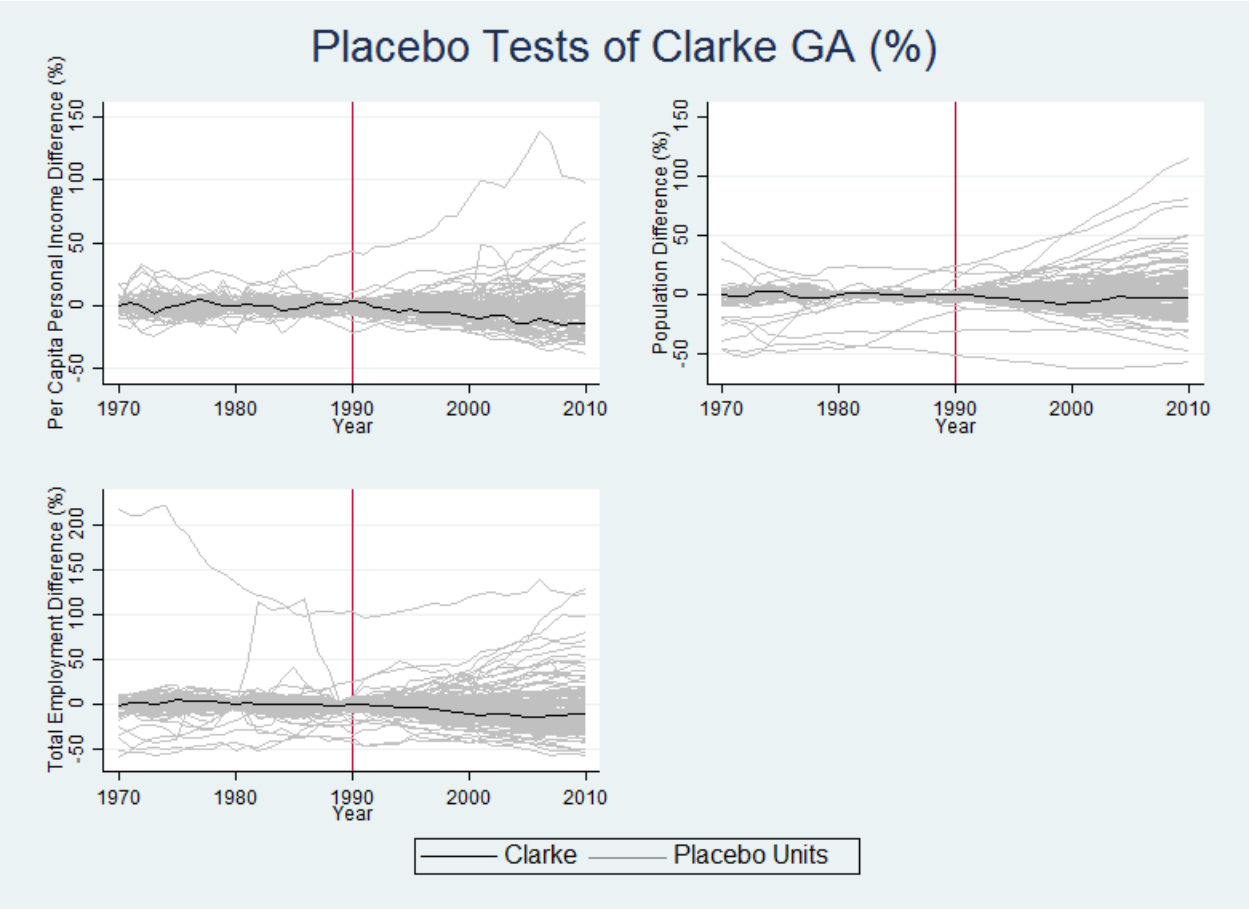

Figure 9: Richmond and its Synthetic

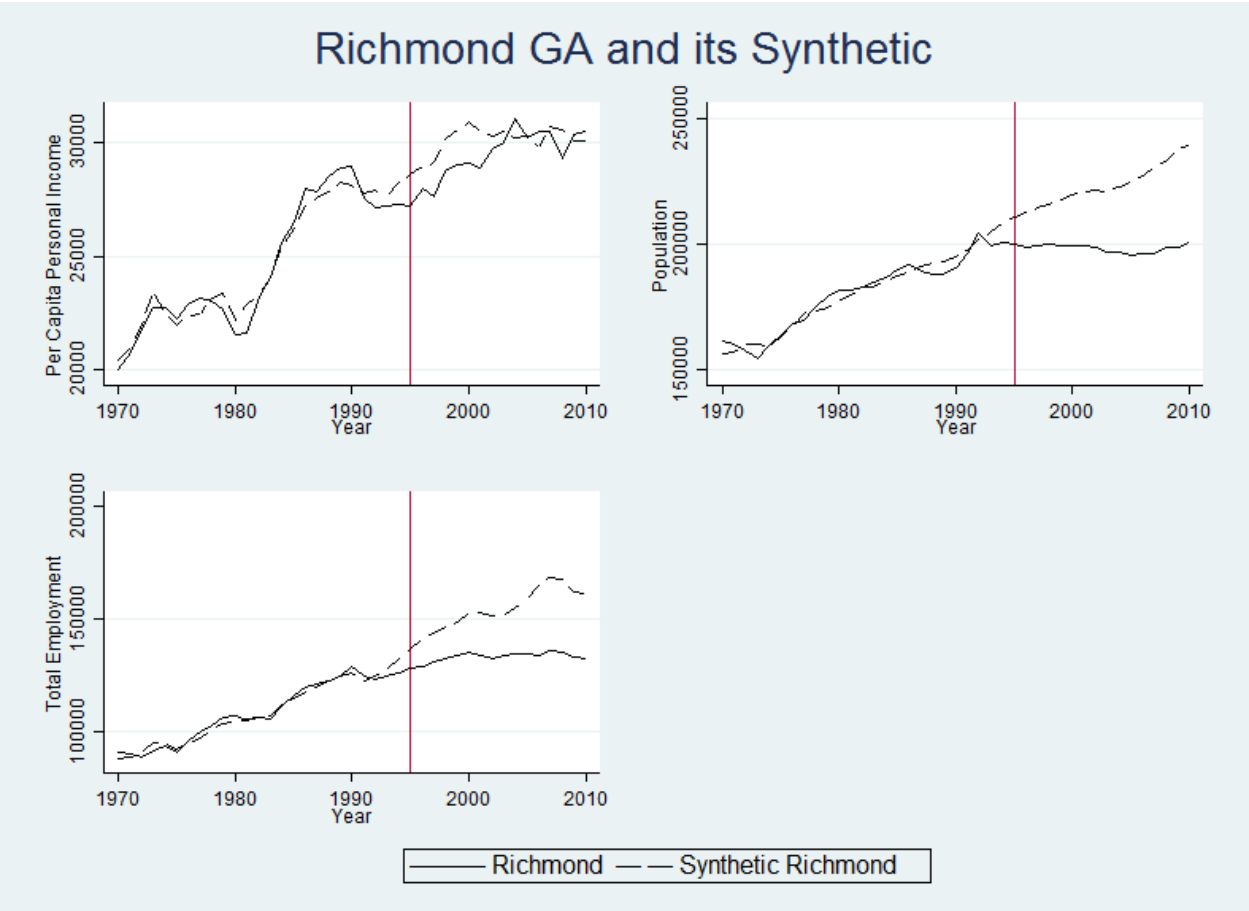

Figure 10: Placebo Tests of Richmond

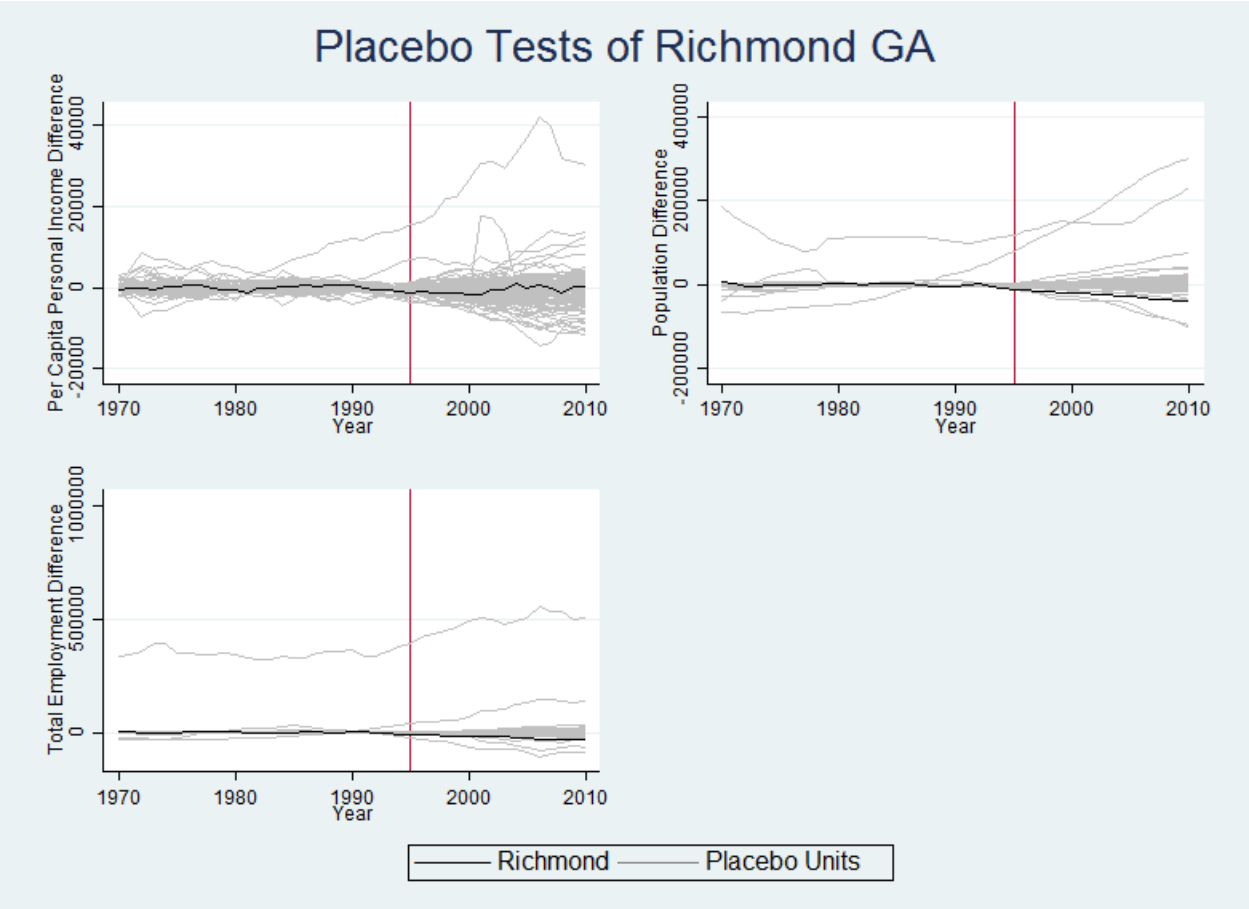

Figure 11: Placebo Tests of Richmond (Percentage)

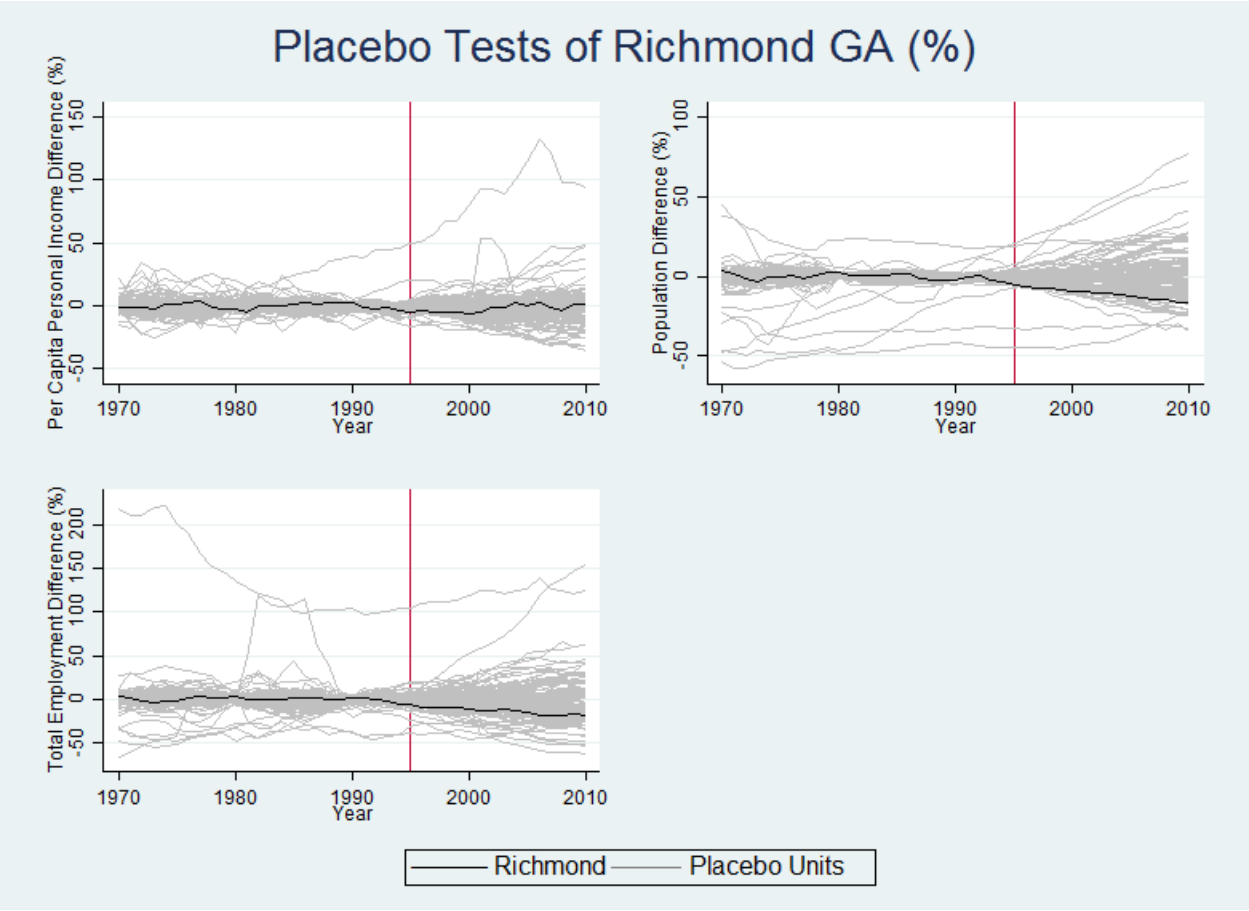

Figure 12: Clarke and its Synthetic (11 County Donor Pool)

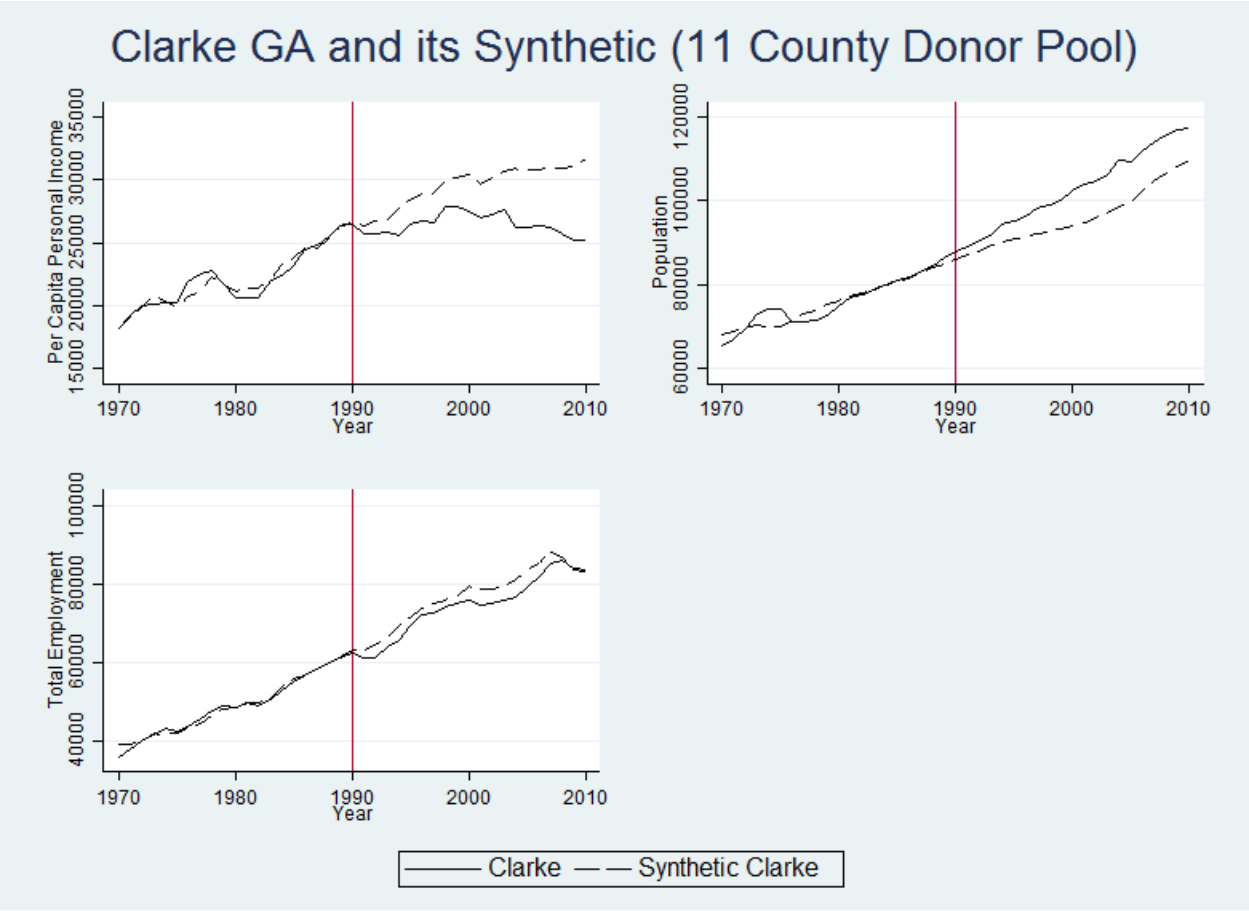

Figure 13: Placebo Tests of Clarke (11 County Donor Pool)

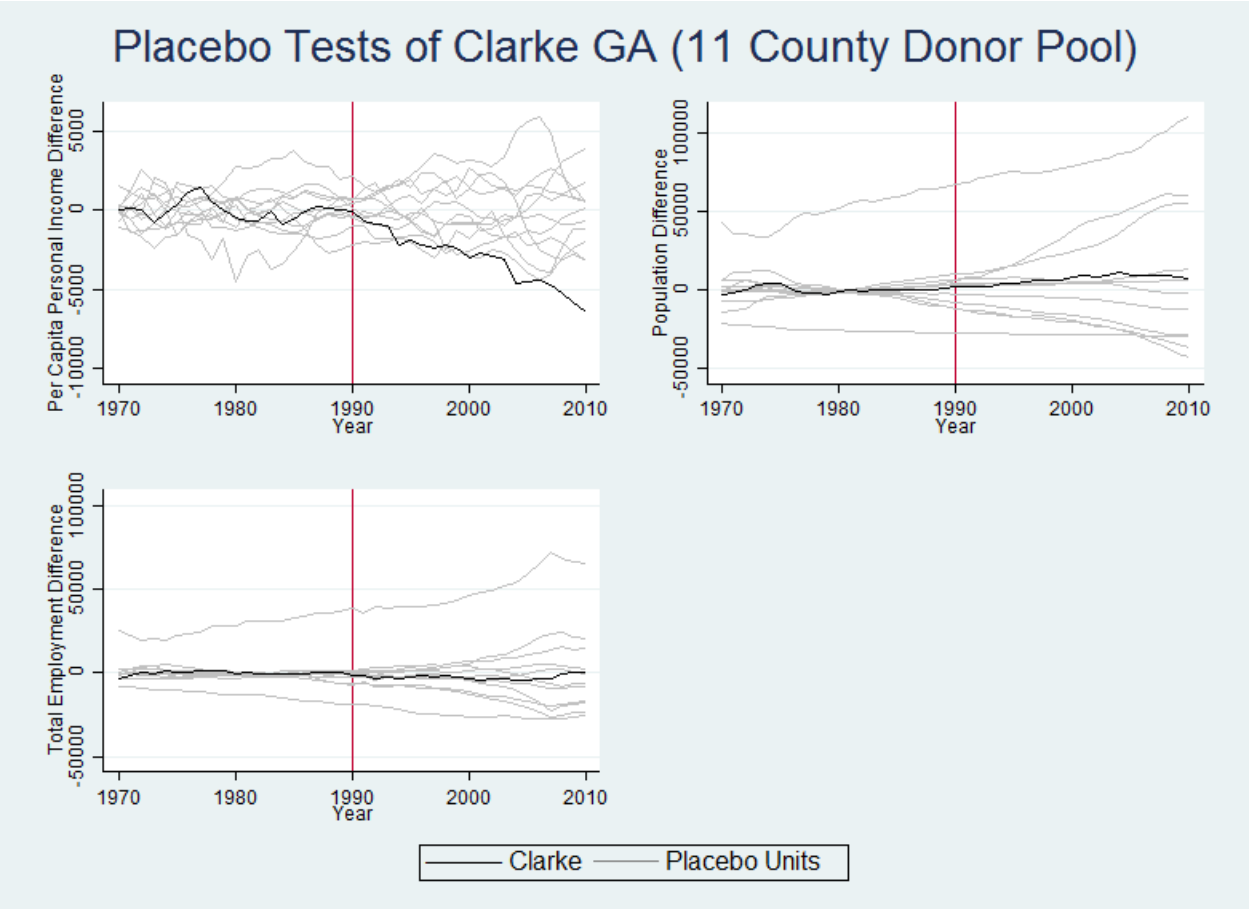

Figure 14: Placebo Tests of Clarke (Percentage, 11 County Donor Pool)

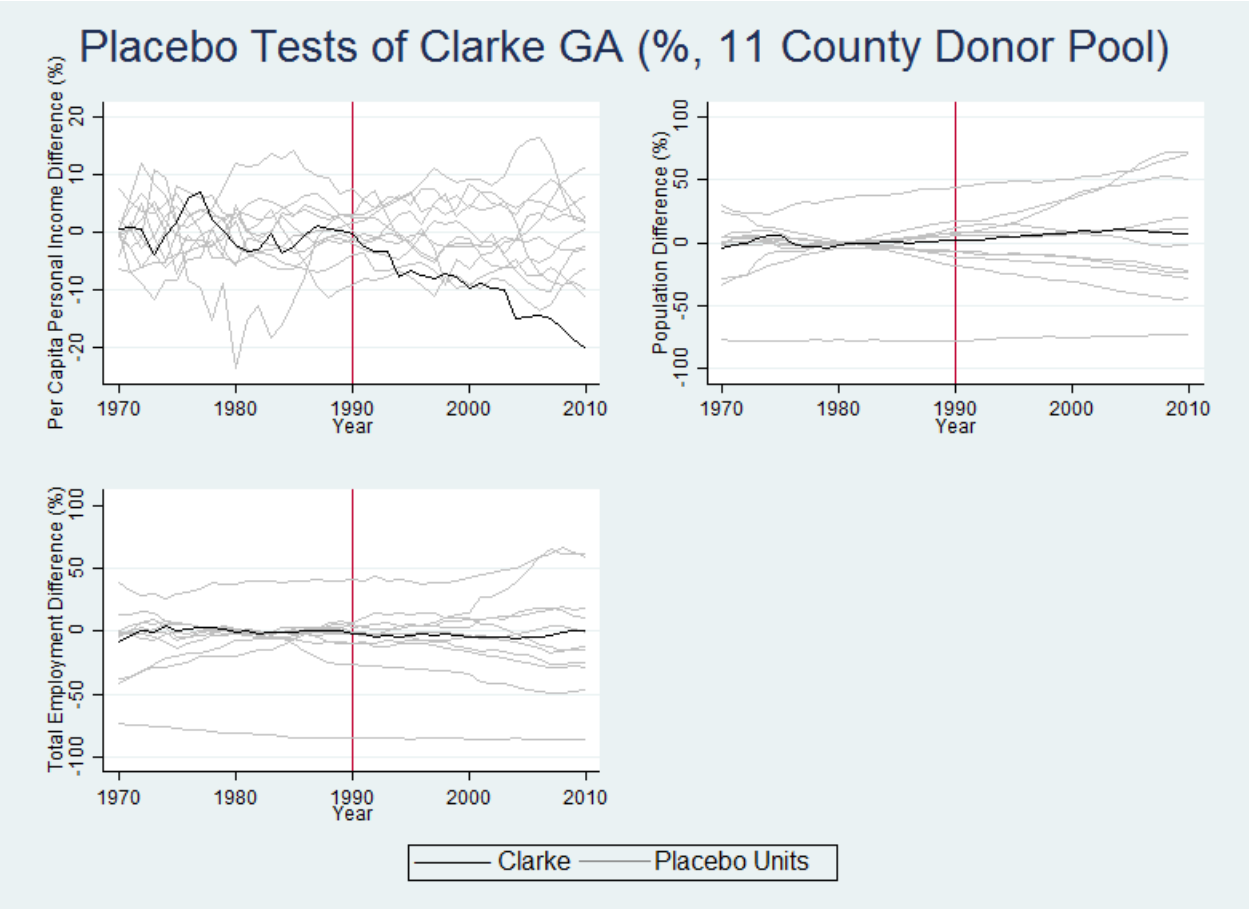

Figure 15: Richmond and its Synthetic (11 County Donor Pool)

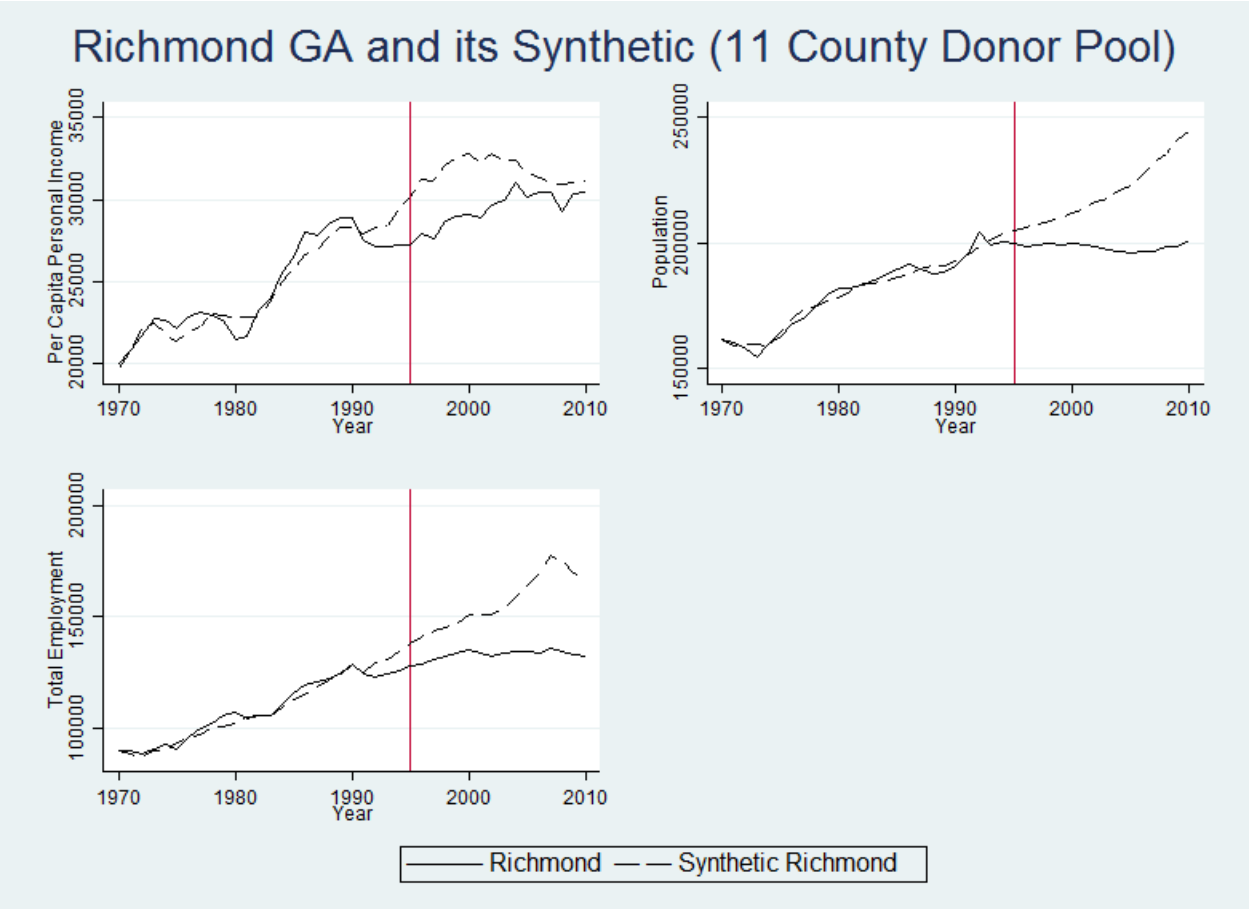

Figure 16: Placebo Tests of Richmond (11 County Donor Pool)

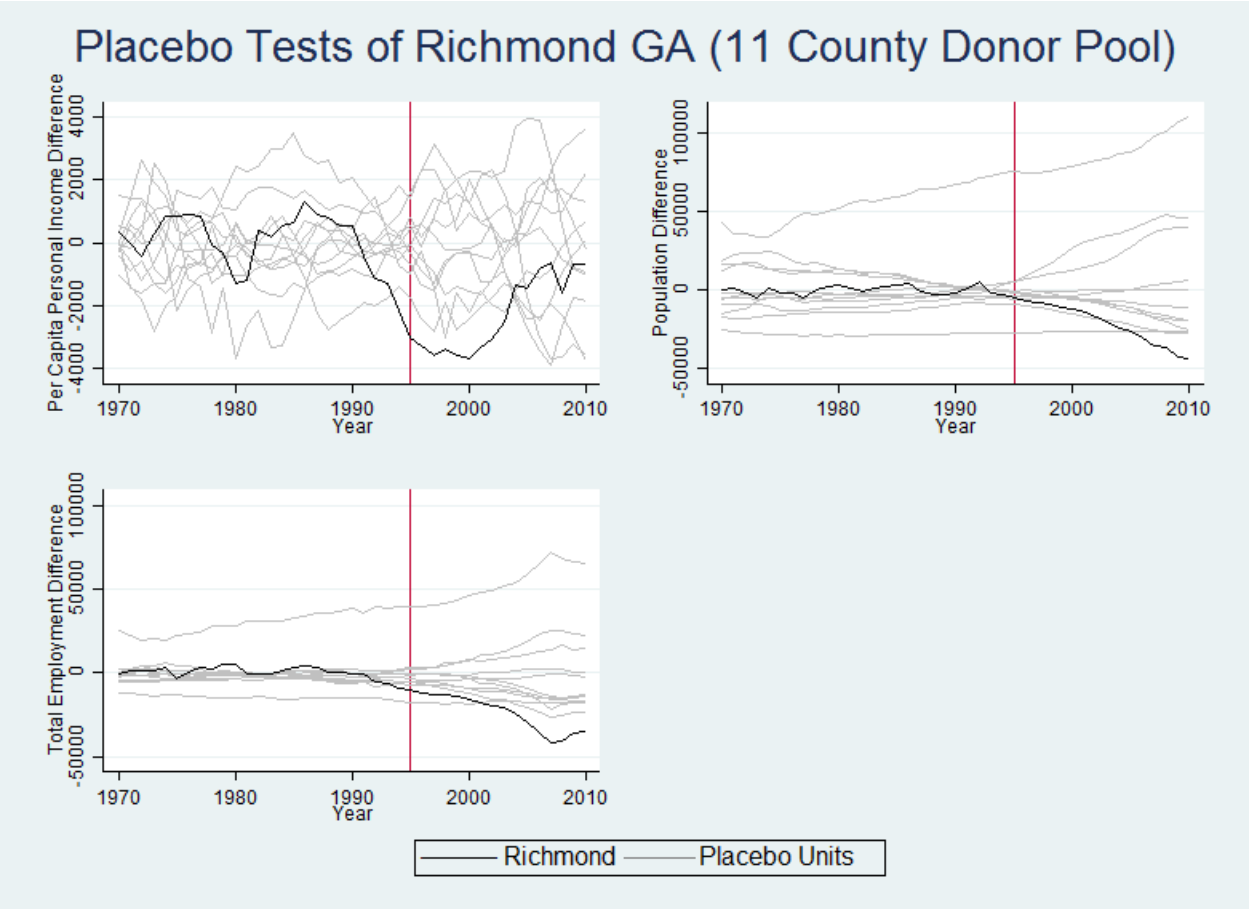

Figure 17: Placebo Tests of Richmond (Percentage, 11 County Donor Pool)