

The Effect of Immigration on U.S. State-level Institutions: Evidence from the Immigration Reform and Control Act

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Abstract

The spatial reallocation of labor from low to high-productivity countries increases global economic efficiency, *ceteris paribus*. However, a new case for immigration restrictions argues that migrants may transmit low productivity to their destination countries, decreasing global economic efficiency. Proponents of this case argue that immigrants transmit poor economic institutions, which are the causes of poverty and low-productivity in their home countries. Using the 1986 Immigration Reform and Control Act (IRCA) as a natural experiment, we test whether the legalization of undocumented immigrants affects the quality of state-level economic institutions in the United States. Using synthetic control models, we find that, in the short run, immigrants may increase the relative burden of government spending. However, in the long run, we find statistically insignificant effects of legalization on economic institutions using both synthetic control and difference-in-differences estimations. Our findings alleviate concerns that immigrants import low productivity by deteriorating the quality of economic institutions.

Keywords: Immigration, Institution, Labor Mobility, Economic Freedom

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1. Introduction

Classic economic theory suggests that the spatial reallocation of labor from low to high-productivity countries increases global economic efficiency, *ceteris paribus*. Scholars estimate that the gains in global economic efficiency from eliminating migration barriers may be tens-of-trillions of dollars (Clemens 2011). However, the classic theoretical argument for the efficiency gains from free migration often treats laborers like capital. That is, migrants are often simply treated as inputs in the production function with no ability to alter the institutions under which resources are put to productive use.

Borjas (2015) contends that migrants, unlike capital, affect the culture and institutions of their destination countries and may, therefore, transmit low productivity from poor to rich countries. Borjas argues that migrants are not simply workers; they are people (Freeman 2006). As such, migrants influence institutions and culture directly through participating in the political process and indirectly by influencing attitudes and opinions of natives. Therefore, it follows that relaxing migration restrictions may or may not increase global economic efficiency. If immigrants deteriorate the culture and institutions of their destination country sufficiently such that productivity declines, immigration may decrease global efficiency. On the other hand, if institutions are unaffected by immigrants, or are improved by immigrants, such that productivity remains the same or increases, then the claims of classic economic theory hold or even strengthen.

This contention has given birth to a growing empirical literature. In one strand of the literature, scholars, like Clemens and Pritchett (2019), model migration under productivity transmission and estimate dynamically efficient migration levels. In another strand of the

literature, scholars use measures of institutional quality, most notably the Economic Freedom of the World (EFW) index by Gwartney, Lawson, Hall and Murphy (2018), to measure immigration's effects on institutions.

In this second strand of the literature, Clark, Lawson, Nowrasteh, Powell, and Murphy (2015) provide the earliest study of immigrants' effects on institutions as measured by the EFW index. Using data from 110 countries from 1990 to 2011, they find no evidence of a negative effect and some evidence of a positive effect of immigration on a country's institutional quality as measured by the EFW index. Thus, their findings support the economic arguments for relaxing global migration restrictions to increase global economic efficiency. Subsequent studies build on this study using natural experiments to make stronger claims about the causal relation between immigration and institutional quality.

Powell, Clark, and Nowrasteh (2017) use a natural experiment in mass immigration, which allows the authors to measure whether there is a causal relation between immigration and institutions. The authors use the migration of Jews to Israel in the 1990s following the relaxation of emigration restrictions in Soviet countries as an exogenous shock to Israel's immigrant population. Using a synthetic control methodology, the authors find that the 20 percent increase in Israel's population from immigration led to improved institutional quality as measured by the EFW index. While this natural experiment buttresses the previous finding that immigration does not harm institutional quality, its results may not apply broadly. More than 30 percent of immigrants from the former soviet states to Israel were scientific and academic workers (Al-Haj 2004). Moreover, Israel's institutions were high quality before the exogenous shock from the flow of

immigrants into the country, and these immigrants are primarily Jewish, sharing similar cultural characteristics with the people of their destination country. Therefore, the external validity of this result may be limited by the uniqueness of this mass migration.

Nowrasteh, Forrester, and Blondin (2018) follow a similar approach in measuring the effects of immigration on the institutions of Jordan. This study is unique in that it measures the effect of mass migration on a country with weak initial institutional quality. In this case, the exogenous shock to migration is the 10 percent increase in Jordan's population forced by Saddam Hussein's invasion of Kuwait in 1990. The authors find a positive effect of immigration on economic institutions. This study strengthens earlier findings and allows for causal claims, but it is also unique to a particular institutional setting and an immigrant group with unique demographics. In this case, the destination country had weak institutions prior to mass migration, but the primarily Palestinian migrants shared similar cultural backgrounds with the people in the destination country.

The uniqueness of these natural experiments does not disqualify these studies from contributing to the broader understanding of the relation between immigration and institutions. Though, concerns about the external validity of these studies highlight the need for a mosaic of studies surrounding this relation.

Similar to the foundation laid by Clark, Lawson, Nowrasteh, Powell, and Murphy (2015) in the international institution literature, Padilla and Cachanosky (2018) lay the initial foundation for the study of the relation between immigration and local/state institutions. Using the Economic

Freedom of North America (EFNA) index, the authors find no relation between immigration and institutions among U.S. states.¹

Our study, like the subsequent studies of in the international literature, adds to the literature by exploiting an exogenous change to United States immigration policy: The Immigration Reform and Control Act (IRCA) of 1986. Although IRCA represents an internal legal change, it occurs at the federal level; thus, we utilize IRCA as a state-level exogenous shock. The exogenous immigration reform brought about by IRCA approximates the situation described by Borjas (2015). That is, the legalization of roughly three million immigrants following the passage of IRCA exemplifies an immigration reform wherein immigrants from primarily low-productivity countries are legalized in a high-productivity country with a different cultural heritage from that of their native countries.

Ninety percent of those legalized by IRCA were from Latin American countries with lower productivity levels and lower quality institutions than the U.S. The individuals legalized by IRCA were not eligible for naturalization (which includes the right to vote) until 1996, and even then, only 20 percent applied for naturalization. Therefore, the mechanism by which IRCA immigrants could influence state-level economic freedom is not likely to occur through the process of voting. Rather, the mechanisms through which IRCA affects institutions may be less direct, such as increasing competition in the labor market, changing consumption of public goods and benefits, and influencing attitudes of natives.

¹ The Economic Freedom of North America (EFNA) index by Stansel, Torra, and McMahon (2018) is the sister index to the Economic Freedom of the World (EFW) index, both of which are published by the Fraser Institute. The EFNA measured economic freedom among the states of the U.S. and Mexico and the provinces of Canada.

Borjas (2015) contends that it “seems inconceivable” for billions of immigrants to move to industrialized economies without transferring the institutions that led to poor economic conditions in their home countries. Nations fail because of differences in political and economic institutions (Acemoglu and Robinson 2012). Borjas therefore argues that the gains from relaxing global migration restrictions are overstated. Summarizing this argument, Borjas quotes the Swiss novelist Max Frisch, “We wanted workers...but we got people instead...Uncomfortable as it may be...migrants bring their culture with them.”

If Borjas is correct that immigrants import economically harmful cultural values, then we might expect institutions to deteriorate as migrants participate in the political process, consume public goods, and influence the attitudes and behaviors of natives. In the specific case of IRCA, institutional deterioration is less likely to be driven by cultural transmission because IRCA did not change the number or composition of immigrants in the U.S. However, IRCA did change the ability of immigrants to consume public goods and legally compete with natives in the labor force. Therefore, it is possible that, through these mechanisms or other similar mechanisms, IRCA leads to the deterioration of economic institutions.

Alternatively, IRCA may have a positive effect on economic institutions. Amnesty may increase opportunities for immigrants to compete in formal labor markets, to acquire private health insurance, to create jobs, to patent an invention, or to pursue countless other economic opportunities. If so, economic institutions may improve in quality as immigrants and natives become more prosperous and less reliant on public goods.

It is also probable that some combination of these possibilities will occur. Thus, IRCA might not affect economic institutions because the positive effects of amnesty offset the negative effects of legalization, on average. From a theoretical perspective, therefore, it is difficult to predict ex ante the total effect IRCA will have on the quality of economic institutions. As a result, we rely on empirical estimations from both difference-in-differences models and synthetic control methods to shed light on this empirical question.

In order to examine the effects of immigrant legalization under IRCA on U.S. state-level economic freedom, we focus on the states that received the highest proportion of those legalized by IRCA: California, Texas, New York, Illinois, Florida, and Arizona. We give special attention to California, which was home to roughly half of those granted legal status by IRCA and experienced the largest change to its population (5 percent).

Using difference-in-differences models and synthetic control methods, we find no evidence of a long-term effect of the legalization of immigrants on institutional quality, measured by economic freedom. We do note a short-run drop in institutional quality in California, mainly driven by an increase in government expenditures. In the long-run, however, we find California's institutional quality converges with the control group within a decade. Overall, our results suggest that legalizing low-skilled, undocumented immigrants from culturally diverse countries might cause an increase in state-level government expenditures; however, we do not find evidence of any long-run influence on institutional quality across U.S. states.

Like the previous natural experiments in the literature, this one also provides results with caveats regarding their external validity. Our natural experiment is not an exogenous shock to

immigration, per se, but an exogenous shock to the legalized population of a state. Therefore, our results most directly address amnesty, a hotly debated aspect of immigration policy typified by the debate surrounding Deferred Action for Childhood Arrivals (DACA). As such, this paper most closely resembles that of Padilla and Chachanosky (2018), except that the natural experiment allows us to make causal claims. Therefore, this study is an important piece in the mosaic of studies analyzing the important relation between immigration and institutions.

Collectively, our results assuage concerns that migration leads to the transmission of political and economic institutions from low to high productivity countries. Therefore, our results support economic arguments in favor of relaxing migration restrictions.

2. The Immigration Reform and Control Act of 1986 (IRCA)

Due to an increasingly large unauthorized population within the United States, Congress passed the Immigration Reform and Control Act (ICRA) in 1986. The act reduced the stock of undocumented immigrants by granting amnesty to those meeting certain criteria and aimed to reduce the flow of undocumented immigrants by enhancing enforcement measures. IRCA increased funds available for infrastructure at the border deterring illegal entry to the United States. Additionally, IRCA required employers to verify the legal status of workers and established penalties for noncompliance. However, unauthorized immigration resumed its upward trend soon after the passage of IRCA, indicating that IRCA did not change the long-run trend (Orrenius and Zavodny 2003).

Legalization was made generally available to workers who could provide evidence of continuous residence in the U.S. since before January 1, 1982. Less restrictive requirements were placed on seasonal agricultural workers meeting certain requirements. Black markets emerged for fraudulent documentation allowing unqualified undocumented immigrants to apply for and receive amnesty. Those with criminal histories were excluded from IRCA's amnesty opportunity.

IRCA improved the labor market opportunities of those who were legalized.² Some states even made public benefit programs available to immigrants legalized by IRCA, and federal programs, such as food stamps and Medicaid, were available to immigrants five years after legalization. Undocumented immigrants who did not qualify for amnesty under IRCA, however, experienced worsened labor market outcomes, including lower wages, worse working conditions and unemployment durations.³ Scholars find that legalization is associated with decreased crime rates; however, being ineligible for amnesty under IRCA is associated with increased crime rates from ineligible immigrants due to fewer labor market opportunities (see Freedman et al. 2013 and Baker 2015).

IRCA also introduced requirements to verify the immigration status of all alien applicants for public benefit programs, including Medicaid, food stamps, housing assistance, AFDC, educational grants, and unemployment compensation. The Immigration and Naturalization Service (now the Department of Homeland Security) verified eligibility for public benefits, and through grants to states, the federal government reimbursed states for the full costs of verification.

² See Kossoudji and Cobb-Clark (2002), Rivera-Batiz(1999), Lozano and Sorensen (2011), Pan (2012), and Amuedo-Dorantes et al. (2007).

³ See Donato et al. (1992), Donato and Massey (1993), Sorensen and Bean (1994), Bansak and Raphael (2001), and Bach and Brill (1991).

According to the Statistical Yearbook of the Immigration and Naturalization Service, IRCA legalized 2.7 million previously undocumented immigrants, the majority of which were Latino (89 percent). Of those legalized, 43 percent were seasonal agricultural workers. Roughly 87.5 percent of those legalized by IRCA resided in six states: California, Texas, New York, Illinois, Florida, and Arizona. The 44 other states were each home to less than 1 percent of those legalized under IRCA. The application process ended in 1988, and the majority of those legalized were granted legal status in the four years following the closing of the application period.

[Insert Table 1 Here]

Table 1 presents the number of immigrants legalized, the percent of those legalized, and the percent of the 1990 population that were legalized by IRCA in each of the six aforementioned states. California was home to the majority of those legalized by IRCA, totaling 54 percent, or roughly 5 percent of the state's population. Of the IRCA cohort, 20 percent were naturalized by 1996, the first year of their eligibility. By 2001, 33 percent were naturalized, and 41 percent were naturalized by 2009. Many of those legalized by IRCA, especially those from Mexico, did not desire to naturalize in the U.S. (Baker 2010).

Therefore, because naturalization is required before one is allowed to vote, the mechanism through which IRCA affects economic freedom is unlikely to be voting. Instead, IRCA recipients affect the institutions of their destination states in less direct ways. For example, IRCA required training in the English language, which must be provided by states through community colleges or other educational institutions. This requirement put an upward pressure on public education expenditures, which may decrease economic freedom, especially in the short-run. However, if

learning English allows for easier assimilation, this requirement may lead to a long-run increase in economic freedom.

IRCA also increased necessary verifications for employment and provision of public benefits, which imposed additional costs on states to implement and enforce. Thus, this could also put an upward pressure on government expenditures. Moreover, heightened requirements for employment increased crime rates among those who were ineligible for legal status under IRCA and, thus, may increase law enforcement costs for states (Freedman et al. 2013). IRCA recipients were also eligible for public benefit programs, which could increase state government expenditures.

Since increases in the size of government lead to decreases in economic freedom scores, these combined upward pressures on government expenditure could decrease economic freedom in states legalizing IRCA immigrants. In addition, switching undocumented workers to legalized immigrants could lead to an increase in tax collection. If so, this increase in taxes (area 2 of economic freedom) may decrease economic freedom.

Lastly, the effect that IRCA had on the attitudes and decisions of natives is an even less direct mechanism that may affect economic institutions in destination states. We believe this effect is likely to be negligible since IRCA's required legal changes occur at the federal level, and IRCA legalized immigrants already residing in the United States. Thus, natives are less likely to respond negatively to these federal legal changes affecting current residents by voting for policy changes that influence economic freedom at the state-level.

3. Empirical Methodology and Results

Our goal is to estimate the difference between observed economic freedom in states most effected by IRCA after 1986 compared to what economic freedom would have been without legalization of immigrants under IRCA. Although IRCA represents an internal legal change, it occurs at the federal level; thus, we can utilize IRCA as a state-level exogenous shock making it an excellent candidate for a natural experiment.

We use the Economic Freedom of North America (EFNA) index by Stansel, Torra, and McMahon (2018) to measure economic freedom.⁴ The index was first published in 2002 with data starting in 1981. Like its sister index, the Economic Freedom of the World (EFW) index, it measures institutional quality as consistency with principles of economic freedom. The EFNA index ranks the institutional quality of each of the 50 states in the U.S. on a scale from 0 to 10, where 10 represents higher quality. The overall score is an equally weighted average of three subcomponents: Government Spending, Taxes, and Labor Market Freedom. These three subcomponents are, likewise, the equally weighted average of their subcomponents.

We utilize two different estimation techniques, difference-in-differences (DID) regressions and synthetic control method (SCM). We first present results from DID for the impact of IRCA immigration legalization shock on economic freedom under several different specifications. Next, we present results using SCM to estimate the effect of immigrant legalization shock by creating synthetic IRCA state(s) as a weighted combination of related states.

⁴ Stansel and Tuszynski (2017) summarize many of the studies using the EFNA index, which total 235 published papers and book chapters.

3.1 Difference-in-Differences Estimation

In order to understand the institutional effect from IRCA, we first use difference-in-differences, which calculates the effect of a treatment by comparing the average change over time of the treated unit to the average change of a control group. Difference-in-differences assumes that the treated group and control group follow parallel trends over time. It calculates the difference in the differences between the two groups before and after the treatment in order to estimate a (significant) treatment effect.

This estimation requires panel data that includes treated and untreated cross-sectional components and time periods before and after the treatment. We build our panel dataset for all 50 states starting in 1981, the first year that economic freedom data is available, through 1997. In order to minimize potential confounding effects, we restrict the sample to 1997 as a new immigration law, the Illegal Immigration Reform and Immigrant Responsibility Act, took effect in 1997. Our event of interest, IRCA, passed in 1986. Thus, we have 6 pre-treatment years (1981-1986) and 11 post-treatment years.

The main dependent variable is the economic freedom (EFNA) index as defined above (Stansel et al 2018). For ease of interpretation, we rescale the index from 0 to 1. Control variables include a measure of government ideology, defined as the mean position on a liberal-conservative spectrum of a state's elected officials, weighted by the officials' relative power over policy decisions (Berry et al. 2010). Government ideology is rescaled from 0 to 1 with a higher number indicating a more liberal state. We also include log GDP per capita (in 1997 dollars, Bureau of Economic Analysis (BEA)), share of African American population (BEA), share of native born

with a high school diploma (IPUMS), share of urbanization (IPUMS) and share of naturalized citizens 18 years and older (IPUMS).⁵ We also include state and year fixed effects to control for time-invariant state effects and yearly time trends. Standard errors are clustered by state.

Thus, our model takes the following form:

$$EFNA_{it} = \delta DID_{it} + \alpha X_{it} + \gamma_i + \mu_t + \varepsilon$$

Where $EFNA_{it}$ is the outcome variable, economic freedom score of each state in the US. DID_{it} is the interaction term of treated and time, and δ is the coefficient of interest. X_{it} is a vector of control variables, which including government ideology, log GDP per capita, share of native population with at least a high school diploma, share of population that is African America, share of urban population, and share of population that are naturalized citizens. μ is year fixed effects, and γ is state fixed effects. ε is the error term.

Summary statistics and sources for this dataset are provided in Table 2. Economic freedom ranges from a low of 0.27 (New York state in 1981) to 0.75 (New Hampshire state in 1988) with a mean of 0.54 and standard deviation of 0.10. Each specification includes 850 observations.

[Insert Table 2 Here]

We are interested in the coefficient on IRCA state x post-1986, which captures the estimated effect of IRCA immigration shock on economic freedom. To estimate this effect, we group states into four IRCA state groupings. First, we include the six states that legalized over 87% of immigrants under IRCA as the treated states: California, Texas, New York, Illinois,

⁵ Share of naturalization is collected from IPUMS 1980, 1990, and 2000 survey. Missing values are interpolated using a cubic spline. IPUMS is US Census public-use microdata. BEA data is collected from Regional Economic Information System of the Bureau of Economic Analysis.

Florida, and Arizona. Our second group includes only the top two states as treated states, California and Texas, which legalized 53.6% and 15.3%, respectively. The third group includes the other four of the top six states as the treated states: New York, Illinois, Florida, and Arizona. Lastly, we examine California alone as the treatment group, the state legalizing over 53% of IRCA immigrants. The remaining 44 states combined received about 12% of the legalized population under IRCA, none of which received more than 1% of the legalized population. These 44 states are included in the control group in each of the four models.

Results are reported in Table 3. As reported in columns (1)-(4), the coefficient on IRCA's legalization shock is statistically insignificant, indicating that immigrant legalization under IRCA did not significantly impact economic freedom in the top six IRCA states, California plus Texas, the four IRCA states combined, or California. Collectively, the results suggest that immigrant legalization shock from IRCA has a negative effect in three of the four specifications, but the effect is insignificant.

[Insert Table 3 Here]

One possible concern with the DID analysis is using 1986 as the shock year. Although this is the year that IRCA was passed, it may take time for immigrants to affect institutions. For example, the application process did not end until 1988, most immigrants under IRCA became naturalized from 1989-1992, additional immigrants continued to come as part of the amnesty granted under IRCA, and many public assistance benefits were available only after several year. Thus, it is possible that immigrants granted legal status under IRCA could influence institutional

quality in subsequent years, directly through voting or indirectly by placing demands on public goods, such as education, public assistance programs, and crime-related costs, as discussed above.

As such, we run several different sensitivity checks using years 1987-1992 as potential shock years. The results are nearly identical to those reported in Table 3. Thus, this minimizes concerns regarding isolating the impact from the timing of immigrant status. Results are not tabulated to save space but are available upon request.

One downfall of difference-in-differences is that it assumes parallel trends between the treated and control group; thus, we are unable to distinguish if the negative impact continues over time. We address this concern next by utilizing synthetic control method and expanding on institutional changes occurring in California around the time of IRCA.

3.2 Synthetic Control Method

Next, we employ the synthetic control method (SCM), which is an empirical technique that weights a combination of states to provide a better control group than any single one (Abadie and Gardeazabal 2003; Abadie et al. 2010; Abadie et al. 2015; Peri and Yasenov 2017). SCM developed in Abadie and Gardeazabal (2003) is applicable to measure the effects of an exogenous shock, like a public program, on an economic outcome. For example, SCM is used to study the unification of East and West Germany on West Germany's economic growth (Abadie et al. 2015); if Proposition 99, California's tobacco control program, influenced cigarette sales (Abadie et al. 2010); how changes in policy affected terrorism in Spain (Abadie and Gardeazabal 2003); and it is applied to Venezuela to study how a how a national leader, Hugo Chavez, can affect economic

outcomes (Grier and Maynard 2016). More specific to our study, SCM is utilized by Powell et al. (2017) and Nowrasteh et al. (2018) to understand if mass immigration into a country, Israel and Jordan, respectively, decreases that country's economic freedom.

SCM creates a counterfactual by weighting pre-surge economic freedom scores in various states, thus allowing us to create a synthetic IRCA state. The synthetic tracks economic freedom after 1986 as if IRCA never occurred. This allows us to compare economic freedom scores in states most impacted by immigrant legalization under IRCA to a synthetic state in which legalization of immigrants did not occur. The difference between the synthetic and real state are attributed to IRCA reforms after the intervention date.

To create the synthetic control, we generate a counterpart to each of our four IRCA state subsamples based on a weighted average of economic freedom scores and other variables of states similar to the real IRCA state(s). SCM generates and assigns weights to units in its donor pool. The weights are based on the similarity of indicator variables of these states to the same variables for our IRCA states. More specifically, instead of averaging the values of predictor variables in the control group, the synthetic control method assigns varying weights to units in the donor pool. As such, SCM places more weight on explanatory variables that influence the outcome variable more significantly (Abadie et al. 2010, Abadie et al. 2015). This creates a control group by manufacturing changes in a group of states similar the IRCA state(s) under investigation. The synthetic state represent the outcome the country would have experienced; in other words, it creates a counterfactual.

We use SCM with our four IRCA subsamples: 1) top six IRCA states (California, Texas, New York, Illinois, Florida, and Arizona; 2) top two IRCA states, California and Texas, 3) the other four IRCA states (New York, Illinois, Florida, and Arizona), and 4) California alone. We do not examine Texas independently due to the inability to create a goodness of fit with a synthetic Texas (see Appendices 1 and 2).⁶

SCM requires a group of states, a donor pool, that are similar to the IRCA state(s) to act as a control group. For the first three subsamples mentioned in the previous paragraph, we treat groupings of the primary IRCA states into one IRCA state and then compare it to the control group. For example, we combine the top six IRCA states by weighting according to the portion of immigrants legalized under IRCA: California (53.6%), Texas (15.3%), New York (5.3%), Illinois (5.4%), Florida (5.3%), Arizona (2.4%). We weight the variables using the share of legalized over the sum of the share legalized in the six states under IRCA. For each variable representing the top six IRCA states, we acquire them by the sum of 61.4% CA (53.6/87.3), 17.5% TX (15.3/87.3), 6.1% NY (5.3/87.3), 6.2% IL (5.4/87.3), 6.1% FL (5.3/87.3), and 2.7% AZ (2.4/87.3). This process is repeated for the other two subsamples combining IRCA states into one state. For each subsample, summary statistics and data sources are provided in Table 4.

[Insert Table 4 Here]

We initially pull from the other 44 states for the donor pool. To avoid the noise of a large number of predictor variables (McClelland and Gault, 2017), we synthesize IRCA state(s) with five predictor variables: log GDP per capita (BEA), share of native population with at least a high

⁶ This could be due to disproportionate levels between the education predictor variable and outcomes occurring due to economic growth. It could also be because the size of the exogenous shock from IRCA is not large enough in Texas.

school diploma (IPUMS), share of naturalization (IPUMS), economic freedom in 1981, and economic freedom in 1985. For robustness, we swap share of naturalization for share of urbanization, also collected from IPUMS.

We restrict the donor pool to states most similar to each IRCA state(s) to avoid interpolation biases from statistical overfitting that can occur from including the idiosyncratic variations from a large number of unrelated states (Abadie et al. 2015). Table 5 lists the states in each synthetic control group as well as the assigned weights from the states entering the donor pool. These states prevent such overfitting because they have similar economic institutions, income, educational attainment, and naturalization.⁷ For the top IRCA states, for example, our control group is comprised of 53% New Jersey, 16% Washington, 15% Hawaii, 10% Wyoming, and 5% Colorado.

[Insert Tables 5 and 6]

Table 6 provides pre-IRCA values of the indicator variables and economic freedom scores for synthetic and real IRCA states listed by each subsample. The average difference in economic freedom in 1981 between the real state and synthetic control across all four groups is 0.002. The values of the other variables match closely as well, with one exception. Share of naturalized citizens does not match as closely as the other predictor variables. However, we are able to generate goodness of fit between the synthetic and real models according to our predictor variables across all four samples, as indicated by the root mean squared predictive error (RMSPE) listed at the

⁷ We estimate that for the ten states receiving 1% of the IRCA population in the donor pool, less than 250 undocumented were legalized in each year in each the ten states. Although states in our donor pool did legalize immigrants under IRCA, we do not believe this invalidates our donor pool given that so few were legalized.

bottom of the table. For each IRCA state(s), the RMSPE is 3 percent or less, indicating the biasness (deviation of synthetic unit from the treated) based from the predictors is 3 percent or less. Although there is no rule of thumb on the value of RMSPE, the smaller the value the better the predictors are at explaining our outcome variable. To provide robustness to our estimations, we drop naturalization and instead include share of urbanization. With this change, we obtain a slightly better fit as reported and discussed later.

In the final column of the table, we report the donor pool average. Comparing these values to the real values of our IRCA subsamples suggests that they are not as well matched as the synthetic values. Thus, our synthetic state mimics the pre-immigrant IRCA state(s) much better than simply averaging similar types of controls.

To see how the exogenous shock from immigrant legalization occurring under IRCA affects state-level economic freedom, Figures 1 A-D illustrates the real versus the synthetic control for our four subsamples of IRCA states: Top IRCA states, California plus Texas, Four IRCA states, and California. When we include California in the IRCA state sample, Figures 1A, 1B and 1D, we see a similar trend. The synthetic state's economic freedom rises above the actual state's economic freedom after the passage of IRCA (1986), suggesting that legalization of immigrants harmed economic freedom post-IRCA.

[Insert Figure 1 Here]

For example, focusing on California in Figure 1D, divergence between the real California and synthetic California in economic freedom happens around the timing of IRCA 1986. The divergence grows for about five years before they converge by 1995 with the real California

starting to outperform the synthetic one. The largest difference in economic freedom between real and synthetic California is about 0.78 units (on a 10-point scale) occurring in 1990. This is over three standard deviations of California's economic freedom score. The size of the effect in the other two samples, Figures 1A and 1B, are visible but much smaller.

This appears, however, only to be a short-run effect. In all three figures, the real and synthetic states converge within ten years, suggesting that there is no long-run deterioration of economic institutions caused by immigrant legalization.

Figure 1C documents the effect of immigrant legalization on the four of the six states less impacted by IRCA. There is no discernable difference between the real and synthetic state throughout the entire time period.

To provide robustness to these findings in Figure 1, we include share of urbanization and drop share of naturalized population. Table 7 reports the estimated synthetic control weights. As reported, the donor pool and weights do change compared to Table 5 discussed previously. Table 8 reports the goodness of fits between the real and synthetic IRCA subsamples. For each IRCA state(s), the RMSPE is 2 percent or less, suggesting a slightly better goodness of fit than our prior estimations.

[Insert Tables 7 and 8 Here]

Figures 2 A-D details actual versus the synthetic control for our four subsamples of IRCA states: Top IRCA states, California plus Texas, Four IRCA states, and California. As shown, all four figures are very similar to Figures 1 A-D above. We view this as providing additional evidence

that our results from SCM are not driven by the indicator variables or specific donors utilized to create the synthetic version.

[Insert Figure 2 Here]

Figure 3 provides additional support that our synthetic states more accurately track the evolution of the real IRCA states prior to the 1986 treatment period. This figure documents the trend in economic freedom scores over the sample for synthetic and real Top IRCA states, synthetic and real California, and the donor pool. As shown, synthetic Top IRCA and synthetic California more closely map economic freedom scores prior to IRCA in real Top IRCA state and real California. In addition, this figure also indicates a general overall trend in economic freedom across all five sub-groups, including our donor pool.

[Insert Figure 3 Here]

Combined, these figures suggest that California, the state most impacted by IRCA, is driving the result. Given this, we further investigate California in the following section. California was home to the majority of those legalized by IRCA (53 percent), and it also experienced the largest exogenous shock to its legal population (5 percent). Therefore, of all the states, California represents the most extreme case of immigration reform. Moreover, California seems to be driving the results discussed above.

4. Did IRCA decrease economic freedom in California?

The above findings are intriguing. To gain a deeper understanding to how legalizing immigrants impacts economic freedom, we run several forms of specification checks for our SCM

estimates with California. To gain additional confidence that immigrant legalization does not decrease institutional quality over time, we need some support of out-of-sample precision in the absence of similar interventions.

First, we pretend that IRCA was passed in 1983 instead of 1986 and repeat the experiment using the same donor states and indicator variables. This test allows us to check if the previous results document in Figure 1D above is due to an inability to predict California out-of-sample for any time period. If changing the intervention date results in a synthetic control that is not close to the 1986 intervention date then this robustness test should decrease our confidence that the change observed in 1986 was caused by IRCA.

Figure 4A presents the results with SCM using 1983 as the shock year. Synthetic California and real California are consistent with each other before the year 1983, and in the year 1983, while the two start to diverge 1986, the timing of IRCA. This test buttresses the previous finding, finding that the difference between the real California and the synthetic California is caused by IRCA in 1986 instead of other possible reasons. There is little difference in the ability to track real California post-intervention using the falsely created intervention in 1983.

We perform an additional robustness test in which we assign the 1986 IRCA immigration shock as a treatment to the other 44 states in the sample separately. For each of these states, we develop a synthetic control from 1981-1985 data and compare to the actual state in pre- and post-intervention periods. Results of the in-space placebo test are shown in Figure 4B. The darker dashed line represents the difference between real California and synthetic California and the lighter grey lines indicate the gaps between other real and synthetic states in our sample. The

results show that the post-IRCA trend is unique to California and more visible than in any of the other states. We see an impact from legalizing immigration in California that does not appear in other states.

Lastly, we synthesize California by leaving out one at a time one of the four donor states (Hawaii, Michigan, New Jersey, and Alaska). Figure 4C shows the results from leaving out one state with positive weights in the donor pool one at a time, so we get four new synthetic Californias. This allows us to determine if one of the states in our donor pool is driving the results.

Comparing the four new synthetic California with original synthetic California, three out of four of the new synthetic California are consistent with the original synthetic California, which provides confidence in the validity of original synthetic California to the real California. Regarding the inconsistent one, No Hawaii synthetic California, it is possible that this is mainly driven by the large weight Hawaii is given (54.4 %) when synthesizing the real California. After leaving Hawaii out, the remaining three states with positive weights sum up to only 45.6%, which is not a great depiction of the real California.

[Insert Figure 4 Here]

Now we try to uncover which areas of economic freedom are affected. As previously discussed, IRCA may affect economic institutions by altering the consumption of public goods or states' fiscal positions, which should be evident in the EFNA's measure of government spending (Area 1) and/or taxation (Area 2). On the other hand, IRCA may affect economic institutions by creating labor market opportunities or fostering resentment among natives causing them to pursue increased labor market restrictions, which should be evident in the EFNA's measure of labor

market freedom (Area 3). In order to understand how immigrant legalization under IRCA influenced economic institutional quality in California, we create synthetic controls using each of the three sub-areas of economic freedom. Figure 5 presents the results.

[Insert Figure 5 Here]

Figure 5A presents area 1 of economic freedom, government spending, with real versus synthetic California. Contrary to the Figure 1D above, area 1 diverges after legalization but does not experience convergence. This suggests that real California experienced an increase in government spending post-IRCA. The upward pressure on government expenditures created by IRCA's legal mandates, including legal status verification and access to public benefits, appears to persist over time.

Real California appears to be better in Area 2, taxes, compared to synthetic California, as shown in Figure 5B. Post-IRCA real California's area 2 economic freedom score is higher than synthetic California. Both converge around 1990 before separating with synthetic California scoring slightly higher around 1992. From 1994-1997, real California has a higher score than synthetic California, suggesting that legalizing immigration could *lower* not raise taxes. At a minimum, there is no evidence from this analysis to suggest that legalizing immigration will increase state-level tax burden.

Lastly, we examine labor market freedom in Figure 5C. This area most closely follows the overall economic freedom measure. Real California experiences a slight drop in labor market freedom post-1986 compared to where it would have been without IRCA. However, by 1993 real and synthetic California converge. Thus, there is no long-run impact of legalization on labor

market freedom. This result is particularly interesting in light of the fact that IRCA primarily legalized low-skilled immigrants, many of whom work in agriculture. This situation closely approximates the scenario posed by Borjas (2015), wherein low-skilled immigrants from low productivity countries migrate to high productivity countries bringing their institutions with them. It should be in labor markets, if anywhere, that the evidence for Borjas' claim should be most evident because low-skilled natives experience increased competition and may benefit from the protection of labor unions and/or increased minimum wage. However, we find no evidence to support this claim in the long-run.

Combined, our results from studying California with SCM suggests that legalizing immigration does not deteriorate institutions in the long run. However, there might be a short run decline, mainly driven by an increase in government spending. Given this, we are left asking how did IRCA lead to an increase in government spending in California? We now take a closer look at California's state and local government spending to provide a cursory examination of a few potential explanations.

Table 9 shows that California experienced a large increase in real government spending in 1990 around the same time that we observe the largest separation between synthetic California and the real California in our SCM results. At the same time, per capita income growth slowed and even declined in the following years as the U.S. entered a recession in 1990.

[Insert Table 9 Here]

Education spending increased by 4-5 percentage points in three consecutive years from 1989-1991. It is reasonable to conclude that at least some of this increase in spending was the

result of IRCA requirements for training in the English language and civics. The demand for English language training in California, which was provided by community colleges and others, outstripped supply (PEW p. 16).⁸ Because the increased demand for education was temporary and may have helped newly legalized immigrants better assimilate in the long run, this explanation is consistent with a short-run decrease and long-run convergence in California's economic freedom score.

Protection costs also increased significantly in 1990 (15.1 percent) and again in 1991 (16.0 percent). Again, the increase in protection costs may be at least partially explained by IRCA. Freedman et al. (2013) document increased crime rates among those who were ineligible for legal status under IRCA. California also sharply increased health care spending from 1990-1992, averaging nearly 20 percent in the growth of annual spending. IRCA recipients who were elderly, blind, disabled, or under the age of 18 were eligible for full Medi-Cal benefits effective October 1, 1988.⁹

Although this data are only anecdotal and suggestive, it does provide insight into how legalization of undocumented immigrants could alter state government expenditures.

5. Conclusion

The new economic case against relaxing migration restrictions argues that immigrants transmit economic institutions that led to low-productivity in their home countries. Therefore, we

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https://www.pewtrusts.org/~media/legacy/uploadedfiles/pes_assets/2014/ImmigrationandLegalizationReport2014pdf.pdf

⁹ https://files.medi-cal.ca.gov/pubsdoco/publications/masters-mtp/part1/obra_z01.doc

exploit the Immigration Reform and Control Act (IRCA) of 1986 as a natural experiment to determine if the mass legalization of three million previously undocumented illegal aliens has a detrimental effect on economic institutions in the U.S.

We find that immigration has no long-run effect on economic institutions among states of the U.S., although it may temporarily cause an increase in government spending relative to income. Therefore, our findings assuage concerns that amnesty of illegal immigrants will decrease productivity in the U.S. and buttress arguments that relaxed migration barriers leads to greater global economic efficiency.

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Table 1: IRCA Population Legalized by State, 1990

Notes. IRCA data is collected from Statistical Yearbook of the Immigration and Naturalization Service (1989, 1990, 1991, 1992). State population data are collected from IPUMS.

State	# IRCA immigrants	% of total legalized	% 1990 state population
California	1,439,266	53.6%	4.84%
Texas	409,905	15.3%	2.41%
New York	147,458	5.3%	0.82%
Illinois	144,095	5.4%	1.26%
Florida	142,964	5.3%	1.10%
Arizona	65,431	2.4%	1.79%
All other states	337,794	12.7%	0.22%

Table 2: Data and Summary Statistics, Difference-in-Differences Dataset

Notes. Economic freedom data are collected from Stansel et al. (2018), Economic Freedom of North America, Fraser Institute. BEA is Regional Economic Information System of the Bureau of Economic Analysis; IPUMS is US Census public-use microdata.

Variables	States	Years	Obs.	Mean	Std. Dev.	Min	Max	Data Source
Economic freedom	50	17	850	0.54	0.10	0.27	0.75	Stansel et al. (2018)
Government ideology	50	17	850	0.61	0.20	0.07	0.98	Berry et al. (2010)
Log GDP per capita (1997 dollars)	50	17	850	4.38	0.10	4.15	4.79	BEA
African American population (%)	50	17	850	0.10	0.09	0.00	0.36	BEA
Native born high school diploma (%)	50	17	850	0.79	0.08	0.54	0.92	IPUMS
Urbanization (%)	50	17	850	0.53	0.27	0.02	0.99	IPUMS
Naturalized (%)	50	17	850	0.02	0.05	0.00	0.41	IPUMS

Table 3: Impact of IRCA on Economic Freedom, Difference-in-Differences Estimation

Notes. Dependent Variable is Economic freedom, overall score. Top IRCA states include California, Texas, New York, Illinois, Florida, and Arizona. CA+TX is California plus Texas. Four IRCA states include New York, Illinois, Florida, and Arizona. CA is California. Each specification includes time-varying controls for government ideology, log GDP per capita, high school diploma (% native population), African American population (%), Urbanization (%) and share of population that is naturalized. Robust standard errors, in parentheses, are clustered by state. *** p<0.01, ** p<0.05, * p<0.10.

Dep. Var: Economic freedom	(1)	(2)	(3)	(4)
	Top IRCA States	CA+TX	Four IRCA States	CA
IRCA state X post-1986	-0.002 (0.013)	-0.018 (0.011)	0.005 (0.017)	-0.002 (0.009)
Government ideology	-0.001 (0.015)	-0.002 (0.015)	-0.001 (0.015)	-0.001 (0.015)
Log GDP per capita	0.634*** (0.173)	0.625*** (0.171)	0.638*** (0.173)	0.636*** (0.172)
High School Diploma (%)	-0.219 (0.221)	-0.218 (0.221)	-0.220 (0.222)	-0.221 (0.226)
African American	1.617** (0.755)	1.532** (0.776)	1.605** (0.775)	1.616** (0.766)
Urbanization (%)	-0.136 (0.088)	-0.133 (0.088)	-0.138 (0.088)	-0.136 (0.088)
Naturalized (%)	0.046 (0.067)	0.075 (0.060)	0.043 (0.067)	0.045 (0.068)
Constant	-2.332*** (0.766)	-2.275*** (0.766)	-2.343*** (0.765)	-2.338*** (0.766)
# observations	850	850	850	850
# states	50	50	50	50
Within R ²	0.52	0.53	0.52	0.52
Year FE	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes

Table 4: Data and Summary Statistics, Synthetic Control Method Dataset

Notes. Economic freedom is overall score and collected from Stansel et al. (2018), Economic Freedom of North America, Fraser Institute. BEA is Regional Economic Information System of the Bureau of Economic Analysis; IPUMS is US Census public-use microdata.

Variables	States	Years	Obs.	Mean	Std. Dev.	Min	Max	Source
Economic freedom	CA	17	17	4.46	0.24	4.09	4.74	Stansel et al. (2018)
Economic freedom	CA, TX	17	17	4.94	0.21	4.55	5.16	Stansel et al. (2018)
Economic freedom	NY, IL, FL, AZ	17	17	5.28	0.32	4.80	5.79	Stansel et al. (2018)
Economic freedom	CA, TX, NY, IL, FL, AZ	17	17	5.02	0.22	4.66	5.27	Stansel et al. (2018)
Economic freedom	44 Donor States	17	748	5.35	0.94	2.91	7.51	Stansel et al. (2018)
Log GDP per capita	CA	17	17	4.45	0.03	4.40	4.50	BEA
Log GDP per capita	CA, TX	17	17	4.44	0.03	4.39	4.50	BEA
Log GDP per capita	NY, IL, FL, AZ	17	17	4.42	0.04	4.35	4.49	BEA
Log GDP per capita	CA, TX, NY, IL, FL, AZ	17	17	4.44	0.03	4.39	4.50	BEA
Log GDP per capita	44 Donor States	17	748	4.38	0.10	4.15	4.79	BEA
Native born high school diploma (%)	CA	17	17	0.86	0.04	0.79	0.90	IPUMS
Native born high school diploma (%)	CA, TX	17	17	0.84	0.04	0.76	0.89	IPUMS
Native born high school diploma (%)	NY, IL, FL, AZ	17	17	0.80	0.05	0.71	0.87	IPUMS
Native born high school diploma (%)	CA, TX, NY, IL, FL, AZ	17	17	0.83	0.04	0.75	0.89	IPUMS
Native born high school diploma (%)	44 Donor States	17	748	0.79	0.08	0.54	0.92	IPUMS
Naturalized (%)	CA	17	17	0.01	0.04	0.00	0.41	IPUMS
Naturalized (%)	CA, TX	17	17	0.01	0.04	0.00	0.33	IPUMS
Naturalized (%)	NY, IL, FL, AZ	17	17	0.01	0.02	0.00	0.11	IPUMS
Naturalized (%)	CA, TX, NY, IL, FL, AZ	17	17	0.01	0.03	0.00	0.28	IPUMS
Naturalized (%)	44 Donor States	17	748	0.01	0.01	0.00	0.10	IPUMS
Urbanization (%)	CA	17	17	0.95	0.01	0.93	0.96	IPUMS
Urbanization (%)	CA, TX	17	17	0.91	0.01	0.89	0.93	IPUMS
Urbanization (%)	NY, IL, FL, AZ	17	17	0.83	0.02	0.82	0.86	IPUMS
Urbanization (%)	CA, TX, NY, IL, FL, AZ	17	17	0.89	0.01	0.87	0.91	IPUMS
Urbanization (%)	44 Donor States	17	748	0.49	0.26	0.02	0.99	IPUMS

Table 5: Estimated synthetic control weights for economic freedom

Notes. Top IRCA states include California, Texas, New York, Illinois, Florida, and Arizona. CA+TX is California plus Texas. Four IRCA states include New York, Illinois, Florida, and Arizona. CA is California. We synthesize IRCA state(s) with five predictor variables: log GDP per capita (BEA), share of native population with at least a high school diploma (IPUMS), share of naturalization (IPUMS), economic freedom in 1981, and economic freedom in 1985.

	Top IRCA States	CA + TX	Four IRCA States	CA
Alaska	0.00	0.00	0.00	0.03
Colorado	0.05	0.10	0.00	0.00
Hawaii	0.15	0.27	0.00	0.54
Louisiana	0.00	0.00	0.09	0.00
Michigan	0.00	0.00	0.00	0.23
New Jersey	0.53	0.41	0.67	0.20
Washington	0.16	0.19	0.00	0.00
West Virginia	0.00	0.00	0.01	0.00
Wyoming	0.10	0.03	0.23	0.00
Sum	1.00	1.00	1.00	1.00

Table 6: Indicator Goodness of Fits

Notes. Top IRCA states include California, Texas, New York, Illinois, Florida, and Arizona. CA+TX is California plus Texas. Four IRCA states include New York, Illinois, Florida, and Arizona. CA is California. We synthesize IRCA state(s) with five predictor variables: log GDP per capita (BEA), share of native population with at least a high school diploma (IPUMS), share of naturalization (IPUMS), economic freedom in 1981, and economic freedom in 1985.

	Top IRCA States		CA + TX		Four IRCA States		CA		Donor Pool
	Real	Synthetic	Real	Synthetic	Real	Synthetic	Real	Synthetic	Average
Log GDP per capita	4.402	4.398	4.407	4.411	4.364	4.392	4.415	4.415	4.380
High school diploma (%)	0.776	0.776	0.786	0.787	0.738	0.745	0.813	0.782	0.785
Naturalization (%)	0.165	0.043	0.185	0.039	0.091	0.046	0.221	0.033	0.008
Economic Freedom (1981)	4.769	4.737	4.748	4.738	4.824	4.804	4.125	4.125	5.021
Economic Freedom (1985)	5.149	5.193	5.113	5.143	5.255	5.267	4.608	4.607	5.275
RMSPE	0.03		0.02		0.03		0.02		

Table 7: Estimated synthetic control weights for economic freedom

Notes. Top IRCA states include California, Texas, New York, Illinois, Florida, and Arizona. CA+TX is California plus Texas. Four IRCA states include New York, Illinois, Florida, and Arizona. CA is California. We synthesize IRCA state(s) with five predictor variables: log GDP per capita (BEA), share of native population with at least a high school diploma (IPUMS), share of urbanization (IPUMS), economic freedom in 1981, and economic freedom in 1985.

	Top IRCA States	CA + TX	Four IRCA States	CA
Alaska	0.00	0.00	0.00	0.02
Colorado	0.00	0.11	0.00	0.00
Hawaii	0.18	0.29	0.00	0.55
Louisiana	0.04	0.00	0.08	0.00
Maryland	0.00	0.00	0.15	0.00
Michigan	0.00	0.00	0.00	0.24
Nevada	0.07	0.00	0.00	0.00
New Jersey	0.41	0.36	0.28	0.20
Pennsylvania	0.00	0.00	0.23	0.00
Washington	0.30	0.25	0.26	0.00
Sum	1.00	1.00	1.00	1.00

Table 8: Indicator Goodness of Fits

Notes. Top IRCA states include California, Texas, New York, Illinois, Florida, and Arizona. CA+TX is California plus Texas. Four IRCA states include New York, Illinois, Florida, and Arizona. CA is California. We synthesize IRCA state(s) with five predictor variables: log GDP per capita (BEA), share of native population with at least a high school diploma (IPUMS), share of urbanization (IPUMS), economic freedom in 1981, and economic freedom in 1985.

	Top IRCA States		CA + TX		Four IRCA States		CA		Donor Pool
	Real	Synthetic	Real	Synthetic	Real	Synthetic	Real	Synthetic	Average
Log GDP per capita	4.402	4.407	4.407	4.407	4.364	4.36	4.415	4.413	4.38
High school diploma (%)	0.776	0.777	0.786	0.79	0.738	0.737	0.813	0.781	0.785
Urbanization (%)	0.878	0.832	0.892	0.834	0.82	0.819	0.936	0.799	0.486
Economic Freedom (1981)	4.769	4.772	4.748	4.747	4.824	4.819	4.125	4.125	5.021
Economic Freedom (1985)	5.149	5.17	5.113	5.113	5.255	5.251	4.608	4.607	5.275
RMSPE	0.018		0.014		0.02		0.02		

Table 9: California State and Local Government Spending

Notes. State and local spending data is from https://www.census.gov/library/publications/time-series/statistical_abstracts.html and <https://www.census.gov/programs-surveys/gov-finances.html>.

Year	Annual GDP Growth	Annual Population Growth	Total Spending Growth	Education Spending Growth	Welfare Spending Growth	Protection Spending Growth	Health Care Spending Growth	Pension Spending Growth
1986	3.0%	2.3%	7.1%	5.3%	3.2%	15.3%	5.8%	3.0%
1987	4.2%	2.3%	5.5%	4.7%	0.1%	7.4%	3.8%	3.7%
1988	3.0%	2.3%	1.3%	0.5%	3.2%	8.4%	5.3%	2.5%
1989	1.2%	2.3%	0.1%	4.1%	0.6%	-10.1%	0.2%	2.4%
1990	0.8%	2.3%	7.7%	5.4%	4.5%	15.1%	8.4%	4.1%
1991	-2.5%	1.3%	4.4%	4.1%	13.1%	1.9%	10.1%	1.1%
1992	-1.4%	1.3%	5.8%	-1.7%	6.7%	16.0%	37.9%	30.8%
1993	-1.3%	1.3%	0.1%	-3.2%	2.5%	-1.9%	2.7%	8.0%
1994	0.7%	1.3%	-0.2%	-4.7%	-4.7%	2.0%	4.9%	-6.1%
1995	2.3%	1.3%	1.1%	2.5%	1.4%	2.9%	-1.9%	10.9%

Figure 1: Economic freedom and IRCA States, Synthetic Control Method

Notes. Economic freedom is the overall score from Stansel et al. (2018). Top IRCA states include California, Texas, New York, Illinois, Florida, and Arizona. Four IRCA states include New York, Illinois, Florida, and Arizona. We synthesize IRCA state(s) with five predictor variables: log GDP per capita (BEA), share of native population with at least a high school diploma (IPUMS), share of naturalization (IPUMS), economic freedom in 1981, and economic freedom in 1985.

Figure 1A: Economic freedom and Top IRCA States

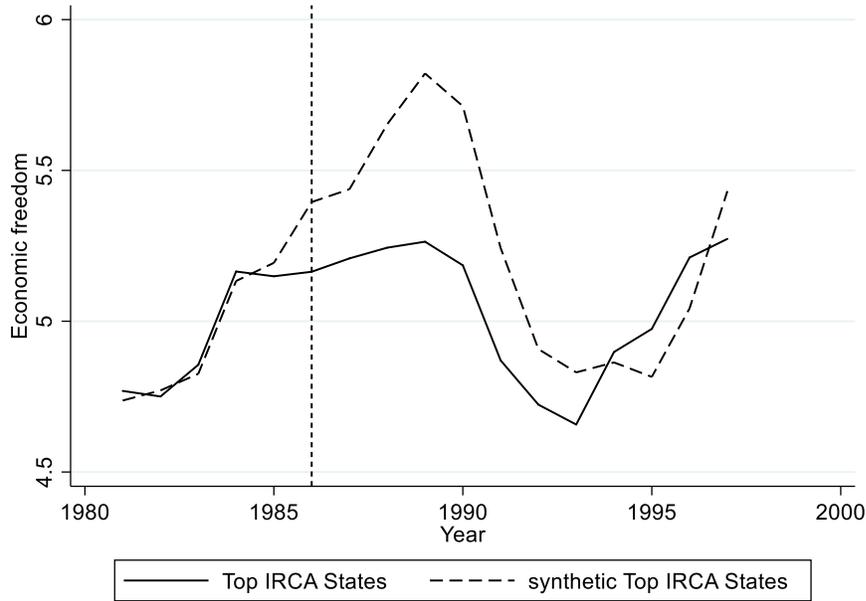


Figure 1B: Economic freedom and California plus Texas

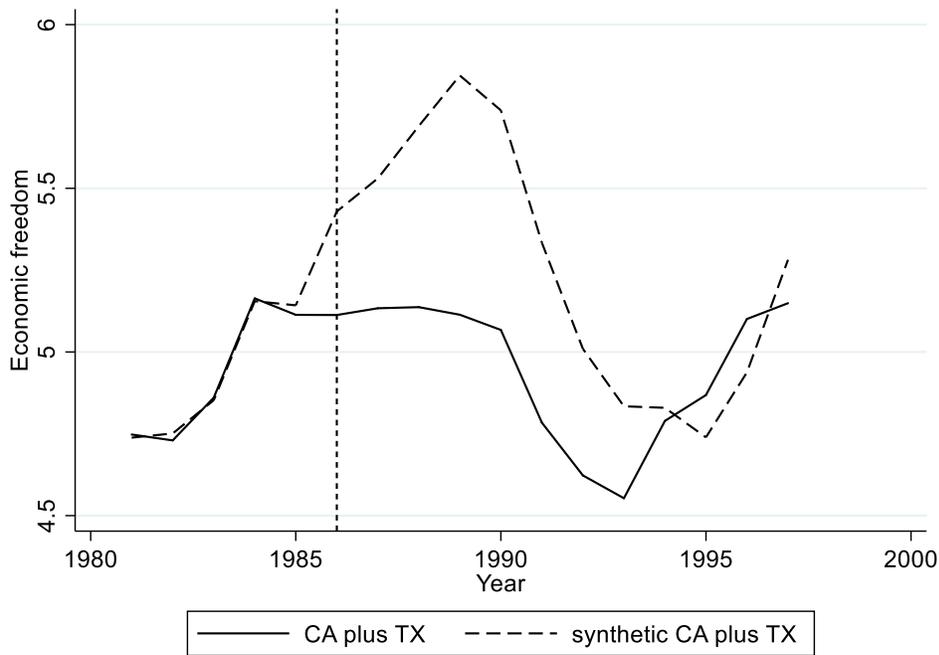


Figure 1C: Economic freedom and Four IRCA States

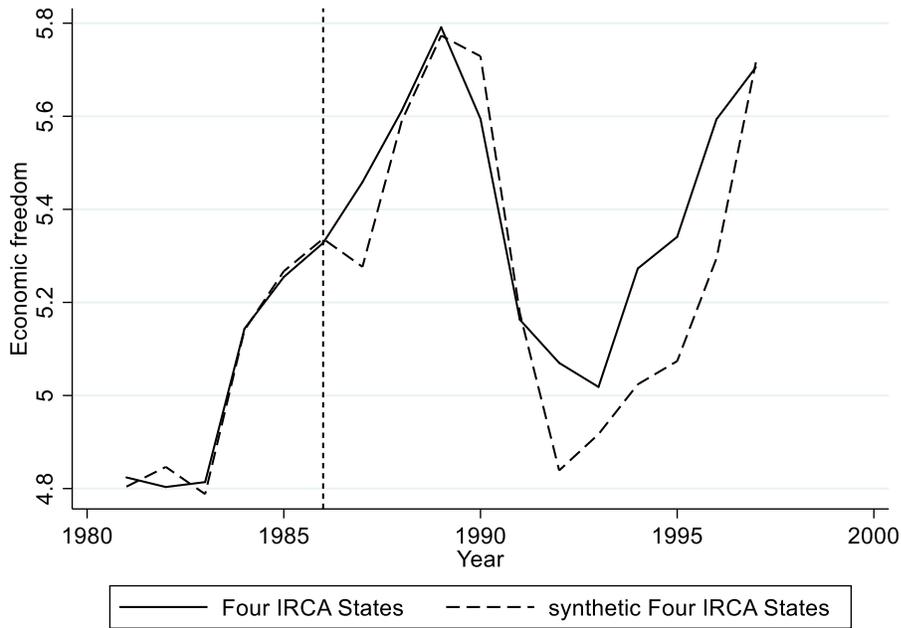


Figure 1D: Economic freedom and California

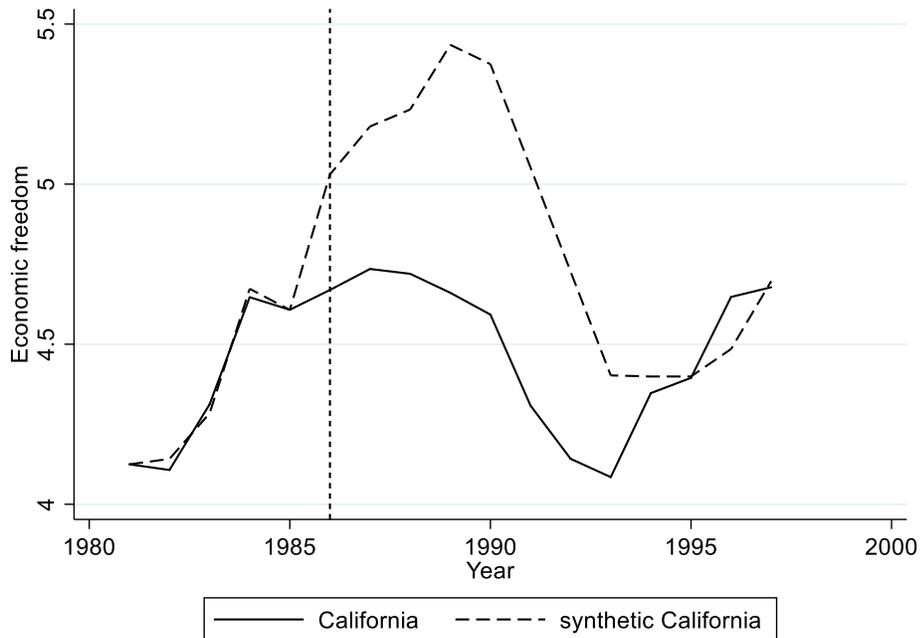


Figure 2: Economic freedom and IRCA States, Synthetic Control Method, Robustness Check

Notes. Economic freedom is the overall score from Stansel et al. (2018). Top IRCA states include California, Texas, New York, Illinois, Florida, and Arizona. Four IRCA states include New York, Illinois, Florida, and Arizona. We synthesize IRCA state(s) with five predictor variables: log GDP per capita (BEA), share of native population with at least a high school diploma (IPUMS), share of urbanization (IPUMS), economic freedom in 1981, and economic freedom in 1985.

Figure 2A: Economic freedom and Top IRCA States

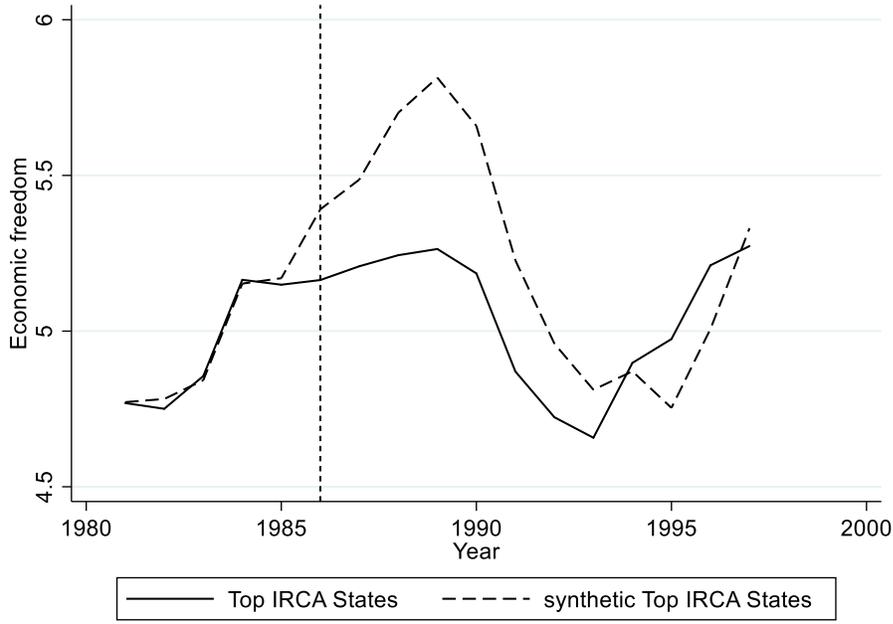


Figure 2B: Economic freedom and California plus Texas

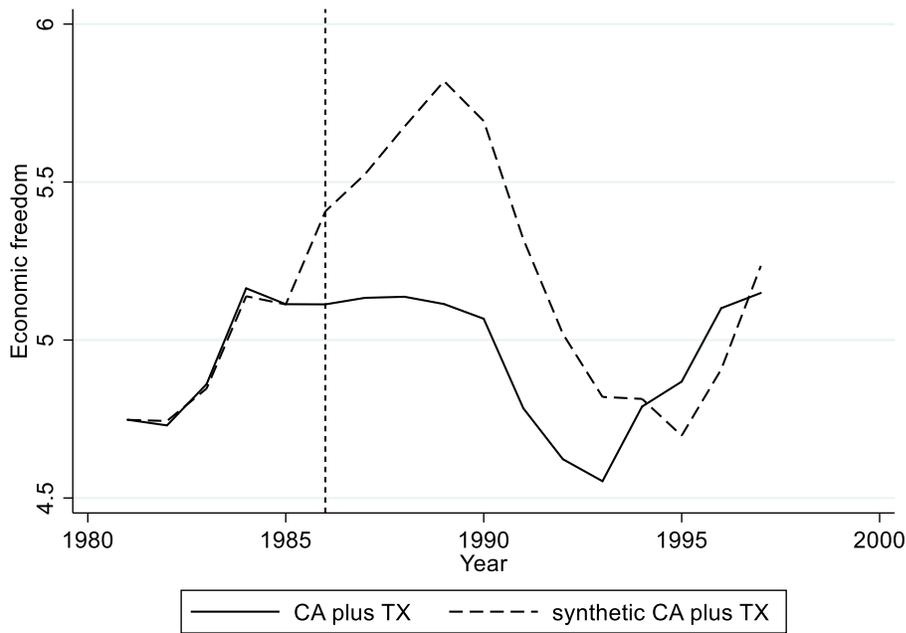


Figure 2C: Economic freedom and Four IRCA States

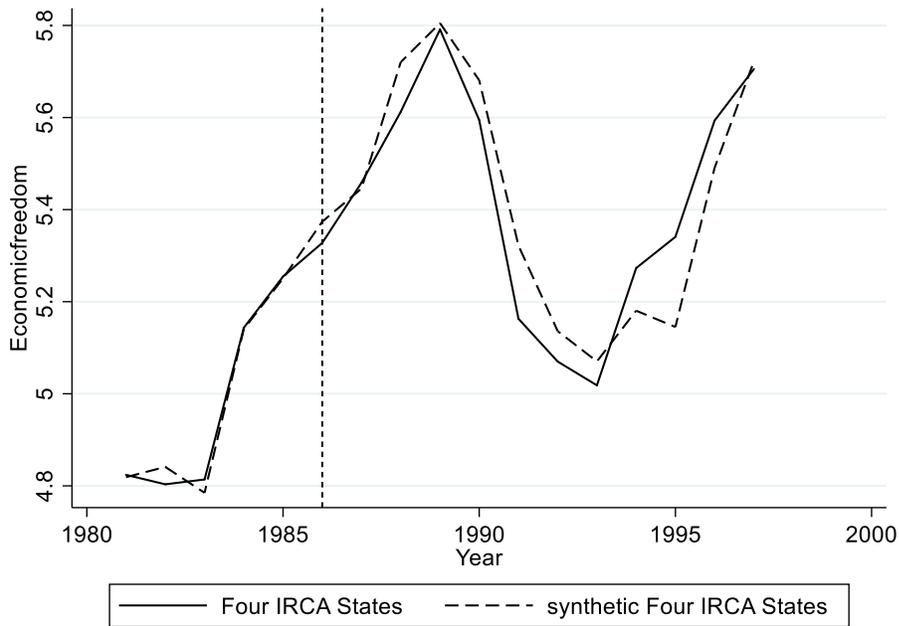


Figure 2D: Economic freedom and California

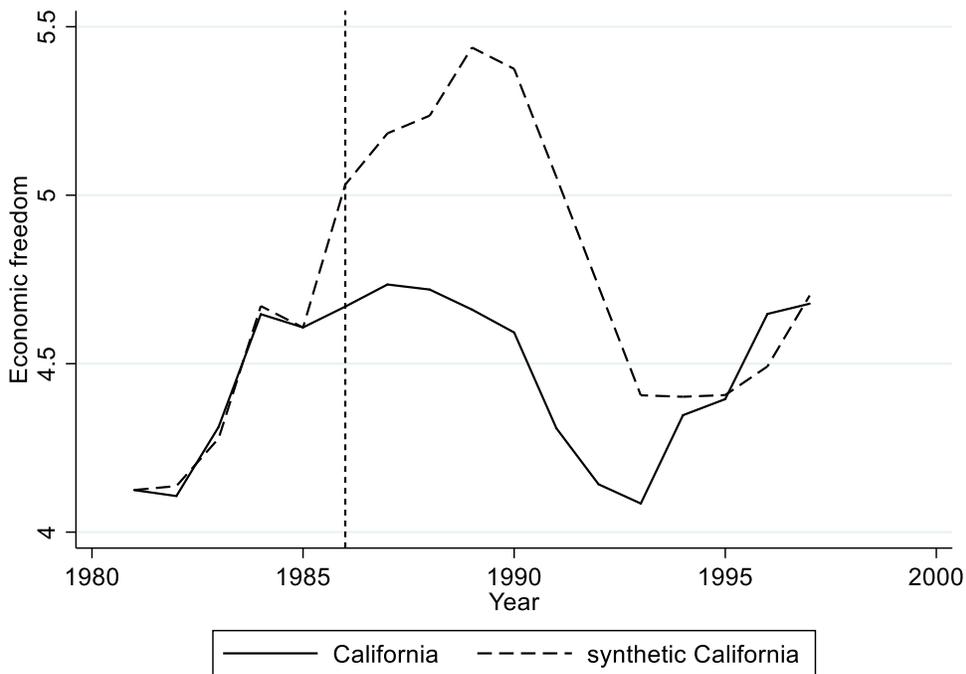


Figure 3: Economic freedom Trends by IRCA States and Donor Pool

Notes. Economic freedom is the overall score from Stansel et al. (2018). Top IRCA states include California, Texas, New York, Illinois, Florida, and Arizona. We synthesize IRCA state(s) with five predictor variables: log GDP per capita (BEA), share of native population with at least a high school diploma (IPUMS), share of naturalization (IPUMS), economic freedom in 1981, and economic freedom in 1985.

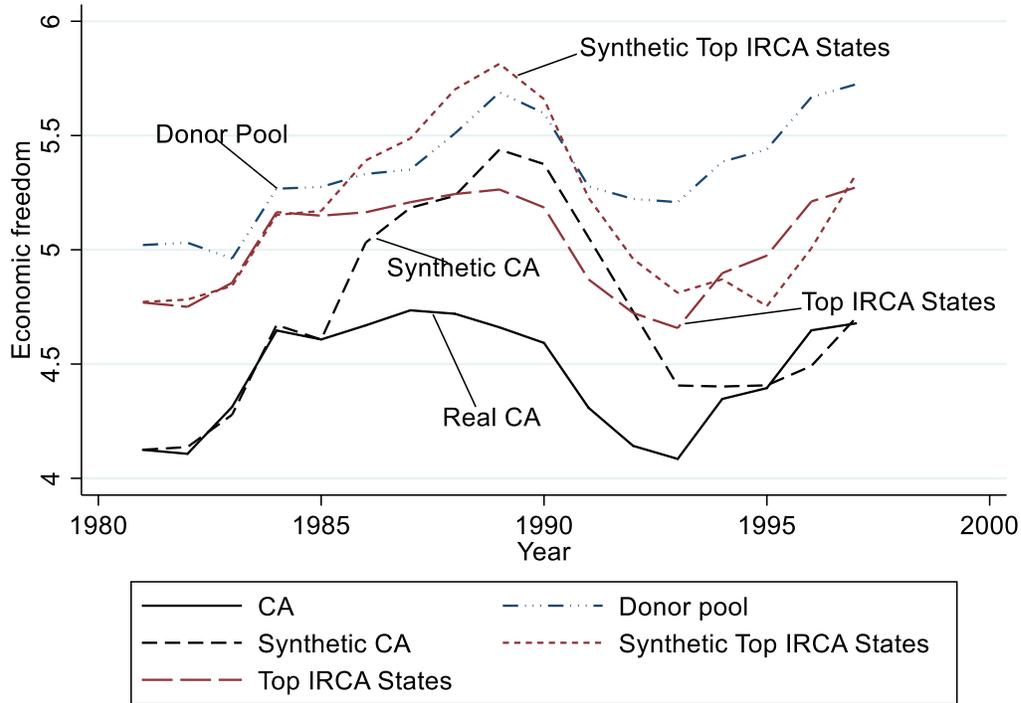


Figure 4: Economic freedom and California, Robustness Checks

Figure 4A: In-time placebo: if the event happened in 1983

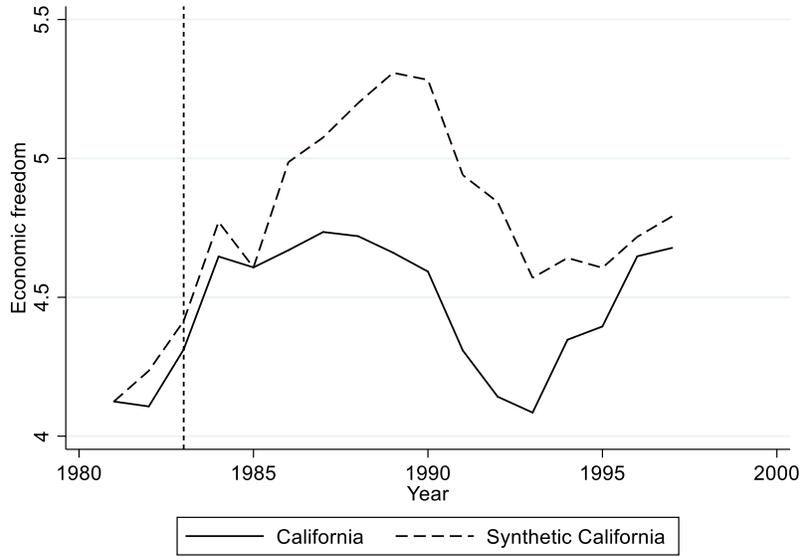


Figure 4B: In-space placebo test

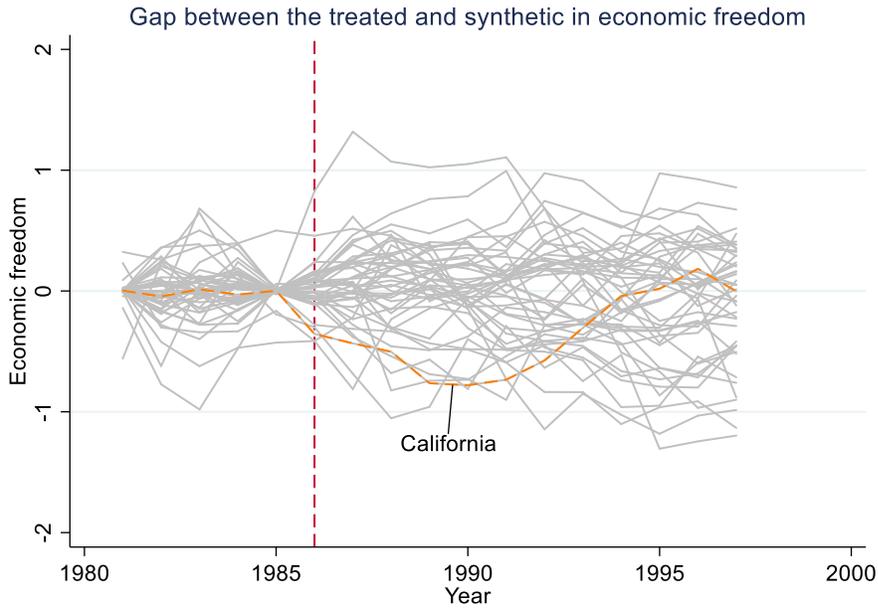


Figure 4C: Leave one out

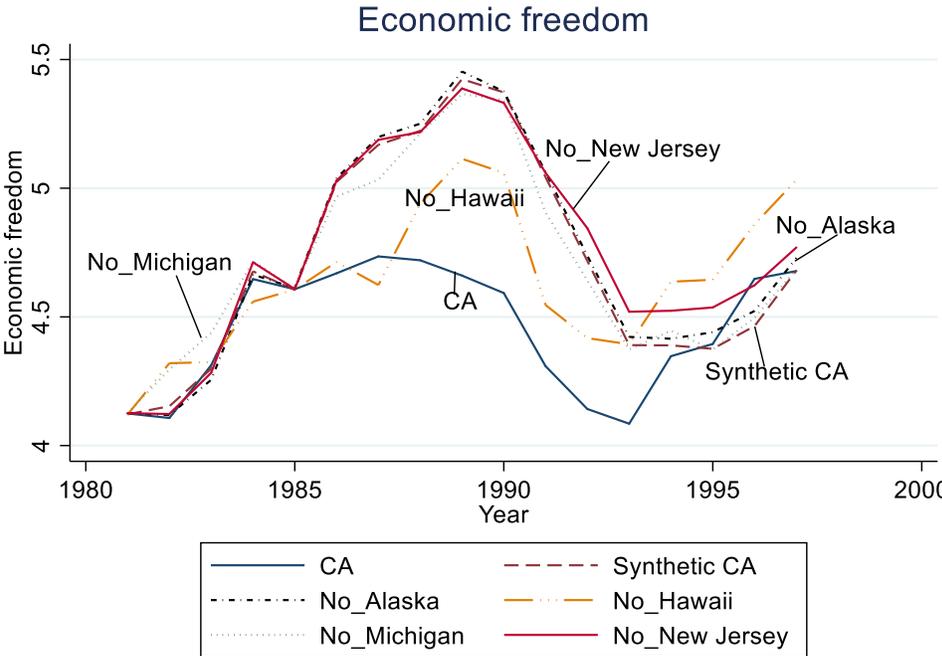


Figure 5: Economic freedom Sub-indices and California

Figure 5A: Government Spending in California

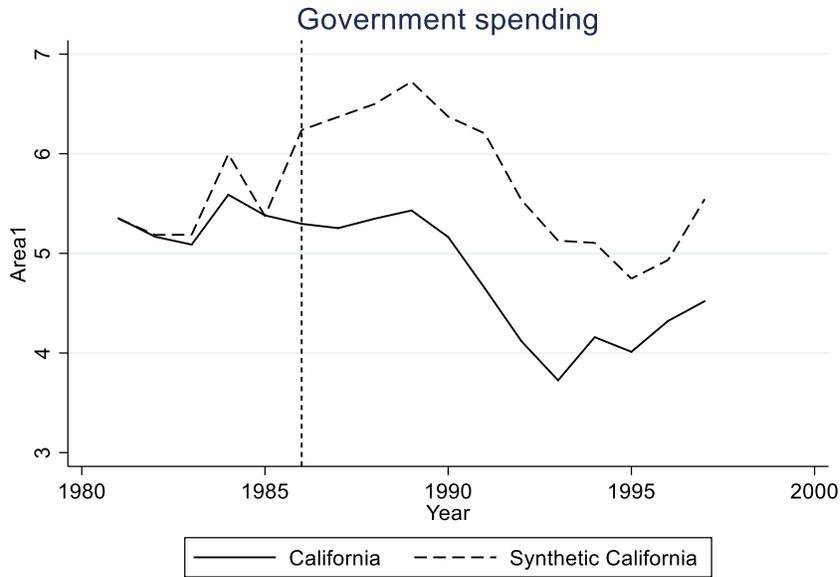


Figure 5B: Taxes in California

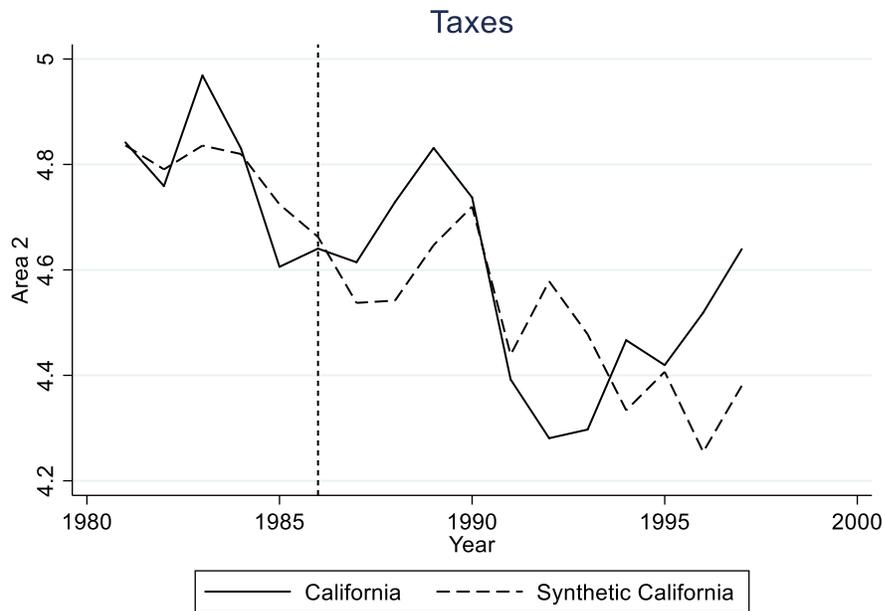
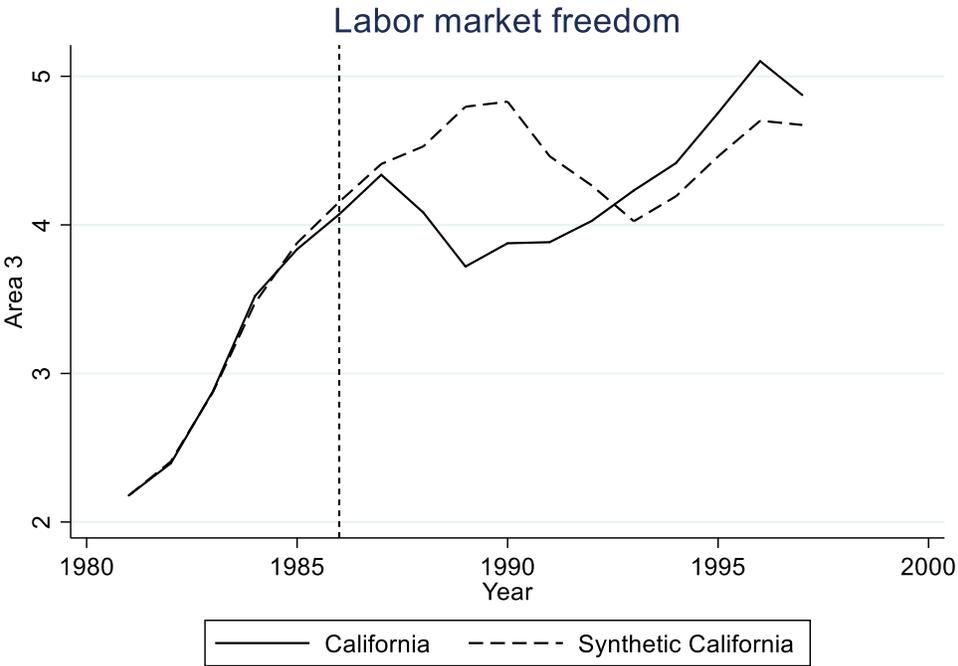


Figure 5C: Labor market freedom in California



Appendices

Appendix 1: Economic freedom and Texas

Notes. We synthesize with five predictor variables: log GDP per capita (BEA), share of native population with at least a high school diploma (IPUMS), share of naturalization (IPUMS), economic freedom in 1981, and economic freedom in 1985.

Panel A: Indicator Goodness of Fits			
	Treated	Synthetic	Average
Log GDP per capita	4.379	4.295	4.380
High school diploma (%)	0.692	0.779	0.785
Naturalized (%)	0.056	0.002	0.008
Economic Freedom (1981)	6.931	6.353	5.021
Economic Freedom (1985)	6.886	7.189	5.275
RMSPE	0.419		
Panel B: Estimated synthetic control weights for economic freedom			
States	Weights		
New Hampshire	1		
Sum	1		

Appendix 2: Economic freedom and Texas, SCM with Naturalization

Notes. We synthesize with five predictor variables: log GDP per capita (BEA), share of native population with at least a high school diploma (IPUMS), share of naturalization (IPUMS), economic freedom in 1981, and economic freedom in 1985.

