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of the Legal Arizona Workers Act on Migrant Outflows**

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## ABSTRACT

### **By the Time I Get to Arizona: Estimating the Impact of the Legal Arizona Workers Act on Migrant Outflows\***

In 2007, the State of Arizona passed the Legal Arizona Workers Act (LAWA) which required all employers to verify the legal status of all prospective employees. Replicating existing results from the literature, we show that LAWA displaced about 40,000 Mexican-born people from Arizona. About 25% of these displaced persons relocated to New Mexico indicating that LAWA had externalities on adjoining states. This finding underscores a pitfall of having decentralized immigration policy in a federal system.

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## 1. Introduction

The United States lacks a coherent immigration policy. As a consequence of this failure, there has been a tendency in the United States to rely on executive actions and state-level legislation that is often at odds with laws in other states. In describing this situation, a recent New York Times editorial said, “A country that has abandoned all efforts at creating a saner immigration policy has gotten the result it deserves: not one policy but lots of little ones, acting across purposes and nullifying one another. Not unity but cacophony, a national incoherence...” (The Editorial Board, 2015).

One notable example of a state passing its own legislation is Arizona, which enacted the *Legal Arizona Workers Act* (LAWA) in 2007, requiring all employers in the state to verify the legal status of all prospective employees. In particular, an employer found “knowingly employ[ing] an unauthorized alien” (LAWA 2008, p. 3) is ordered to “terminate the employment of all unauthorized aliens” (LAWA 2008, p.3) and is subject to a five-year probation period during which the employer is required to file quarterly reports of all hired employees. A second violation results in a permanent revocation of all licenses held by the employer. Employers are encouraged to use the E-Verify program to “[create] a rebuttable presumption that an employer did not knowingly employ an unauthorized alien” (LAWA 2008, p.8)<sup>1</sup>. Undocumented workers are reported to United States Immigration and Customs Enforcement and to local law enforcement officials. Effectively, this law makes it very difficult for undocumented workers to be employed in the State of Arizona. Recent work by Bohn, *et al.* (2014) has shown that LAWA induced a decline in the noncitizen Hispanic population in Arizona.

We build on this work in the following ways. First, we replicate key findings from Bohn, *et al.* (2014) who use the Current Population Survey but using a different data source, the American Community Survey (ACS). Second, we show that 25% of those who were displaced by LAWA relocated to New Mexico. Third, we show that

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<sup>1</sup> E-Verify confirms employment eligibility by comparing an employee's Form I-9 to data from US Department of Homeland Security and Social Security Administration records. The E-Verify program is a tool to ensure employees are working legally; lawmakers are the ones deciding how rigorously to enforce rules regarding hiring employees, thereby choosing how broadly the E-Verify program should be used. Use of the program is required for all federal agencies and contractors.

LAWA had large effects on Mexican-born people with lower levels of education and smaller effects on those with higher levels of education.

The balance of this paper is organized as follows. In the next section, we discuss our data and methods. Next, we discuss our results. Finally, we conclude.

## 2. Data and empirical methods

We employ difference-in-difference methods to investigate the impact of LAWA on emigration from Arizona. For our core estimations, we use Arizona and New Mexico as the treated states and California and Texas as our control states. Arizona is a treated state because LAWA directly affected it. New Mexico is a treated state because, *a priori*, if LAWA led to any spill-overs, we would expect them to affect New Mexico the most due to the shared border. We chose Texas as a control state as it also shares a border with Mexico but does not border Arizona and so is not affected by spillovers from Arizona. We chose California as a control state as it is economically similar to Arizona and is a control state in Bohn, *et al.* (2014). Because California shares a common border with Arizona, it may be prone to spillovers but Bohn, *et al.* (2014) and our own investigations showed that this was not an important consideration. Finally, to ensure that our results are not sensitive to the selection of control states, we consider New York, Florida, and Illinois (states with sizable Mexican populations) as possible alternative controls. In this robustness exercise, we use an alternative state with California, an alternative state with Texas, and, finally, an alternative state with both California and Texas as controls.

Letting  $i$  denote the individual,  $s$  denote the state and  $t$  denote the survey year, we estimate the model

$$\begin{aligned} MexB_{ist} = & \beta_s + \beta_1 Post_t + \beta_2 AZ_s + \beta_3 (Post2008_t * AZ_s) \\ & + \beta_4 (Post2008_t * NM_s) + \beta_5 X_{it} + \beta_6 E_{st} + \varepsilon_{ist} \end{aligned} \quad (1)$$

where  $MexB_{ist}$  is an indicator that is turned on if the respondent is Mexican-born;  $\beta_s$  is a state fixed effect;  $Post2008_t$  is an indicator that is turned on 2008 or after;  $AZ_s$  and  $NM_s$  are indicators for living in Arizona or New Mexico;  $X_{it}$  includes age, age squared, and

gender; and  $E_{st}$  includes the state's unemployment rate and *per capita* GSP. The term  $Post2008_t * AZ_s$  captures the extent to which LAWA displaced Mexicans from Arizona and  $Post2008_t * NM_s$  captures the extent to which LAWA had spillovers on New Mexico. We estimate this model using a linear probability model, cluster the standard errors by state, and employ the weights provided by the ACS. We run three different specifications of the model: one with state dummies, one with state dummies and a time trend, and one with state-level time trends.

The data come from the ACS, spanning the years 2005 to 2009. We exclude years after 2009 because the Arizona legislature passed SB1070 in 2010. SB1070 required all immigrants to carry proof of citizenship, another disincentive for migrants to move to Arizona. Doing this guarantees a clean estimate of the effect of LAWA. Descriptive statistics for this sample are reported in Table 1.

Before we proceed with the results, an important consideration is the coincident timing of the Great Recession of 2007-2009 which is a possible confound in this study. First, we control for state-specific economic conditions in the vector  $E_{st}$ . Second, in some specifications, we include state-specific time trends. Third, in Figure 1, we present state-specific unemployment rates for our two treatment states (Arizona and New Mexico with the solid lines), our primary two control states (California and New Mexico with the crosses), and the three alternative control states (New York, Illinois, and Florida with the diamonds). We see that the trend in Arizona is similar to California, Florida, and Illinois and that the trend in New Mexico is similar to Texas and New York. Based on this, we contend that our design adequately controls for the impact of the Great Recession and that the impact of the recession is, in many ways, similar in our treatment and control states. Finally, this issue is equally germane to Bohn, *et al.* (2014) who claim that the, “negative employment effects of the recession on employment were not any stronger in Arizona than in neighboring areas.”

### 3. Results

Our core estimations are reported in Table 2. As in Bohn, *et al.* (2014), we see that LAWA did indeed displace Mexican-born people from Arizona in column 1. Our

result of about 0.6 percentage points is slightly smaller than their result of between 1 and 1.5 percentage points. We suspect that the reason for this is that we have not differentiated between authorized and unauthorized immigrants. This result is robust to the inclusion of time trends and state-specific time trends in columns 2 and 3. We investigate the possibility of spillovers in columns 4-6 and find a positive and statistically significant impact of LAWA on the Mexican-born population in New Mexico. Using the estimates from column 5 of -0.0066 and 0.0054 and considering the populations of Arizona and New Mexico in 2008 (6.28 and 2.01 million, respectively), we estimate that LAWA resulted in 41,448 Mexicans leaving Arizona, with 10,854 Mexicans relocating to New Mexico.

In Table 3, we investigate the robustness of our results to alternative control groups. Our results are by-and-large consistent across the different control groups. This suggests that our choice of California and Texas did not drive the results.

Finally, in Table 4, we report the effects of LAWA on those with and without high school degrees. Once again, we explore the robustness of these results to different definitions of the control group. We see that the coefficient estimates of the interaction of the no high school dummy and  $Post2008_t * AZ_s$  are mostly negative and highly significant, indicating that LAWA impacted those with the least education as one would expect.

#### **4. Conclusion**

We showed that LAWA resulted in a decline in the Mexican-born population in Arizona of about 40,000 people. This replicates a result from Bohn, *et al.* (2014) using a different data source. These effects were concentrated among those with the least education. Finally, we showed that one out of four of those who were displaced from Arizona by LAWA relocated to New Mexico, indicating that the law had externalities on adjoining states. This suggests that attempts by individual states to control their own population of undocumented migrants may partially shift that population to adjoining states.

## References

Bohn, Sarah, Magnus Lofstrom, and Steven Raphael. "Did the 2007 Legal Arizona Workers Act reduce the state's unauthorized immigrant population?" *Review of Economics and Statistics* 96, no. 2 (2014): 258-269.

The Editorial Board (2015, April 1). The Scrambled States of Immigration. New York Times.

Legal Arizona Workers' Act, Arizona HB 2745, 48th Leg., 2nd Sess. (2008).



Table 1: Summary Statistics

	Age	Female	N	Age	Female	N
	All			MX Born		
AZ	38.43	0.510	303402	36.57	0.489	23274
NM	39.40	0.514	92901	39.84	0.486	5343
CA	37.42	0.509	1727790	39.10	0.488	179147
TX	36.77	0.513	1147671	39.14	0.495	95435
NY	39.58	0.522	931176	32.41	0.408	6648
FL	42.13	0.518	918915	32.94	0.404	11180
IL	38.55	0.517	630521	37.66	0.465	22825

Table 2: Core Results

	(1)	(2)	(3)	(4)	(5)	(6)
	State Dummies	State Dummies + Trend	State Dummies * Trend	State Dummies	State Dummies + Trend	State Dummies * Trend
PostAZ	-0.0058*** (0.0003)	-0.0063* (0.0021)	-0.0134*** (0.0000)	-0.0063*** (0.0006)	-0.0066** (0.0017)	-0.0038** (0.0009)
PostNM	-	-	-	0.0054*** (0.0006)	0.0054*** (0.0006)	0.0186*** (0.0006)
Post 2008	-0.0032 (0.0013)	-0.0033 (0.0016)	-0.0105*** (0.0005)	-0.0037* (0.0012)	-0.0038* (0.0014)	0.0091** (0.0016)
Observations	3,178,863	3,178,863	3,178,863	3,271,764	3,271,764	3,271,764
R-squared	0.029	0.029	0.029	0.029	0.029	0.029

Notes: Robust standard errors that are clustered at the state level are in parentheses. All estimations include state dummies and control for a quadratic function in age, gender, GSP per capita, and the state employment rate. The control states in these estimations are California and Texas.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Table 3: Robustness to Alternative Control Groups

		(1)	(2)	(3)
		State Dummies	State Dummies + Trend	State Dummies * Trend
<hr/>				
Control Group				
CA/TX		-0.0058*** (0.0003)	-0.0063* (0.0021)	-0.0134*** (0.0000)
NY	+CA	-0.0074** (0.0012)	-0.0070** (0.0009)	-0.0119*** (0.0004)
	+TX	-0.0076* (0.0024)	-0.0076* (0.0024)	-0.0219*** (0.0007)
	+CA/TX	-0.0072*** (0.0010)	-0.0073*** (0.0008)	-0.0545*** (0.0013)
FL	+CA	-0.0068** (0.0008)	-0.0072*** (0.0006)	-0.0031** (0.0006)
	+TX	-0.0072*** (0.0006)	-0.0076*** (0.0004)	-0.0017 (0.0033)
	+CA/TX	-0.0069*** (0.0006)	-0.0075*** (0.0005)	-0.0121*** (0.0002)
IL	+CA	-0.0066** (0.0009)	-0.0087* (0.0029)	-0.0143*** (0.0001)
	+TX	-0.0060** (0.0013)	-0.0073* (0.0021)	-0.0140*** (0.0007)
	+CA/TX	-0.0064*** (0.0004)	-0.0081** (0.0017)	-0.0106*** (0.0001)

Notes: Robust standard errors that are clustered at the state level are in parentheses. All estimations include the same controls as in Table 2. Each cell corresponds to a separate diff-in-diffs estimate. Finally, to economize on space, we only report the specification with the AZ/ Post2008 interaction.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Table 4: Education Robustness Checks

		New York			Florida			Illinois		
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		State Dummies	State Dummies + Trend	State Dummies * Trend	State Dummies	State Dummies + Trend	State Dummies * Trend	State Dummies	State Dummies + Trend	State Dummies * Trend
+CA	postAZ	-0.0046** (0.0007)	-0.0033** (0.0008)	-0.0079** (0.0010)	-0.0049** (0.0008)	-0.0042*** (0.0004)	-0.0086* (0.0021)	-0.0055** (0.0010)	-0.0065 (0.0035)	-0.0105*** (0.0006)
	postnohs	0.0063** (0.0008)	0.0063** (0.0009)	0.0065** (0.0010)	0.0038 (0.0029)	0.0037 (0.0029)	0.0038 (0.0029)	0.0085 (0.0037)	0.0085 (0.0038)	0.0087 (0.0039)
	postAZ* nohs	-0.0109*** (0.0005)	-0.0109*** (0.0005)	-0.0111*** (0.0006)	-0.0083 (0.0032)	-0.0082 (0.0032)	-0.0083 (0.0032)	-0.0133* (0.0036)	-0.0133* (0.0037)	-0.0135* (0.0038)
+TX	postAZ	-0.0036** (0.0006)	-0.00210 (0.0010)	-0.0102** (0.0015)	-0.00489** (0.0007)	-0.0039*** (0.0003)	-0.0036 (0.0038)	-0.0046* (0.0013)	-0.0032** (0.0005)	0.0014 (0.0007)
	postnohs	0.0117** (0.0024)	0.0117** (0.0024)	0.0118** (0.0023)	0.0081 (0.0070)	0.0079 (0.007)	0.0079 (0.007)	0.0151*** (0.0014)	0.0151*** (0.0014)	0.0152*** (0.0014)
	postAZ* nohs	-0.0162** (0.0028)	-0.0161** (0.0028)	-0.0162** (0.0027)	-0.0124 (0.0074)	-0.0123 (0.0074)	-0.0123 (0.0075)	-0.0199*** (0.0013)	-0.0198*** (0.0013)	-0.0199*** (0.0014)
+CA/TX	postAZ	-0.0049** (0.0014)	-0.0032** (0.0008)	-0.0303*** (0.0040)	-0.0060** (0.0016)	-0.0045*** (0.0007)	-0.0085*** (0.0008)	-0.0068** (0.0019)	-0.0052* (0.0017)	-0.001*** (0.0001)
	postnohs	0.0088** (0.0026)	0.0088** (0.0026)	0.0088** (0.0026)	0.0071 (0.0033)	0.0070 (0.0033)	0.0070 (0.0033)	0.0103* (0.0034)	0.0103* (0.0034)	0.0104* (0.0034)
	postAZ* nohs	-0.0135** (0.0026)	-0.0134** (0.0026)	-0.0135** (0.0025)	-0.0117** (0.0034)	-0.0116** (0.0034)	-0.0116** (0.0034)	-0.0151** (0.0033)	-0.0151** (0.0033)	-0.0152** (0.0033)

Notes: Per Table 3.

Figure 1: Unemployment Rates by States 2006-2009

