

# The Impact of Mandated Employment Verification on Labor Market Outcomes

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Tucson Arizona Immigration Solutions Conference  
October 15, 2011

# What is E-Verify?

**Description:** E-Verify is an internet-based, free program run by the United States government that compares information from an employee's employment eligibility verify form (I-9) to data from U.S. government records. If the information matches, that employee is considered eligible to work in the United States. If there is a mismatch, E-Verify alerts the employer and the employee is allowed to work while he or she resolves the problem, but must contact the appropriate agency to resolve the mismatch within eight federal government work days from the referral date.

**Objective/Intended Consequences:** Reduce employment of unauthorized workers.

**Scope:** 18 states have enacted laws mandating the use of E-verify by firms with ties to state public programs or by all firms as of 2011.

# Which States are Participating?

State	Enactment	Implementation	Repealed	Scope
AL	Jun-11	Apr-12		all
AZ	Jul-07	Jan-08		all
CO	Jun-06	Aug-08		public
FL	Jan-11	Jan-11		public
GA	Apr-06	Jul-07		public
ID	Dec-06	Jan-08		public
IN	May-11	Jul-11		public
LA	Jul-11	Aug-11		public
MN	Jan-08	Jan-08	2009	public
MS	Mar-08	Jul-08	2009	all
MO	Jul-08	Jan-09		public
NE	Apr-09	Oct-09		public
NC	Aug-06	Jan-07		public first, all after Oct. 2011
OK	May-07	Nov-07		public
SC	Jun-08	Jan-09		public first, all after January 2012
TN	Jun-11	Jan-12		all
UT	Mar-08	Jul-09		public first, all after March 2010
VA	Apr-10	Dec-12		public

**Source:** National Conference of State Legislatures (NCLS) at <http://www.ncsl.org/?tabid=13127#10>

# Potential Unintended Consequences

**#1 – Fraud:** the system is vulnerable to identity fraud, employer misuse and, more importantly, does not prevent unauthorized employment (Meissner and Rosenblau 2009).

**#2 – Mobility across sectors/states:** As noted earlier, most states that have implemented employment verification mandates have only enforced them on public agencies and contracts. Additionally, there are exemptions in some instances, *i.e.* temporary contracts lasting less than 3 months or employment in small firms in some states.

As a result, undocumented workers may still seek employment in the private sector, switch to employment exempted from using E-Verify, migrate to a nearby state without an employer verification mandate, or get 'off-the-books' jobs.

# Framework & Testable Implications

The current E-Verify system may not reduce unauthorized employment. Instead, it may substantially raise employment costs, place downward pressure on employment and wages, and/or increase informal/off-the-books employment (Gonzalez 2008). Potential Outcomes:

- **Outcome 1:** Both employment and wages drop as labor demand declines.
- **Outcome 2:** If labor supply is rather inelastic, employment levels may not fluctuate much, but wages may be significantly lower.
- **Outcome 3:** If migration to other states without a mandated employment verification program is possible, this may result in lower employment levels in the states adopting E-verify, but not necessarily lower wages.
- **Outcome 4:** Finally, overall employment and wages may stay unchanged due to high non-compliance and identity fraud rates.

Overall effectiveness is an **empirical question**.

# Research Questions

**We examine the labor market impacts of E-Verify:**

- **Question 1: Effectiveness of E-Verify:**
  - Does the implementation of E-Verify attain reduce the unauthorized employment?
  - What is the impact on wages of likely unauthorized workers?
  - Are there significant differences depending on effectiveness between the enactment and implementation of the law?
    - What do such differences suggest?
  - Are there significant differences by gender, ethnicity, industry?
    - What do such differences reveal about the effectiveness of the mandate?
- **Question 2: Other labor market outcomes?**
  - Does it increase the likelihood of ‘job lock’? Or in other words, are those with jobs before E-Verify less likely to change jobs afterwards?
  - Is job search more likely to take place while on the job?
  - Is self-reported discrimination more likely to occur?

# Past Research

## Federal-level:

- **Border enforcement:** Bean et al. (1990), Espenshade (1990), White et al. (1990), Bean, Edmonston, and Passel (1990), Singer and Massey (1988), Espenshade (1994), Cornelius (1998), Hanson and Spilimbergo (1999), Davila et al. (2002), and Orrenius and Zavodny (2003). Cornelius (1989, 1990), Gonzalez and Escobar (1990), Massey et al. (1990), Chavez et al. (1990), Bustamante (1990) and Kossoudji (1992). Donato et al. (1992) and Orrenius (2001) Angelucci (2005). **Amuedo-Dorantes and Bansak (2010)**
- **Labor Market outcomes:** Donato, Durand and Massey (1992), Donato and Massey (1993), Phillips and Massey (1998), Sorenson and Bean (1994), Bansak (2005), **Bansak and Raphael (2001)**

## State-level:

- **Lofstrom et al. (2011)** show that LAWA reduced the share of working-age Hispanic non-citizen males and females in AZ.
- **Amuedo-Dorantes and Lozano (2011)** show that SB1070 has not had long-lasting effects on the share of Hispanic non-citizens in AZ.

# Methodology

**Identification:** We exploit the variation in the enactment of employment verification mandates across sectors (public vs. private) and states over time to construct several natural experiments:

- **Treatment group:** Workers more likely impacted by E-Verify, *i.e.* workers employed in impacted states and sectors.
- **Control group:** Similar workers in non-impacted states or sectors.

# Methodology – Cont'd

An estimate of effects of the labor market impacts of the E-Verify program across the 50 states is given by:

$$L_{ist} = \alpha + \beta_1 EVerify\_all_{st} + \beta_2 EVerify\_public_{st} + \gamma' X_{ist} + \delta_s + \delta_s t + \phi_t + \varepsilon_{ist}$$

where:

*L*: labor market outcome (employed, real log hourly wages).

*E-Verify\_all*: E-Verify was mandated for use by all firms.

*E-Verify\_public*: E-Verify was mandated for either public sector firms or public contractors.

*X*: gender, race/ethnicity, age, marital status, number of children education

*Other variables*: state and time (year, month) fixed effects, state-time trends.

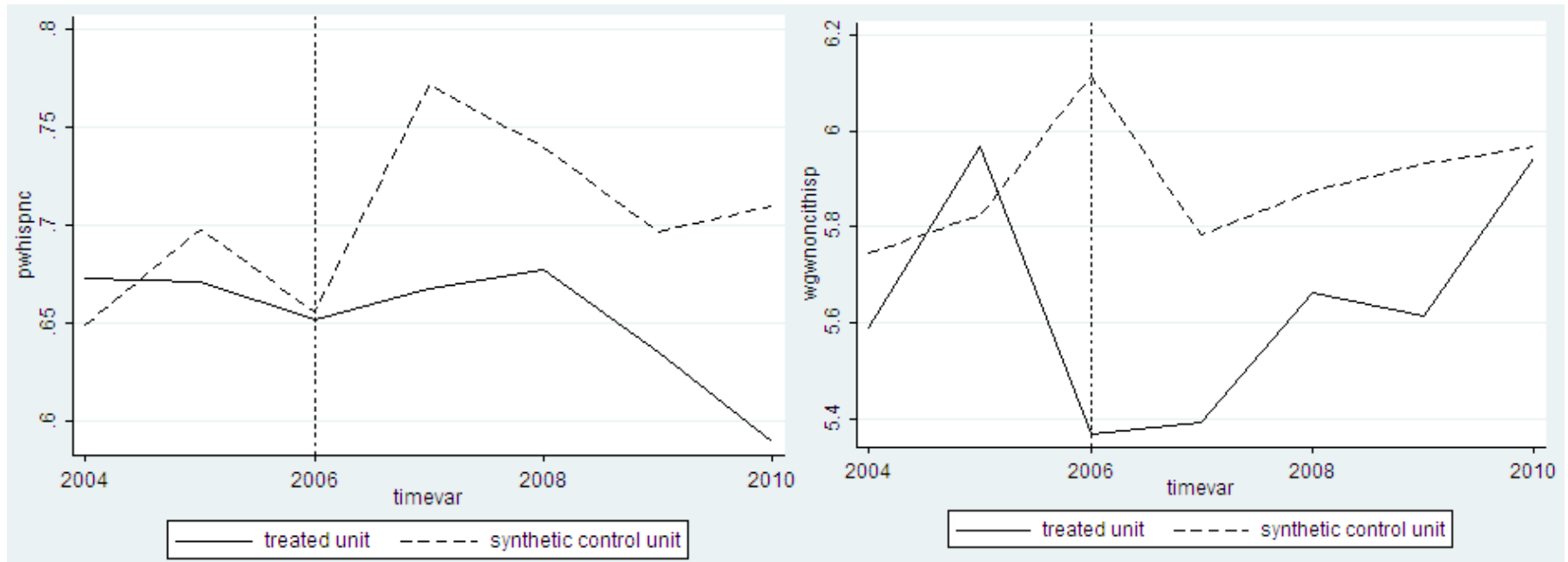
Errors are clustered by state.

# Data Sources and Selection Criteria

- **National Conference of State Legislatures:** State-level data on year of enactment and type of state-mandate. (Sources: [ncsl.org](http://ncsl.org))
- **Current Population Survey:** Monthly data from January 2004 to December 2010 on employment outcomes and outgoing-rotation group monthly data (subset) for wage data. (Source: [bls.gov](http://bls.gov))
  - Labor Force Status
  - Hourly wages
  - Industry
  - Education
  - Race/ethnicity
  - Other demographics
- **Baseline Sample:** Hispanic non-citizen, between 16 and 45 years of age and high school education or less (group most likely to be unauthorized).

# Descriptive Analysis: Figure 1

Colorado: Probability of Working (left) and Hourly Wages (right)

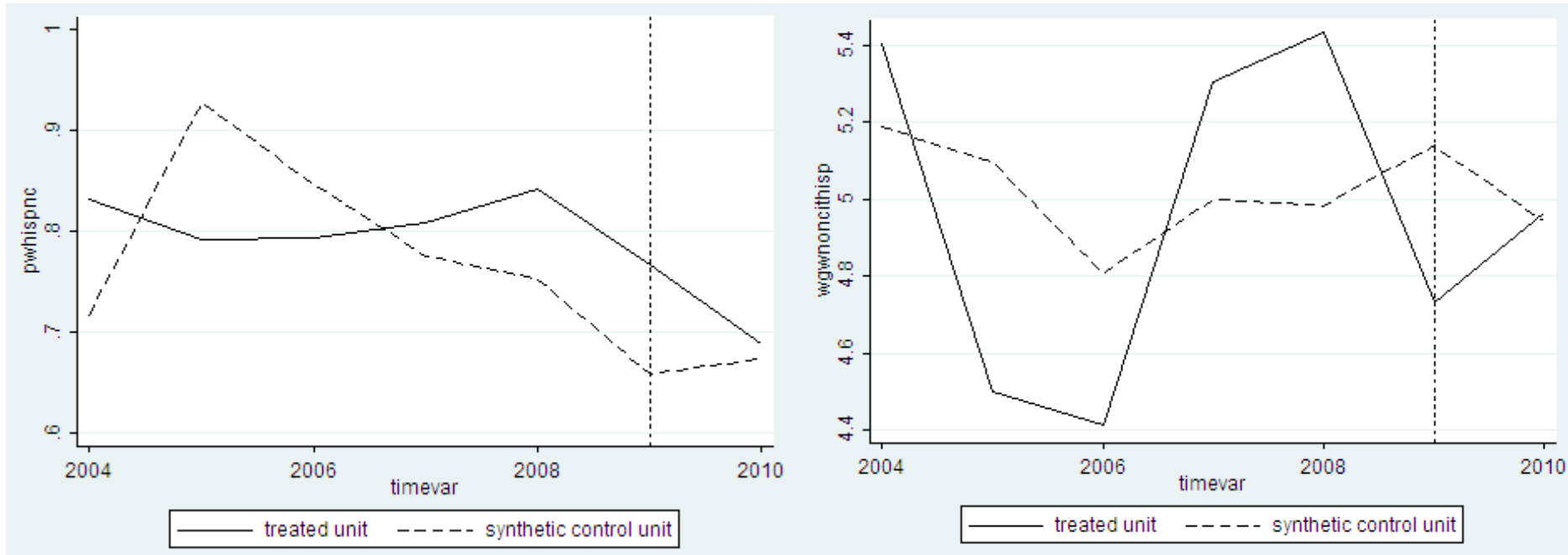


First state passing E-Verify for all public contract recipients.

**Interpretation:** long-lasting negative effects on employment but short-run negative effects on wages.

# Descriptive Analysis: Figure 2

Mississippi: Probability of Working (left) and Hourly Wages (right)



**MS:** Second state to pass E-Verify for all employers (after AZ in 2008).

**Interpretation:** Employment fell for those in MS while there was some increase in control groups. Wages recovered very quickly in MS.

# Descriptive Analysis: Means and S.D.

Variable	All	E-Verify	No Law	Diff.	Variable	All	E-Verify	No Law	Diff.
Working	0.67	0.68	0.67	0.00	HS	0.33	0.31	0.33	-0.02
Log(rhrlywg)	1.58	1.56	1.58	-0.02	Agriculture	0.04	0.04	0.04	0.00
E-Verify_all	0.01	0.07	0.00	0.07	Construction	0.18	0.22	0.16	0.06
E-Verify_public	0.07	0.41	0.00	0.41	Domestic Housework	0.02	0.01	0.02	-0.01
Male	0.56	0.58	0.55	0.02	Private Sector	0.67	0.68	0.67	0.00
White	0.95	0.96	0.94	0.01	Public Sector	0.01	0.01	0.01	0.00
Black	0.02	0.01	0.02	-0.01	Search while at Work	0.61	0.56	0.61	-0.05
Age	30.80	30.07	30.96	-0.89	Quit	0.10	0.14	0.10	0.04
Married	0.57	0.59	0.57	0.02	Discriminated	0.01	0.02	0.00	0.01
# of Children	1.15	1.18	1.15	0.04					
Less than HS	0.67	0.69	0.67	0.02					

- Characteristics of the “likely unauthorized” are similar in states with and without E-verify.
- About 67 percent work, earn \$5 per hour, over half are men, average age around 30, almost 60 percent married, have over one child, low educational attainment, few work in the public sector and there is a large share in construction.

## Question 1: Effectiveness of E-Verify

- Does E-Verify reduce unauthorized employment?
- What is the impact on wages?
- When are the effects stronger: following the enactment or after implementation?
  - What do such differences suggest?
- Are there differences by gender, ethnicity, industry?
  - What do such differences reveal about its effectiveness?

# Probability of Working (date, gender)

Date:	Enactment Date			Implementation Date		
By Gender:	All	Men	Women	All	Men	Women
E-Verify for All	-0.052*** (0.006)	-0.038*** (0.008)	-0.055*** (0.018)	-0.015 (0.017)	-0.025* (0.014)	0.006 (0.037)
E-Verify for Public	-0.015 (0.012)	-0.020* (0.011)	-0.003 (0.021)	0.007 (0.012)	-0.004 (0.020)	0.025 (0.024)
Observations	227,920	126,649	101,271	227,920	126,649	101,271
R-squared	0.216	0.073	0.090	0.216	0.073	0.090

Robust standard errors in parentheses

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

- **Differential Impact after Enactment and Implementation:**

- The employment likelihood is 5.2 pp. lower in states with an all employer E-Verify.
- Hardly no impact following the implementation of the mandate (quick adjustment).

- **Differential Impact by type of program:** Stronger for all employer E-Verify mandates.

- **Differences by gender:**

- *A public employer E-Verify mandate* only lowers employment among men by 2 pp. hinting on gender differences in employment patterns.
- Yet, stronger employment reductions among women following an *all-employer mandate* (risk aversion, children....).

# Probability of Working (by ethnicity)

By Ethnicity/Gender:	All Mexicans	Mexican Men	Mexican Women
E-Verify for All	-0.052*** (0.007)	-0.028*** (0.008)	-0.055*** (0.012)
E-Verify for Public	-0.024** (0.010)	-0.038*** (0.007)	0.004 (0.026)
Observations	166,814	93,110	73,704
R-squared	0.250	0.070	0.081
Robust standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

- **By ethnicity:**
  - An *all employer E-Verify mandate* lowers the employment of all likely unauthorized Mexicans by about 5 pp. as well.
  - The *public employer E-Verify mandate* has more damaging impacts among Mexicans – slightly larger in magnitude for this group than for the overall.

# Probability of Working (by industry)

By Industry of Employment	E-Verify for All	E-Verify for Public
Agriculture	0.072** (0.032)	0.079** (0.037)
Construction	-0.029*** (0.007)	-0.021*** (0.008)
Private HH	0.105*** (0.026)	-0.004 (0.052)
Retail Trade	-0.033** (0.014)	0.097** (0.048)
Accommodation	0.030 (0.087)	0.092 (0.062)
Administrative	-0.002 (0.015)	-0.018 (0.015)
Food & Drink	0.036*** (0.010)	-0.036* (0.021)

Robust standard errors in parentheses

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

- **Reshuffling of workers across industries following these enactments:**
  - *Employment creation* in industries likely exempted from the use of E-Verify, such as agriculture, private HH employment (*i.e.* cleaning services, nannies...) or, in some states, industries with a large number of small employers.
  - *Employment destruction* in those more likely impacted.

# Log Hourly Wages (date, gender)

Date:	Enactment			Implementation		
By Gender:	All	Men	Women	All	Men	Women
E-Verify for All	0.064*** (0.013)	0.013 (0.020)	0.172*** (0.015)	-0.023 (0.030)	-0.066* (0.035)	0.068** (0.029)
E-Verify for Public	-0.024 (0.023)	-0.021 (0.024)	-0.033 (0.033)	-0.019 (0.024)	-0.034 (0.029)	0.014 (0.026)
Observations	35,740	24,839	10,901	35,740	24,839	10,901
R-squared	0.144	0.106	0.097	0.144	0.106	0.096

Robust standard errors in parentheses

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

- **Female wages rise with the enactment of E-Verify mandates for all employers:**
  - Sharp reductions in their labor supply reduce their employment and raise their wages.
- **Male wages, however, drop** but only after the implementation of the mandate and by a marginally statistically significant amount:
  - Potential reductions in their labor supply are accompanied by sharp reductions in the demand for their labor, lowering their employment and somewhat their wages.
- **Impacts are only significant in the case of an all employer E-Verify mandate.**

# Log Hourly Wages (by ethnicity)

By Ethnicity/Gender:	All Mexicans	Mexican Men	Mexican Women
E-Verify for All	0.036*** (0.022)	0.015 (0.026)	0.165*** (0.025)
E-Verify for Public	-0.023 (0.027)	-0.032 (0.028)	-0.006 (0.046)
Observations	25,844	18,587	7,257
R-squared	0.144	0.103	0.099
Robust standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

- **Only female wages appear to impacted** following the enactment of an all employer E-Verify program – likely sharp reduction in their labor supply.
- Worth noting:
  - Impact on female wages (16.5% increase) similar to the one found looking at all likely unauthorized female workers (17% increase),
  - But the overall impact (3.6% increase) is much smaller among likely unauthorized Mexicans than among all likely unauthorized workers (6.4% increase).

# Log Hourly Wages (by industry)

By Industry of Employment	E-Verify All	E-Verify Public
Agriculture	0.101 (0.069)	0.043 (0.082)
Construction	-0.047 (0.042)	-0.039 (0.044)
Private HH	0.032 (0.218)	0.138 (0.108)
Retail Trade	-0.202*** (0.045)	-0.047 (0.060)
Accommodation	0.353** (0.134)	-0.025 (0.078)
Administrative	-0.078** (0.038)	-0.011 (0.034)
Food & Drink	0.068 (0.102)	-0.086** (0.043)

Robust standard errors in parentheses

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

- **Differential impacts on wages**, possibly reflecting the extent to which employment demand and labor supply are shifting in those industries:
  - Retail Trade and Administrative jobs: likely reduced labor demands and wages.
  - Work contracts in accommodation: shorter contracts likely exempt in some states.

## Question 2: Other labor market outcomes?

- Does it increase the likelihood of 'job lock'?
- Is job search more likely to take place while on the job?
- Is self-reported discrimination more likely to occur?

# Job Lock and Discrimination

E-Verify Program	Quit	Search	Discrimination
E-Verify for All	-0.177*** (0.033)	0.329*** (0.051)	0.011* (0.007)
E-Verify for Public	0.040 (0.031)	0.055 (0.060)	0.004 (0.027)
Observations	6,608	10,880	5,904
R-squared	0.116	0.207	0.043

Robust standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

- “Likely unauthorized” workers are 18 percentage points **less likely to quit their jobs** following the enactment of an all employer E-Verify – increase in “job lock”.
- Additionally, they are 33 percentage points **more likely to search for another job while still employed**.
- **More workers reported being discriminated against** after E-Verify was put in place for all employers.

# Summary and Policy Implications

## Conclusions:

- Mandating E-Verify at the state level or public sector level does appear to have negative effects on the probability of employment and wages for some groups.
- E-Verify has stronger effects in states with state-wide mandates.
- E-Verify has stronger effects following its enactment (vs. its implementation).
- By gender and industry results are mixed, indicating the effect is not uniform due to the nature of jobs that immigrants hold and possible ongoing discrimination.
- Both men and women bear the brunt of the E-Verify in terms of employment, but only men appear to endure a reduction in wages.
- Employment in construction and in the retail trade sector decreased, while agriculture, private households and food & drink services may have actually moved workers 'off the books' or may have been exempt in some states.
- In addition, E-Verify appears to have raised "job-lock" and discrimination.

## Policy-wise:

- The results question the effectiveness of these legislative measures and the need to rethink the attempts to regulate immigration at the state level.