

**The Labor Market Impact of State-Level Immigration Legislation Targeted at
Unauthorized Immigrants**

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Abstract

In this paper, we evaluate the impact of state immigration legislation targeting employment on the employment levels, population, and employment rates for working age natives and immigrants. Our quasi-experimental estimator relies on comparing average outcome levels for the six months before the legislation passes to the six months following passage in states enacting such laws relative to states within the comparable census regions that do not pass immigration legislation. We present separate estimates for working-age adults by race/ethnicity, by nativity, and by citizenship status. We find significant declines in state employment, population, and in many instances, employment rates for Hispanics in states that pass such legislation. The adverse impacts of these laws are generally concentrated on non-citizens from Latin American countries of all education levels, a group that loses both employment as well as population in adopting states relative to non-adopting states. We also observe relative employment declines among foreign-born Hispanic citizens with a high school degree or less, but no corresponding population loss. This result is sensible, as these immigrants have no legal reason to leave states adopting these laws, yet are perhaps most likely to be confused with undocumented immigrants by employers. When we alter the definition of the pre-period to the six-months preceding legislative enactment, we find similar relative declines in employment and population for Latinos. However, with this alternative timing, the adverse patterns are concentrated on native-born Latinos. In all models, we find little evidence of an adverse impact of these laws on the employment, population, and employment rates of non-Latino racial/ethnic groups.

1. Introduction

Along with the large increase in the foreign-born population residing in the United States, there has been a concurrent increase in the size of the unauthorized immigrant population. Since the 1986 passage of the Immigration Reform and Control Act (IRCA) (legislation that at the time adjusted the legal status of unauthorized immigrants in the U.S. wiping the slate clean for most) the undocumented immigrant population subsequently grew to approximately 3 million in 1990 and to roughly 10 million by 2004 (Passel, 2005). Since 1986, there has been no comprehensive federal legislation intended to address the issue of unauthorized immigration, despite official debate in Washington. In fact, the country finds itself in much the same position that it did in 1986. There is a strong desire to gain control of immigrant flows into the country and to discourage future unauthorized immigration. At the same time, the nation must address the outstanding issue of the 10 million unauthorized immigrants residing in the U.S. in a practical and humanitarian manner.

The last few years have witnessed a sea change in the traditional relationship between federal and state governments when it comes to immigration policy. Absent new federal law, several states have passed legislation meant to control and deter unauthorized immigrants within their jurisdiction. The provisions of these state laws vary, with some requiring that state contractors verify the identity and the eligibility to work of all employees and others making unauthorized employment a felony. The intention of these laws is to increase the costs to employers and undocumented immigrants of unauthorized employment and to shift labor demand to authorized workers. Given the relatively low skills of undocumented immigrants, proponents of such state legislation argue that strict enforcement should improve the labor market prospects of low-skilled natives and similar legal foreign residents.

The ability of these state laws to achieve these objectives, however, is limited by several considerations. First, there is fairly convincing evidence that low-skilled natives and immigrants are not perfectly substitutable for one another in production (Card 2009, Ottaviano and Perri 2008). When this is the case, the employment prospects of natives are to a certain degree shielded from those of the foreign born. Moreover, there are certainly some natives that are complementary to immigrants in production, a group who would be harmed by a reduction in immigrant labor. Second, to the extent that immigrants from states imposing such legislation leave for neighboring states, any short term gains experienced by natives in one state may be offset by short term losses to natives in neighboring states, as internal migrations simply moves immigrants around. Finally, employers that face sanctions for hiring the undocumented may choose overly risk-averse employment strategies, such as not hiring any Hispanics with suspect legal status. Such statistical discrimination may eventually harm many native as well as legal foreign residents.

In this paper, we evaluate the impact of state immigration legislation targeting employment on the employment levels, population, and employment rates for working age natives and immigrants. Using monthly data from the Current Population Surveys (CPS) from 2006 to 2008, we fashion a series of simple pre-post comparisons of changes in key outcomes for states passing punitive legislation relative to states that do not. Our quasi-experimental estimator relies on comparing average outcome levels for the six months before the legislation passes to the six months following passage in states enacting such laws relative to states within the comparable census regions that do not pass immigration legislation. We present separate estimates for working-age adults by race/ethnicity, by nativity, and by citizenship status.

We find significant declines in state employment, population, and in many instances, employment rates for Hispanics in states that pass such legislation. The adverse impacts of these laws are generally concentrated on non-citizens from Latin American countries of all education levels, a group that loses both employment as well as population in adopting states relative to non-adopting states. We also observe relative employment declines among foreign-born Hispanic citizens with a high school degree or less, but no corresponding population loss. This result is sensible, as these immigrants have no legal reason to leave states adopting these laws, yet are perhaps most likely to be confused with undocumented immigrants by employers. When we alter the definition of the pre-period to the six-months preceding legislative enactment, we find similar relative declines in employment and population for Latinos. However, with this alternative timing, the adverse patterns are concentrated on native-born Latinos. In all models, we find little evidence of an adverse impact of these laws on the employment, population, and employment rates of non-Latino racial/ethnic groups.

2. The Effect of State-Level Immigration Legislation on State Labor Markets

Recently, there has been an unprecedented level of state legislative activity in the immigration policy domain. During the first six months of 2008, state legislatures passed 175 immigration-related pieces of legislation, compared to only 38 during 2005 (National Conference of State Legislatures, 2008). Figure 1 shows the monthly average number of immigration legislation enacted by states between 2005 and 2008.

The set of state legislative activity is broad and touches on several policy areas, including employment, health, education, identification, licenses, law enforcement, voting, and human trafficking. In this paper we focus on legislation pertaining to employment, and in particular,

those regulations that target employers. Table 1 displays states that have passed immigration legislation directly affecting employers along with the respective dates of implementation, number of regulations, and the severity of the legislation. We construct the list based on Immigration Works (2008) and the National Conference of State Legislatures annual reports on immigration law (2006, 2007, and 2008).

A total of sixteen states have enacted immigration legislation targeting employment, with 12 already implementing the provisions of the new laws. Note there is a great deal of variation in the timing of passage and implementation. Colorado was the first, requiring any person or entity that has entered into a public contract with the state on or after August 2006 to certify that it has verified the legal status of all new hires using the federal government's Basic Pilot Program. Mississippi and Virginia implemented the provisions of their laws in July 2008. In three states, Missouri, South Carolina and Utah, the regulations would become effective in 2009. Oklahoma constitutes a special case. While the first phase of the legislation was scheduled to go into effect in November 2007, a court challenge has held up implementation. To date, Oklahoma has yet to implement the provisions of its bill. In most states, new regulations are part of an omnibus law with all elements becoming effective on the same date. However, in Colorado, Georgia, Mississippi, Oklahoma, South Carolina and Tennessee, elements of the legislation are phased in at different dates. Usually, firms with more employees are required to comply with regulations at an earlier date.

In addition to variation in timing, there is a great deal of substantive variation in the provisions of these laws. Rhode Island, for example, only requires businesses contracting with the state to use the federal E-Verify system to confirm worker's immigration status. Arizona, on the other hand, requires all employers to use E-Verify, and also revokes businesses licenses of

employers who hire unauthorized workers. Mississippi has arguably one of the strictest laws, making it a felony for unauthorized workers to work in the state.

To gauge variation in legislative severity, we created two severity indices, both of which we use in the empirical work below. First, we calculate a simple un-weighted sum of the provisions of each state's laws. Presumably, those states with more provisions have more severe laws. Second, we qualitatively ranked each of the provisions of these laws on a scale from one to five based on our reading of the severity and punitive degree of each (these subjective ranking are presented in Table 2). To fashion a severity index, we tabulated a weighted sum of provisions, effectively summing the severity scores across provisions within a given piece of legislation.

Interestingly, the two measures of severity are closely related. In our empirical work below both also yield similar results. Thus, to gauge legislative severity we focus primarily on the simpler sum of legislative provisions.

The potential impacts of punitive state legislation targeted at undocumented immigrants are likely to vary by nativity, ethnicity, and the interaction of these two dimensions. To the extent that employers can distinguish the undocumented from the documented, state laws punishing employers who hire the undocumented can be modeled as increasing the relative costs of hiring unauthorized workers. Standard labor demand theory predicts that this would induce two reinforcing effects on the demand for undocumented immigrants and two offsetting effects on demand for other workers. Regarding the undocumented, legislation increasing the relative costs of hiring the unauthorized should induce both employer substitution towards other workers as well as a general reduction in employment associated with the higher compliance costs. These substitution and scale effects should unambiguously reduce demand for the unauthorized.

However, theory does not yield an unambiguous prediction for other groups of workers. To the extent that authorized immigrants and specific groups of the native-born are easily substitutable in production for undocumented immigrants, employer substitution will boost labor demand for such workers and ultimately impact their average employment and earnings. However, the size of this substitution effect will be smallest for those who are the least like the unauthorized. In fact, there are certain labor groups that are likely to be complementary in production with unauthorized labor, implying that irrespective of the scale of production in the economy, an increase in the cost of hiring unauthorized workers would actually harm these natives.

For all workers, even those that are close substitutes for the unauthorized, higher compliance costs should result in an overall reduction in employment. Hence, offsetting substitution and scale effects do not permit predicting a priori the impact of these laws on documented immigrants and the native born. Theory does suggest however, that those authorized workers most similar in skill to the unauthorized stand to gain the most.

When employers cannot easily distinguish the documented from the undocumented, the potential impacts of such state legislation are complicated by the likelihood that employers form probabilistic assessments of the legal status of specific applicants and then act on those assessments. Specifically, if employers cannot tell with certainty who is and who isn't authorized, employers may infer legal status through such visible signals as ethnicity, accent, or surname. Some employers wishing to reduce the probability of being fined or of having their business licenses revoked may avoid hiring applicants from specific groups altogether. Given the imperfect signal of legal status, such statistical discrimination would likely impact both

native and foreign-born applicants authorized to work in the U.S. Of course, such statistical discrimination is most likely to impact native-born and legal foreign-born Hispanics.

Concern that sanctions targeted towards the hiring of unauthorized immigrants would result in employment discrimination against Hispanics is not new. In fact, this was a key point of contention in the legislative debate surrounding the 1986 IRCA. IRCA introduced several provisions intended to control undocumented immigration. In addition to two amnesty programs for undocumented immigrants,¹ IRCA made it illegal to hire unauthorized workers, created the legal obligation for employers to verify the identity and work eligibility of all applicants, and introduced a series of graduated sanctions for employers that failed to comply with the verification, record keeping, and hiring provisions of the law. Opponents of the legislation expressed concern that these provisions would lead to discrimination against all Hispanics. Indeed, there is some research finding that in the immediate aftermath of IRCA's passage, the hourly earnings of Latinos did decline (Bansak and Raphael 2001).

A key difference between the mid 1980s and the present time is the absence of a federal system for verifying identity and work eligibility. During the 1980s, employees were required to present one of a number of pieces of identification to comply with IRCA, many of which were little known documents issued by the then Immigration and Naturalization Service (INS). In the current period, the federal E-Verify system is available to employers, which ideally should provide unambiguous and accurate information regarding the work-eligibility of applicants. Several reports, however, suggest that the E-Verify system has its own flaws. According to the American Immigration Lawyers Association (2008), the fundamental problem remains the fact

¹ IRCA included a General Amnesty for undocumented immigrants who could demonstrate continuous residence in the U.S. for a fixed period of time and a Special Agricultural Worker Program for immigrants with a demonstrated attachment to U.S. agriculture in the year preceding the legislations passage. See Bansak and Raphael (2001) for further details.

that the Department of Homeland Security (DHS) must run the identity data it receives against the Social Security Administration (SSA) database. But the purpose and function of the SSA database was not meant for immigration enforcement. Moran (2007) argues that the SSA database has 17.8 million records that contain discrepancies that could result in a person (immigrant or U.S. citizen) being wrongly identified as not authorized for employment. According to Westat (2007), less than 1 percent of natives but almost 10 percent of foreign-born U.S. citizens verified by the federal Web Basic Pilot between October 2006 and March 2007, received an erroneous non-confirmation.

The potential for statistical discrimination adds a third partial effect of these state laws that again should vary with the observable characteristics of job applicants. Employers wishing to avoid the risk of hiring undocumented workers may reduce their hiring of Latino applicants and increase their hiring of applicants who are deemed lower risk for whatever reason. Since it is impossible a priori to predict the net effects on employment of the channels discussed here, analyzing the impacts of these laws must involve empirical analysis. Thus, we now turn to our empirical estimation strategy.

3. Data and Methodology

We evaluate the impacts of state laws targeted at limiting the employment of unauthorized migrants on employment outcomes in the following manner. For each state that has passed legislation, we define a one-year evaluation window consisting of the six months prior to the law's implementation and the six months following the law's implementation, inclusive of the month of implementation. Next, we identify all states that do not implement such legislation during the specific policy window. This can include states that will eventually

pass and implement such legislation. Our principal empirical strategy is to compare the pre-post implementation change in states passing immigration laws to the temporally corresponding pre-post change in comparisons states that do not pass such laws. Note, this is quite similar to the identification strategy employed by Autor, Donohue, and Schwab (2006) in their analysis of exceptions to the employment-at-will doctrine on state employment levels.

Define $Employment_{it}$ as the log of the number of people in state i in month t who report being “employed at work”, $Population_{it}$ as the log of the relevant base population, and $Employment\ Rate_{it}$ as the log of the employment-to-population ratio. These three variables are our dependent variables of analysis. Further, define the variable Law_{it} as an indicator variable equal to one if state i has implemented an immigration law in month t . This variable can also be defined in terms of a severity index, with higher values corresponding to more stringent legislation. Our basic econometric specification takes the form

$$Y_{it} = \alpha + \beta Law_{it} + \lambda_i + \delta_t + \varepsilon_{it}, \tag{1}$$

where Y_{it} is a place-holder for one of our three outcome variables, λ and δ are state and month-year fixed effects; and ε_{it} is a mean-zero disturbance term. To allow for common regional economic shocks, we also include a complete set of interaction terms between month-year dummies and indicator variables denoting the four major Census geographic regions. All estimates are weighted by the number of people employed (when the dependent variable is log of employment), and by the population (when the dependent variable is log of population or log of employment rate). In all models we compute standard errors clustering by state to control for serial correlation.

The key coefficient in equation (1) is β . This parameter gives an estimate of the extent to which pre-post implementation change in the outcome variable observed among states implementing immigration reform differs from the comparable change for states that do not. For example, if the dependent variable is the employment rate for native-born Hispanics, a significant negative coefficient would imply that the employment rate for this group declined in states passing such laws relative to the comparable Hispanic employment rate among states that do not. The inclusion of state-specific fixed effects indicates that we have swept out all time-invariant differences across states that contribute to cross-state variation in outcomes. The inclusion of the month-specific fixed effects basically controls for national-level month-to-month movements in the state of the economy. By interacting these time effects with broad census-region indicators, we allow for differential regional economic trends.

We test for separate effects on employment and population, and then the joint effect on the employment-to-population ratio to assess whether certain groups may be migrating (either out of the country or to other states) in response to the legislation. Comparable declines in employment and population would be missed in an analysis of the employment-to-population ratio only. Moreover, one might expect variation in the responsiveness along these two margins for different groups. Undocumented immigrants might be more likely to leave the state and try their luck elsewhere. Hence, for this group both employment and population are likely to be impacted. Native-born Hispanics on the other hand have no legal reason to leave. Hence, while employment levels may be impacted by statistical discrimination, one may not expect to see large population movements in the short term.

The key identification assumption behind the estimator in equation (1) is that the path of the outcome variable in states not passing legislation charts out the counterfactual path that the

outcome would have taken had immigration reform not been implemented. While it is impossible to evaluate whether this assumption holds, we can indeed point out some potential threats to its validity. For one, it may be the case that the state economies in the comparison group do not chart the economic conditions experience by treatment states. While allowing for separate time effects by census region addresses this issue to a certain degree, it may be the case that even neighboring states experience separate and uncorrelated economic shocks. Second, to the extent that population is moving from one state to the next in response to reform, member states of the comparison group may be impacted by the treatment via such population spillovers. One might further hypothesize that neighboring states in the comparison group may be more likely to be impacted through such channels. Thus, there is a tradeoff in the identification strategy. More precise geographic matching is more likely to align treatment and comparison states facing more similar economic shocks. However, spillover effects on state labor markets are perhaps more likely to impact the same neighboring states.

To measure employment and population we use data from all months of the Current Population Survey (CPS) for the years 2006, 2007, and 2008. We calculate employment totals using all those who indicate that they are “employed at work”. Population is measured for everyone meeting our sample selection criteria. Finally, we calculate state level employment rates as the ratio of employment-to-population. In all cases we restrict the sample to people between 20 and 60 years old. We aggregate individuals (weighting each observation by its sample weight) by state, month, year, citizenship status, race and education. We classify people into three distinct citizenship groups (i.e., foreign-born noncitizen, foreign-born citizen, and native); into two education groups (i.e., complete high school or less, and some college or more); and into three race groups (i.e., Hispanic, White only, and Black only).

For the legal variables, we initially experimented with three measures of state immigration legislation targeting employers. The first measure is a simple indicator variable equal to one if the state has implemented any immigration legislation targeting employers and equal to zero otherwise. We also estimated models using the number of immigration regulation as well as the severity index presented in Table 1. The results using the severity index are almost identical to those obtained using the simple count of regulations.² Hence, below we present results using the count of regulation only. In years preceding implementation, this variable is set to zero.

The timing requirement that we have six months on either side of the policy implementation month means that we use only a subset of the states listed in Table 1. In particular, this restriction implies that the treatment group includes 9 out of the 16 states: Arizona, Arkansas, Colorado, Georgia, Idaho, Minnesota, Nevada, Tennessee and West Virginia. We exclude Rhode Island, Mississippi and Virginia because in these states the legislation has been implemented less than 6 months before the latest available CPS survey (August 2008). In Missouri, South Carolina and Virginia, the date of implementation is 2009. Finally, we exclude Oklahoma because while the legislation should have become effective in November 2007, it still does not apply because it is being challenged in court.³

4. Results

Before proceeding with the econometric analysis, we present a graphical analysis that (1) highlights our estimation strategy and (2) illustrate the general patterns in the data that we explore in greater detail with our regression analysis. Figure 2 presents the evolution of

² The ideal measure would be an indicator for each regulation allowing estimating the effect of each regulation on the labor market. Regrettably, this is not possible because most states have implemented all regulations at the same time.

³ Including Oklahoma does not affect the results in any substantive manner.

employment in the treatment group states relative to the comparison group states for three citizenship groups: natives, foreign-born citizens, and foreign-born noncitizens. Employment is computed as the ratio between log employment in the adopting states over log employment in the comparison group. The ratio is indexed to one as of the date of implementation. Figure 3 presents a comparable figure for three race groups: Hispanic, White and Black. Figure 3 includes all individuals in each group regardless of nativity and citizenship status. In both figures, the sample is restricted to workers with a high school diploma or less.

Figure 2 reveals fairly stable employment among the native-born. There is no obvious mean difference in relative employment levels between the before and after periods, and no notable break in trend at the time point of intervention. The series for foreign-born U.S. citizens and non-citizens are considerably more variable, largely due to higher sampling variation in these data relative to the larger populations of native. Despite this variability, there is little evidence of a mean impact of the legislation on employment.

Figure 3, however, reveals some notable patterns. First, for the overall Hispanic employment level the relative employment in adopting states prior to adoption is above one for three of the six months and below one for three of the six months. In each of the six months following adoption, the relative employment ratio falls below. For non-Hispanic whites, there appears to be a temporary increase in employment the first month post-adoption. However, average employment appears comparable for the two periods and the temporary increase may simply reflect sampling variation. Similarly, there is little evidence of a post-implementation employment increases among African-Americans.

Table 3 presents estimates of equation (1) for employment, population and the employment rate. The sample is restricted to workers with a high school diploma or less. In odd columns we

report the estimates obtained using a binary indicator of the adoption of state law, while in the even columns the key dependent variable is the number of regulation adopted. The coefficients reported in the table are each from a separate regression model and represent the difference-in-difference estimator, β , from equation (1). The first panel includes all workers; the second panel presents estimates for each citizenship group; and the third panel for each race.

The first row of estimation results (pertaining to all workers in this skill level regardless of race, nativity, or citizenship status) shows that states adopting immigration legislation do not experienced a clear change in their employment level, relative populations, or employment rates relative to non-adopting states. While the point estimates in all models are negative, they are all small relative to the standard errors and statistically insignificant. However, adopting immigration legislation appears to affect the composition of employment. The second set of regression results by nativity and citizenship status shows a relative reduction in employment among foreign-born noncitizens (almost significant), and a positive effect of the laws foreign-born citizens when the number of regulations is the key legislative independent variables (column 2). The results also reveal a significant positive effect of the number of regulations on the population of foreign-born citizens.

The final set of results in the table yield the strongest patterns. We observe a roughly 8 percent decline in the relative employment of Hispanics (significant at the 5 percent level) and a 6 percent decline in the low-skilled Hispanic population (significant at the 10 percent level). As the decline in relative employment levels exceeds the comparable population decline, the relative employment-to-population ratio among Hispanics in this skill category declines by approximately 2 percent (significant at the 10 percent level). We observe no significant relative changes among non-Hispanic whites and non-Hispanics blacks in this skill group.

To explore these results in greater detail, we re-estimated the models in Table 3 for each of the nine population categories defined by interacting the three nativity-citizenship status groups with the three defined race-ethnicity groupings. The results are presented in Table 4. For foreign-born, non-citizens, we observe an approximate ten percent decline in the relative employment level of Hispanics and a nine percent decline in the relative state resident population. Note, this group contains both authorized as well as unauthorized immigrants. For this group, the net decline in the employment-to-population ratio is statistically insignificant. For white non-citizens there is a significant increase in the employment rate, while there is a comparable significant decline for black non-citizens.

Among foreign-born citizens, the relative log employment decline among Hispanic is considerably more modest. However, the resident population for this group does not change for those in adopting states relative to non-adopting states. Consequently, the relative employment-to-population ratio in adopting states declines significantly for Hispanic foreign-born citizens. Interestingly, this group has no legal reason to leave the states, as the employment prohibitions do not apply to them. Moreover, in terms of nationality and skill levels, these foreign-born citizens are perhaps the most likely to be confused with unauthorized immigrants. The significant relative decline in their employment rate is suggestive of statistical discrimination against this population of legal workers. We observe no such relative declines among foreign-born citizens who are white or black.

The final panel presents results for natives. While there is one statistically significant negative coefficient for Hispanic natives (when the count of regulations is used as the dependent variable in the log employment equation), the results generally suggest that there is little

evidence of an impact for any of the outcomes and for any of the three racial/ethnic group among the native born.

We have focused on the effects on low-skilled workers. We focus primarily on those with a high school degree or less due to the fact that roughly 75 percent of undocumented workers fall within this educational attainment range (Passel, 2005). However, we also investigated whether there are comparable effects for workers with some college or more. Table 5 presents these results (the table is structured identically to Table 4). The most notable findings in the table are the estimated negative effects of legislation adoption on the employment rate for Hispanic foreign-born, non-citizens. Despite insignificant and poorly-measured estimates on relative log employment and relative log population for this group, the impacts on relative employment rates are significant using both dependent variables.

5. Are the Results Sensitive to the Defined Timing of Intervention?

The results thus far suggest that the passage of state-level legislation intended to control undocumented immigration has adversely impacted the employment of foreign born Hispanics, with the largest effects on non-citizens but notable effects on foreign-born citizens. The tabulations thus far have relied on a number of specification decisions that deserve further exploration. In particular, our choice of timing suggests that the impact of these laws correspond to the timing of implementation rather than the timing of enactment. To the extent that employers and workers alter their behavior with the passage of legislation, our results may be sensitive to this specification choice.

Here we present further analysis that alters the timing choices of analysis. We begin in Table 6 by altering the definition of the pre-intervention period. Rather than defining the pre-

period as the six months preceding legislative implementation, here we define the pre-period as the six months preceding the passage of the legislation. One might expect larger impacts using the pre-enactment period than the pre-implementation period if employers and workers likely to be impacted by the legislation act in anticipation of the legislation's implementation. The results reveal several patterns that differ somewhat from those presented in Table 4. First, we find little evidence of an impact on foreign-born Hispanics. While the point estimates of the difference-in-difference estimates for employment, population, and the employment rate are all negative they are imprecisely estimated and statistically insignificant. We do, however, observe significant negative effects on relative log employment, log population, and employment rates for native-born Hispanics.

Table 7 alters the pre-period to occur six to eleven months prior to legislative implementation. Focusing on this earlier time period means that the calendar months used for the pre-period correspond exactly the calendar months used for the post period. To the extent that there are important seasonal influences not captured by the month effects, the results may be sensitive to this choice. The results in Table 7 parallel those in Table 6. We observe negative difference-in-difference estimates for relative employment and population for foreign-born non-U.S. citizens. However, most of these results are statistically insignificant. Similar patterns are observed for foreign-born Hispanic citizens. We do observe significant and negative different-in-difference estimates for log employment, population, and employment rates for Hispanic natives.

Hence, the results are somewhat sensitive to the variation in the specification of the pre and post periods. One thing that these additional results have in common with our base

specifications in Tables 3 through 5 is that the only group adversely affected by the legislation is Hispanics, although these alternative models show the largest impacts on Hispanic natives

6. Are these Laws Exogenous?

The reliability of the above estimates depends on the exogeneity of the immigration legislation with respect to changes in labor market outcomes. One plausible confounding factor that may be driving the adverse relative employment trends for Latinos is that states that implemented immigration legislation experienced larger increases in discriminatory attitudes against Latinos and noncitizens compared to other states. If these unobserved changes in discriminatory attitudes made their own contribution towards relative deterioration in employment among those groups, then, the presented coefficients overestimate the causal effect of immigration legislation.

This hypothesis is not easy to test, but data collected by the Pew Hispanic Center suggests that is not relevant. The National Survey of Latinos (NSL) conducted from April to June 2002, shows that Latinos in states that subsequently adopted immigration legislation reported similar, or even lower, levels of discrimination than Latinos in non-adopting states.⁴ As shown in Table 8, 29 percent of Latinos in adopting states report that they, a family member, or a close friend, suffered discrimination because of their racial background compared to 32 percent of Latinos in non-adopting states. Similar evidence results from comparing reported discrimination between adopting and non-adopting states located in the same Census region.

However, it could be that the *change* in discrimination in adopting states was higher than in non-adopting states. Fortunately, the Pew Hispanic Center included the same question in the

⁴ The NLS is a nationally representative survey that includes 2,929 Latinos 18 years and older.

2007 NSL. This survey was conducted from October to November, a few months after all adopting states in the South and West regions implemented the immigration legislation. Minnesota is the only adopting state in the analyzed sample that implemented the legislation afterwards. Unfortunately, the 2007 NSL does not include information on respondent's state of residence; the survey only includes broad region identifiers. Therefore, we compare the change in discrimination against Latinos in the South and West (i.e., the two regions where some states implemented immigration legislation) with the change in the Midwest and North East (i.e., the two regions where no states had implemented legislation as of the 2007 NLS).

Panel A in Table 7 shows that the increase in self-reported discrimination against Latinos is 56 percent (from 31.7 to 49.5) in the Midwest and North East compared to 23 percent (from 31.3 percent to 38.5) in the South and West. This is strong evidence against the argument that unobserved changes in discriminatory attitudes explain the estimated negative impact of immigration regulations on Latino employment.

The 2002 and 2007 NSL surveys also include a specific question regarding discrimination in the workplace. Interestingly, Latinos in the South and West report a larger percentage increase in workplace discrimination (42 percent) than Latinos in the Midwest and North East (38 percent). One plausible interpretation of these figures is that immigration legislation caused an increase in employer discrimination against Latinos in states that otherwise would have experienced a relative reduction in discrimination.

7. Conclusion

The results of this study are several. Analyzing the six months preceding and the six months following the implementation of state legislation designed to eliminate employment

opportunities for unauthorized immigrants, we find significant declines in the employment and resident Hispanic population, with most of these declines concentrated among foreign-born Hispanics who are not citizens. We also find declines in the employment rate of foreign-born Latinos who are U.S. citizens, but no corresponding population declines.

In a separate set of results where we alter the definition of the pre-period to either pre-legislative enactment or to the calendar months corresponding to the post period (6 to 11 months prior to implementation), we find substantial and significant declines in log employment and the employment rates of native-born Latinos. The difference-in-difference point estimates for the foreign-born Hispanic population are similar to what we observe using our initial definition of the pre-period, but these estimates are poorly measured and generally insignificant.

All results find adverse effects on Latinos only, regardless of which sub-segment of this population group is impacted. While unauthorized aliens are certainly in this group (as the undocumented are overwhelmingly from Latin American countries), the results of this study suggest that the induced declines in employment and population have extended beyond the undocumented population, to foreign-born Latino citizens and perhaps to natives.

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**Figure 1: Enacted State Legislation Related to Immigration
(Number of Enactments, monthly average)**

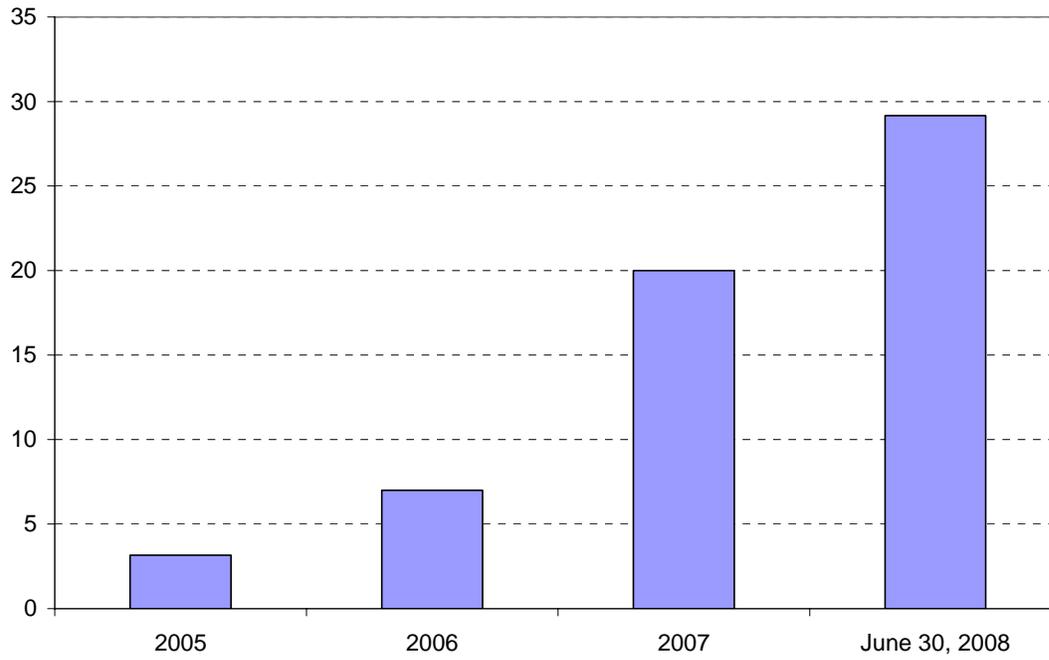


Figure 2: Evolution of Employment in Treatment Group relative to Comparison Group by Citizenship status. Pre-Post Implementation of State Immigration Legislation

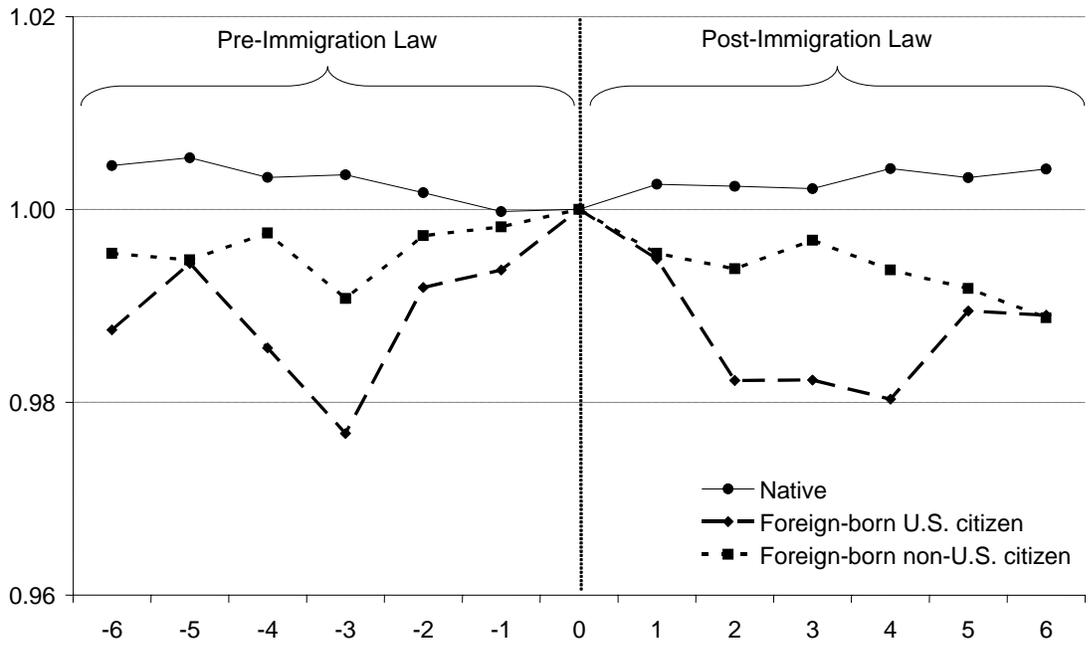


Figure 3: Evolution of Employment in Treatment Group relative to Comparison Group by Race. Pre-Post Implementation of State Immigration Legislation

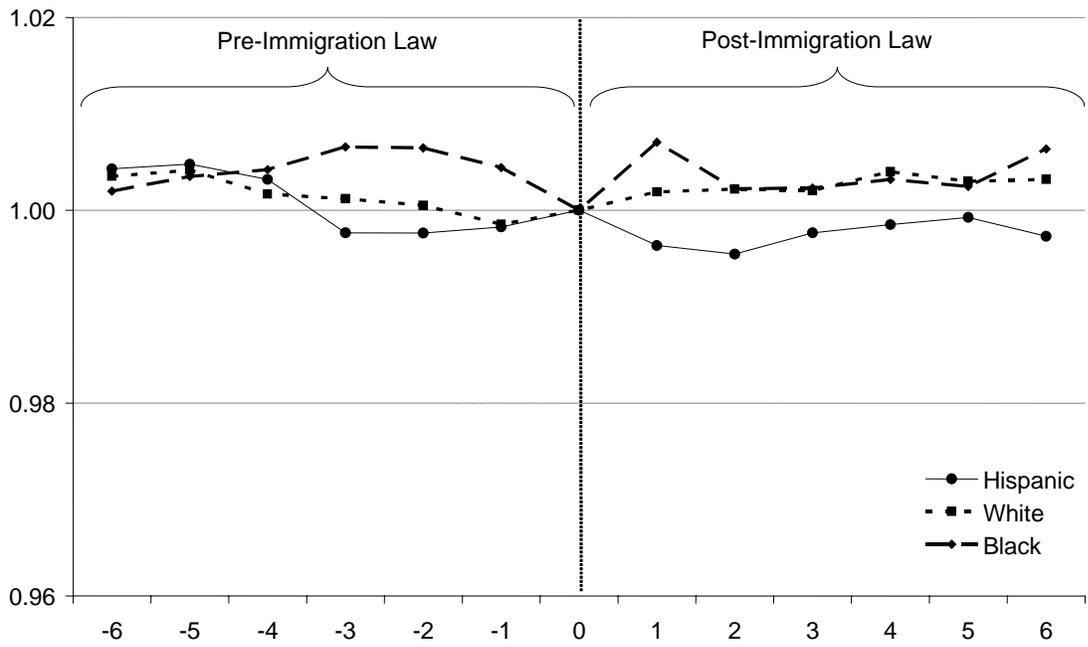


Table 1 – List of States with Immigration Legislation Targeting Employers, Date of Implementation, Number of Regulations and Severity

State	Dates of Implementation	No. Regulations	Severity Index
Arizona	July 2007	4	12
Arkansas	August 2007	1	1
Colorado	August 2006 (January 2007)	1 (4)	3 (10)
Georgia	July 2007	2	5
Idaho ^(a)	January 2007	1	3
Minnesota ^(a)	February 2008	1	3
Mississippi	July 2008	6	20
Missouri	January 2009	6	15
Nevada	October 2007	1	4
Oklahoma ^(b)	November 2007 (July 2008)	1 (4)	3 (12)
Rhode Island ^(a)	April 2008	1	3
South Carolina	January 2009 (July 2009)	7 (8)	18 (23)
Tennessee	January 2007 (January 2008)	1 (3)	1 (5)
Utah	July 2009	3	8
Virginia	July 2008	2	4
West Virginia	June 2007	4	10

Notes: ^(a) Executive Order; ^(b) Challenged in Court

Table 2 – Index of Severity of State Immigration Legislation

Regulation	Score (1 to 5, where 5 is the most severe)
Outlaws knowingly hiring unauthorized workers	1
Requires state contractors to certify they will not knowingly employ unauthorized workers	1
Outlaws harboring or transporting illegal immigrants	2
Prohibits employers from deducting wages paid to unauthorized immigrants on their state income tax return	2
Allows terminated employees to sue if they are replaced by illegal immigrants	3
Suspends and can also revoke business license of employers who knowingly hire unauthorized workers	3
Requires businesses contracting with the state to use E-Verify	3
Threatens employers who violate state immigration law with fines and jail	4
Requires all employers in the state to use E-Verify	5
Makes it a felony to work illegally	5

Table 3- Labor Market Effects of State-level Immigration Legislation

	Employment		Population		Employment Rate	
	(1)	(2)	(3)	(4)	(5)	(6)
All	-0.012 (0.012)	-0.004 (0.005)	-0.011 (0.010)	-0.003 (0.004)	-0.001 (0.005)	-0.001 (0.002)
Foreign-born non-U.S. citizen	-0.070 (0.047)	-0.013 (0.016)	-0.061 (0.040)	-0.009 (0.013)	-0.006 (0.012)	-0.002 (0.003)
Foreign-born U.S. citizen	0.100 (0.075)	0.064*** (0.015)	0.109 (0.080)	0.068*** (0.015)	-0.003 (0.024)	-0.0003 (0.006)
Natives	-0.005 (0.010)	-0.005 (0.004)	-0.005 (0.010)	-0.005* (0.003)	0.0002 (0.006)	-0.0004 (0.002)
Hispanic	-0.076** (0.032)	-0.015 (0.010)	-0.058* (0.030)	-0.009 (0.008)	-0.016* (0.009)	-0.005** (0.002)
White	0.017 (0.012)	0.006 (0.006)	0.011 (0.011)	0.003 (0.005)	0.006 (0.007)	0.003 (0.003)
Black	-0.006 (0.021)	-0.010 (0.010)	-0.004 (0.019)	-0.001 (0.009)	-0.010 (0.018)	-0.015 (0.013)

Note: Each entry is from a separate weighted OLS regression in which the dependent variable is the log of the state-month outcome described at the top of the column. The sample is restricted to people aged 20-60 with high school diploma or less. In odd columns the proxy for immigration legislation is an indicator equal to 1 if the state implemented any regulation against employers' hiring undocumented workers, and in even columns the proxy is the number of regulations implemented. All models include state, Census-region, and yearXmonth indicators, and the interaction between region dummies and yearXmonth. Models in column 1 and 2 are weighted by the number of people employed in each state-yearXmonth cell, and the other models are weighted by the population. Huber-White robust standard errors in parentheses allow for unrestricted error correlations across observations within states. Treatment sample in each panel includes observations for 1-6 months prior to and 1-6 months following adoption of immigration legislation. Comparison sample includes maximal set of observations for corresponding calendar months from states that did not adopt immigration legislation before or during the relevant pre- or post-treatment time interval. * Significant at the 0.1 level, ** at the 0.05 level, *** at the 0.01 level.

Table 4- Labor Market Effects of State-level Immigration Legislation, Low-skilled

	Employment		Population		Employment Rate	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Panel A: Foreign-born non-U.S. citizen</i>						
Hispanic	-0.099*	-0.020	-0.087*	-0.016	-0.009	-0.003
	(0.050)	(0.017)	(0.044)	(0.013)	(0.013)	(0.003)
White	0.180	0.078*	0.089	0.054	0.170***	0.042
	(0.135)	(0.046)	(0.139)	(0.051)	(0.048)	(0.025)
Black	0.142	0.067	0.281**	0.126***	-0.234*	-0.102
	(0.189)	(0.063)	(0.134)	(0.042)	(0.130)	(0.061)
<i>Panel B: Foreign-born U.S. citizen</i>						
Hispanic	-0.030	-0.002	0.039	0.029***	-0.063*	-0.027***
	(0.043)	(0.008)	(0.055)	(0.010)	(0.032)	(0.006)
White	0.551***	0.251***	0.554***	0.234***	0.068	0.040
	(0.195)	(0.023)	(0.133)	(0.021)	(0.115)	(0.033)
Black	0.188	0.099	0.064	0.038	0.232***	0.111***
	(0.182)	(0.072)	(0.151)	(0.059)	(0.047)	(0.017)
<i>Panel C: Natives</i>						
Hispanic	-0.044	-0.014**	-0.026	-0.010	-0.011	-0.002
	(0.035)	(0.006)	(0.030)	(0.006)	(0.018)	(0.003)
White	0.008	0.001	0.006	-0.001	0.003	0.002
	(0.010)	(0.004)	(0.010)	(0.004)	(0.007)	(0.003)
Black	-0.020	-0.021	-0.020	-0.013	-0.008	-0.017
	(0.022)	(0.016)	(0.017)	(0.008)	(0.021)	(0.016)

Note: Each entry is from a separate weighted OLS regression in which the dependent variable is the log of the state-month outcome described at the top or the column. The sample includes individuals aged 20-60 with high school diploma or less, grouped in nine categories defined by citizenship status and race. In odd columns the proxy for immigration legislation is an indicator equal to 1 if the state implemented any regulation against employers' hiring undocumented workers, and in even columns the proxy is the number of regulations implemented. All models include state, Census-region, and yearXmonth indicators, and the interaction between region dummies and yearXmonth. Models in column 1 and 2 are weighted by the number of people employed in each state-yearXmonth cell, and the other models are weighted by the population. Huber-White robust standard errors in parentheses allow for unrestricted error correlations across observations within states. Treatment sample in each panel includes observations for 1-6 months prior to and 1-6 months following adoption of immigration legislation. Comparison sample includes maximal set of observations for corresponding calendar months from states that did not adopt immigration legislation before or during the relevant pre- or post-treatment time interval. * Significant at the 0.1 level, ** at the 0.05 level, at the 0.01 level.

Table 5- Labor Market Effects of State-level Immigration Legislation, High-skilled

	Employment		Population		Employment Rate	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Panel A: Foreign-born non-U.S. citizen</i>						
Hispanic	-0.137 (0.093)	-0.059** (0.029)	-0.081 (0.093)	-0.039 (0.024)	-0.064** (0.026)	-0.027*** (0.005)
White	0.033 (0.160)	0.017 (0.059)	0.065 (0.152)	0.030 (0.052)	0.005 (0.042)	-0.001 (0.012)
Black	0.062 (0.110)	-0.002 (0.074)	-0.111 (0.113)	-0.067 (0.068)	0.165*** (0.048)	0.068*** (0.025)
<i>Panel B: Foreign-born U.S. citizen</i>						
Hispanic	0.092 (0.086)	0.026 (0.025)	0.044 (0.124)	0.003 (0.036)	0.084** (0.038)	0.032*** (0.008)
White	0.284** (0.108)	0.104** (0.044)	0.180** (0.068)	0.063** (0.025)	0.127* (0.064)	0.054** (0.026)
Black	0.148** (0.073)	0.062 (0.038)	0.134 (0.092)	0.043 (0.040)	0.125** (0.054)	0.073*** (0.019)
<i>Panel C: Natives</i>						
Hispanic	-0.058 (0.039)	-0.012 (0.016)	-0.044 (0.035)	-0.009 (0.011)	-0.014 (0.015)	-0.005 (0.005)
White	0.020 (0.012)	0.010** (0.005)	0.020** (0.009)	0.008** (0.003)	0.001 (0.007)	0.001 (0.003)
Black	0.023 (0.036)	0.013 (0.018)	0.022 (0.022)	0.016 (0.012)	0.001 (0.029)	-0.003 (0.011)

Note: Each entry is from a separate weighted OLS regression in which the dependent variable is the log of the state-month outcome described at the top or the column. The sample includes individuals aged 20-60 with some college or more, grouped in nine categories defined by citizenship status and race. In odd columns the proxy for immigration legislation is an indicator equal to 1 if the state implemented any regulation against employers' hiring undocumented workers, and in even columns the proxy is the number of regulations implemented. All models include state, Census-region, and yearXmonth indicators, and the interaction between region dummies and yearXmonth. Models in column 1 and 2 are weighted by the number of people employed in each state-yearXmonth cell, and the other models are weighted by the population. Huber-White robust standard errors in parentheses allow for unrestricted error correlations across observations within states. Treatment sample in each panel includes observations for 1-6 months prior to and 1-6 months following adoption of immigration legislation. Comparison sample includes maximal set of observations for corresponding calendar months from states that did not adopt immigration legislation before or during the relevant pre- or post-treatment time interval. * Significant at the 0.1 level, ** at the 0.05 level, at the 0.01 level.

Table 6- Labor Market Effects of State-level Immigration Legislation, Low-skilled workers, Difference-in-difference estimates, Adopting and nonadopting states, 1-6 months before Enactment and 1-6 months after Implementation

	Employment		Population		Employment Rate	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Panel A: Foreign-born non-U.S. citizen</i>						
Hispanic	-0.052 (0.049)	-0.015 (0.011)	-0.040 (0.037)	-0.010 (0.009)	-0.009 (0.017)	-0.004 (0.004)
White	0.082 (0.112)	0.019 (0.039)	0.101 (0.098)	0.036 (0.028)	-0.002 (0.055)	-0.017 (0.017)
Black	-0.087 (0.200)	-0.015 (0.078)	0.007 (0.137)	0.020 (0.051)	-0.225* (0.128)	-0.078 (0.062)
<i>Panel B: Foreign-born U.S. citizen</i>						
Hispanic	0.003 (0.057)	0.003 (0.015)	0.018 (0.052)	0.011 (0.014)	-0.027 (0.038)	-0.007 (0.018)
White	0.316 (0.209)	0.106 (0.091)	0.323 (0.200)	0.109 (0.072)	0.091 (0.065)	0.025 (0.030)
Black	0.259** (0.102)	0.114*** (0.033)	0.091 (0.103)	0.055* (0.030)	0.234*** (0.065)	0.091** (0.036)
<i>Panel C: Natives</i>						
Hispanic	-0.074** (0.031)	-0.020*** (0.006)	-0.040 (0.033)	-0.018*** (0.006)	-0.037* (0.019)	-0.004 (0.007)
White	0.006 (0.016)	-0.004 (0.007)	0.008 (0.012)	-0.002 (0.004)	0.003 (0.009)	-0.003 (0.004)
Black	-0.012 (0.032)	-0.010 (0.007)	0.001 (0.019)	0.0002 (0.006)	-0.021 (0.020)	-0.011*** (0.003)

Note: Same specifications as in Table 4 except that the pre- and post-treatment periods are: 1-6 months prior to enactment and 1-6 months following implementation of immigration legislation.

Table 7- Labor Market Effects of State-level Immigration Legislation, Low-skilled workers, Difference-in-difference estimates, Adopting and nonadopting states, 6-11 months before Implementation and 1-6 months after Implementation

	Employment		Population		Employment Rate	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Panel A: Foreign-born non-U.S. citizen</i>						
Hispanic	-0.055 (0.036)	-0.015* (0.008)	-0.044 (0.031)	-0.009 (0.007)	-0.011 (0.010)	-0.005 (0.003)
White	0.243** (0.098)	0.049 (0.040)	0.217*** (0.078)	0.059** (0.028)	0.037 (0.055)	-0.010 (0.018)
Black	-0.175 (0.178)	-0.080 (0.069)	-0.033 (0.112)	-0.009 (0.037)	-0.241** (0.116)	-0.084 (0.051)
<i>Panel B: Foreign-born U.S. citizen</i>						
Hispanic	-0.025 (0.047)	-0.004 (0.012)	-0.005 (0.050)	0.007 (0.013)	-0.023 (0.040)	-0.009 (0.016)
White	0.355* (0.184)	0.130* (0.072)	0.376** (0.182)	0.133** (0.059)	0.054 (0.091)	0.020 (0.029)
Black	0.195* (0.105)	0.089*** (0.032)	0.058 (0.100)	0.038 (0.034)	0.192*** (0.048)	0.076*** (0.022)
<i>Panel C: Natives</i>						
Hispanic	-0.095*** (0.029)	-0.029*** (0.005)	-0.032 (0.033)	-0.015** (0.006)	-0.060*** (0.018)	-0.013** (0.006)
White	0.014 (0.011)	-0.002 (0.006)	0.013 (0.010)	-0.002 (0.003)	0.001 (0.007)	-0.001 (0.003)
Black	-0.003 (0.031)	-0.011* (0.006)	0.004 (0.016)	0.001 (0.006)	-0.015 (0.020)	-0.013*** (0.003)

Note: Same specifications as in Table 4 except that the pre- and post-treatment periods are: 6-11 months prior to and 1-6 months following adoption of immigration legislation.

Table 8 – Self-reported discrimination against Latinos in 2002

Region	Yes	No	Don't know	Total
States that later on adopted immigration legislation	28.9	70.7	0.4	100
States that did not adopt immigration legislation	31.7	67.6	0.8	100
Arizona, Colorado, Idaho and Nevada	28.0	71.5	0.6	100
All other Western states	31.0	67.8	1.2	100
Arkansas, Georgia, Tennessee and West Virginia	32.7	67.3	0.0	100
All other Southern states	32.3	67.4	0.3	100
Minnesota	26.5	73.5	0.0	100
All other Midwest states	30.4	69.6	0.0	100
North Eastern states	32.5	66.6	0.9	100

Note: The figures are obtained from the following question in the Pew Hispanic Center/Kaiser Family Foundation 2002 National Survey of Latinos: “*During the last 5 years, have you, a family member, or close friend experienced discrimination because of your racial or ethnic background, or not?*”

Table 9 – Changes in self-reported discrimination against Latinos, 2007-2002

<i>Panel A: During the last 5 years, have you, a family member, or close friend experienced discrimination because of your racial or ethnic background, or not?</i>									
Region	2002				2007				% change 07-02
	Yes	No	Refuse	Don't know	Yes	No	Refuse	Don't know	Yes
South & West	31.3	67.9	0.0	0.8	38.5	59.9	0.1	1.4	23.0
Midwest & North East	31.7	67.7	0.0	0.6	49.5	49.3	0.3	0.9	56.1

<i>Panel B: In general, do you think discrimination against Latinos is a major problem, a minor problem, or not a problem in the workplace?</i>									
Region	2002				2007				% change 07-02
	Major	Minor	Not a problem	Don't know	Major	Minor	Not a problem	Don't know	Major problem
South & West	39.8	37.8	20.1	2.3	56.7	26.4	14.9	2.0	42.4
Midwest & North East	45.1	36.3	16.9	1.8	62.0	21.2	13.2	3.6	37.6

Note: The figures describe the answers to the questions at the top of each panel. Both questions are included in the 2002 and 2007 Pew Hispanic Center National Survey of Latinos (NLS). When the 2007 NSL was conducted, Arizona, Arkansas, Georgia, Idaho, Nevada, Tennessee and West Virginia (all states in South and West census regions) had already implemented immigration legislation targeting employers, while no state in either the Midwest or North East had implemented legislation.