



Have license, will travel: Measuring the effects of universal licensing recognition on mobility

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ABSTRACT

Universal licensing recognition (ULR) is a recent policy trend in which states recognize other states' licensing credentials, lowering labor market barriers for interstate migrants. Using county-to-county migration files from the Internal Revenue Service and policy-enactment dates from the Knee Center for the Study of Occupational Regulation, we find a sizeable increase in average net migration (eleven tax filers, twenty-two dependents) from border counties in non-ULR states to contiguous border counties in ULR states each year, as well as an increase in adjusted gross income tax receipts in the ULR counties (\$1.7 million). These effects dissipate at the state level.

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1. Introduction

Since 2016, over one-third of states in the United States have passed some form of universal licensing recognition. Universal licensing recognition (ULR) provides a pathway to occupational licensure for out-of-state workers by reducing barriers to entry in the ULR state's labor market. These licenses are government-mandated requirements to work in a profession. Importantly, ULR policies require licensing boards to recognize out-of-state licenses, in contrast to policies that give licensing boards discretion. This allows the nearly 22 percent of people who need an occupational license to work in new states after one policy change rather than requiring multiple profession-specific reforms (Plemmons, 2022)¹.

ULR policies also potentially mitigate the monopoly effects of occupational licensure by increasing the labor supply and increasing taxable receipts from new households when licensed workers move to a new state. This paper studies the effect of state ULR legislative bills on the net change in tax filers and dependents between border states and counties. If ULR reduces barriers to entry, average net migration into the ULR state should increase after ULR is enacted.

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¹ The percent estimate comes from the national estimate of employed persons with professional licenses from the Current Population Survey for 2021.

State-based occupational licensing creates significant barriers to entry within industries, but it also creates barriers between states when individuals who are licensed in one state want to work in another state that also licenses the occupation. Requiring individuals who have already met licensing requirements in one state to meet licensing requirements again suggests the policy protects administrative interests rather than the public (Kleiner and Krueger, 2013). The degree and type of licensing requirements vary significantly by state even for occupations licensed across the United States. There is also little evidence that licensing is effective in protecting public health and safety (Timmons and Mills, 2018). However, although licensing reduces employment, it also may reduce the wage gap for workers from underrepresented groups (Blair and Chung, 2021). ULR has the potential to increase market competition and employment by reducing interstate barriers to labor market entry.

Eighteen states have passed some version of ULR reform since 2016, but the effect of these reforms on labor migration has not yet been analyzed. This paper is the first to examine the effects of ULR reforms on net changes in state and border-county migration. Using a novel data set on the passage and enactment of ULR policies from the Knee Center for the Study of Occupational Regulation (Deyo, 2022) along with data from the Internal Revenue Service (IRS) Statistics of Income (SOI), we implement a staggered-adoption difference-in-differences regression model for the period 2010 to 2020. Of the eighteen states that have adopted ULR, eleven did so during the study period, five of which meet our study design requirements. These five states' ULR reforms neither exclude general occupations, nor states from

which licenses are recognized. Nevada, New Hampshire, and Pennsylvania include general provisions that the reform does not supersede other relevant occupation-specific laws, but this does not impact measurement of the average treatment effect as the provision was introduced with the reform. Our results indicate that ULR has small but statistically significant positive effects at the county level on average net migration of tax filers and their dependents migrating from non-ULR to ULR states, driven primarily by migrants from urban centers.

2. Material and methods

2.1. Data

We analyze the effect of ULR reforms between 2010 and 2020. We limit the period of analysis to six years before the passage of the first ULR reform in 2016 and end it in the latest year of SOI data, reflecting taxes filed through April 2020.

The SOI includes, at the annual level, state-to-state and county-to-county migration data on the number of tax filers, the number of dependents within taxable households, and aggregate adjusted gross incomes. Changes in state and county inflows and outflows are not provided at the occupation or industry level to ensure data privacy.

Data on ULR reforms were collected for changes in eighteen states between 2016 and April 2022 (Deyo, 2022). The data set includes indicators for factors of interest such as residency requirements, substantial equivalency requirements, recognition of similar scope of practice, and recognition of years of experience in lieu of a preexisting license. The data set also includes the date of the reform's passage and the date the reform went into effect. As the SOI data are only available through 2020, we limit our analysis to ULR reforms enacted through 2019, of which five states meet the criteria of our model of having both control and treatment borders.

2.2. Method

Standard migration models consider policy adoption in a single period because of level differences with staggered policy adoption. For example, California borders Arizona, Nevada, and Oregon. Both Arizona and Nevada adopted ULR policies but in different years, leaving California with three different treatment levels during the study period: no treated borders, one treated border, and two treated borders. Addressing the staggered implementation of ULR policies requires a dynamic approach that maintains parallel trends by reducing leveling effects (Rohlin and Ross, 2016).

A unique solution to this conundrum that has yet to be introduced to the literature allows a staggered difference-in-differences framework to measure average treatment effects (ATEs) for location-paired migration with irreversibility of treatment and conditional parallel trends based on the not-yet-treated group (Callaway and Sant'Anna, 2021). We isolate the net migration from non-ULR states that border two types of states—those with ULR and those that are never-treated—to study origination-adjacent state pairs that do not overcount net migration and do form distinct treated and control border pairs. Studying treated border pairs (net migration from a non-ULR state to a contiguous ULR state) and control border pairs (net migration from a non-ULR state to a contiguous non-ULR state that does not share any border with a ULR state) allows us to measure average net migration with a staggered-differencing framework without skewing the error term with varying treatment levels.

The framework is as follows:

$$\text{NetOutMigration}_{cbst} = \beta_0 + \beta_1 \text{ULR}_s + \beta_2 \text{Post}_t + \delta \text{Treatment}_{st} + \mathbf{X}_c + \eta_b + \lambda_t + \varepsilon_{bst}$$

The ATEs of this framework are measured using the corrections and weighting scheme for staggered implementation proposed by Callaway and Sant'Anna (2021). The dependent variable includes net migration of tax filers, net migration of dependents, and net changes in reported aggregate adjusted gross income. *ULR* is a binary variable indicating whether the adjacent state has a ULR policy, *Post* represents the staggered policy implementation timing, and *Treatment* represents border pairs where the adjacent state has a ULR policy, and the policy has been implemented.

We first analyze the set of non-ULR states that are adjacent to both non-ULR and ULR states to determine whether additional treatment effects on average net migration exist that are not accounted for by other time- or location-specific trends. If we observe a significant increase in average net migration to states with ULR policies relative to the average net migration to non-ULR states that do not border a ULR state, then the ULR policy may be effective in attracting workers by recognizing their out-of-state occupational licenses.

The staggered policy implementation framework is repeated for contiguous treatment and control county border pairs as highlighted in Fig. 1. Orange counties are non-ULR contiguous origin counties, green counties are ULR contiguous counties adjacent to non-ULR states, and purple counties are non-ULR contiguous counties only adjacent to non-ULR states. Contiguous orange-green county border pairs constitute the treated group, and contiguous orange-purple county border pairs represent the control group. To test robustness, we analyze urban and rural county-to-county contiguous border pairs.

3. Results

The effects of ULR policies on annual average net migration for contiguous states, presented in Table 1, are neither economically nor statistically significant. The average level of state-to-state migration is nearly 45,000 tax filers, with a net difference between state pairs ranging between 157 and 2,367 tax filers a year. An adjacent state with a ULR policy does not experience an increase in the average net migration of tax filers or dependents, or the level of adjusted gross income relative to adjacent non-ULR states.

Aggregate state migration may not be affected by legal changes in adjacent states, as potential migrants may be located hundreds or thousands of miles away from the contiguous state with a ULR policy, and the states' bundles of amenities and geographic features may vary significantly. Focusing instead on county-to-county migration provides insight into the behavior of individuals with the lowest cost of relocating between states with similar bundles of amenities and geographic features (Plemmons, 2022). Analyzing county-to-county average net migration of tax filers allows us to focus on residents who are most likely to be affected by this policy change. Still, we acknowledge that tax filers in counties bordering ULR states only represent a small sample of potential migrants.

Table 2 outlines the ATE of county-level migration between treated and control county border pairs. Non-ULR counties bordering ULR states experience a net loss of eleven tax filers, twenty-two dependents, and \$1.72 million in adjusted gross income, relative to counties not bordering ULR states. The group ATEs show that the changes in county-to-county migration are primarily driven by states that introduced ULR in 2018.

We further disaggregate the counties into urban and rural categories as defined by the U.S. Department of Agriculture (see Table 3). Non-ULR urban counties, and counties adjacent to a major urban center, experience a large net loss of tax filers, dependents, and adjusted gross income to ULR states relative to non-ULR states. However, we do not observe any economic or statistically significant change in average net migration from

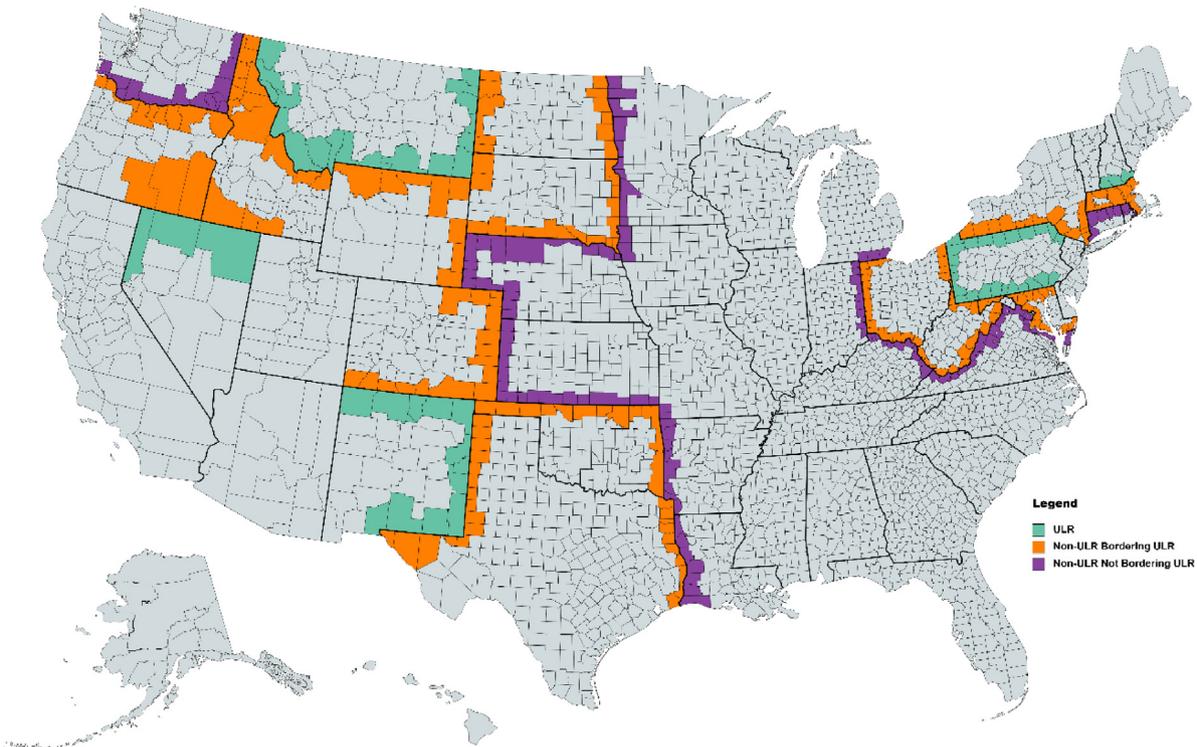


Fig. 1. Counties included in the County-to-County Migration Analysis.

Table 1
Contiguous state-to-state migration.

	Net migration of tax filers	Net migration of dependents	Net change in AGI
ATT	-47.04 (187.18)	47.49 (414.47)	20497.46 (32128.52)
Group 2016	-154.02 (241.35)	-336.43 (504.91)	6104.088 (38079.92)
Group 2017	-97.63 (218.00)	-335.06 (443.51)	2245.09 (43520.96)
Group 2018	451.10 (374.15)	1680.05* (971.37)	109541.80* (64276.43)
Group 2019	-201.68 (237.05)	-319.62 (390.28)	-6969.99 (22492.33)
Observations	418	418	418

Notes: * p < 0.10, ** p < 0.05, *** p < 0.001.

Table 2
Contiguous county-to-county migration.

	Net migration of tax filers	Net migration of dependents	Net change in AGI
ATT	10.67** (5.25)	21.65** (11.10)	1721.55** (777.55)
Group 2016	-2.52 (5.96)	-0.61 (14.57)	569.47 (528.14)
Group 2017	1.09 (3.86)	-0.85 (6.92)	655.70 (442.75)
Group 2018	73.40** (30.46)	175.26*** (58.44)	10560.43** (4655.71)
Group 2019	-0.62 (2.40)	-3.91 (4.90)	-2.70 (507.19)
Observations	4389	4389	4389

Notes: * p < 0.10, ** p < 0.05, *** p < 0.001.

rural counties that are not located near a major urban center. Counties with urban centers have more employment opportunities and amenities which can attract more migrants than rural counties.

4. Conclusion

ULR creates pathways to migration by lowering labor market barriers across states. As ULR policies are a recent phenomenon, with only eighteen states enacting policies between 2016 and April 2022, little is known about their effects on interstate migration. This study investigates the state-to-state and county-to-county average net migration flows after ULR policies are enacted. Although we find no measurable effects at the state level, residents in border counties are more likely to move to adjacent ULR states, relative to residents in counties bordering states with no ULR policy. This study also provides a framework for introducing the staggered difference-in-differences method to two-location migration flow data without invalidating the assumptions of irreversibility of treatment or conditional parallel trends; it does so by deterring leveling effects. Although ULR adoption decreases labor market barriers, delicensing would even more effectively remove barriers.

To our knowledge, this study provides the first empirical estimate of the relationship between ULR adoption and interstate migration. The COVID-19 pandemic introduced large shocks to migration that limit the study of post-pandemic periods. We therefore limit our study to ULR reforms enacted before 2020. Reliance on county-to-county IRS migration files further limits the sample to residents that filed their tax returns prior to April of each filing year. Finally, all results reflect changes in aggregate mobility, as the IRS does not disclose occupation or industry.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

This data is publicly available and linked within the paper.

Table 3
Contiguous county-to-county migration separated by urban and rural.

	Urban (USDA Score < 7)			Rural (USDA Score ≥ 7)		
	Net migration of tax filers	Net migration of dependents	Net change in AGI	Net migration of tax filers	Net migration of dependents	Net change in AGI
ATT	15.42* (8.76)	32.94* (18.47)	2595.98** (1292.28)	−0.32 (1.29)	−1.92 (4.47)	−0.72 (74.16)
Group 2016	−5.73 (15.67)	−22.94 (40.47)	509.89 (980.92)	0.05 (1.82)	−1.87 (6.70)	50.15 (106.62)
Group 2017	0.04 (6.45)	−4.29 (11.55)	955.24 (659.47)	0.25 (0.68)	0.87 (1.47)	7.60 (26.33)
Group 2018	69.94** (30.72)	167.35*** (59.26)	10092.17** (4693.36)			
Group 2019	−0.19 (3.44)	−4.16 (6.98)	62.52 (747.71)	−1.36 (1.73)	−2.86 (3.54)	−120.94 (96.03)
Observations	2882	2882	2882	1507	1507	1507

Notes: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.001$. Urban and Rural scores are provided by the U.S. Department of Agriculture (USDA). There were no urban counties in the 2018 treatment group.

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