Is Occupational Licensing a Barrier to Interstate Migration?

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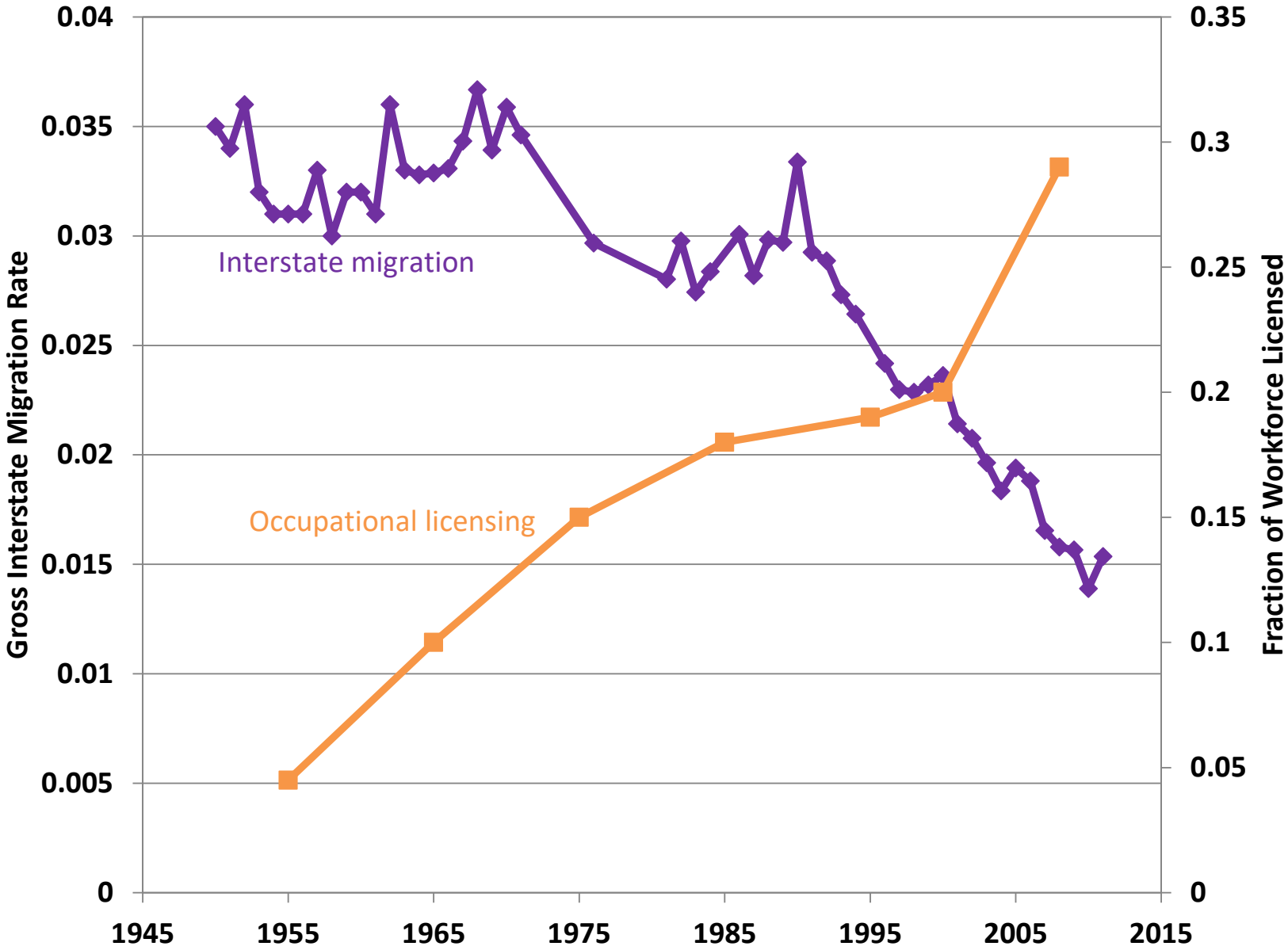
November 9, 2018
NBER Labor Studies
Chicago, IL

[1]We thank the Smith Richardson Foundation and the Kauffman Foundation for their generous financial support of our research. The views expressed are those of the authors and do not necessarily reflect the views or policies of the Smith Richardson Foundation or the Kauffman Foundation.

Interstate migration and occupational licensing

- Occupational licensure, the legal process by which governments establish qualifications to practice a trade or profession, has become one of the most signficant labor market regulations in the United States
- Free movement of workers is key to the efficient functioning of labor markets
- Most licenses are granted at the state level, are not automatically transferable, and could present a major barrier to moving between states
- Some early studies showed evidence of reduced interstate migraiton for members of a few occupations (Holen 1965; Pashigian 1979; Kleiner, Gay, and Greene 1982)
- Very little recent work: Tenn (2001), Depasquale and Stange (2016)

Figure 1: Occupational licensing and interstate migration, 1950-2008



Challenges in studying licensing's effect on interstate migration

- Many states have occupation-specific *reciprocity* or *endorsement* agreements in place with other states, which reduce the cost of re-licensure for those already licensed
- Ideally, have data documenting changes in reciprocity/endorsement requirements for every state and occupation
- Each occupation overseen by different agency/board in each state, no incentive to maintain historic records of reciprocity requirements
- Many occupations/states determine re-licensure requirements on a case-by-case basis ("board discretion")
- Interstate migration is a rare event, need big samples

Our paper

- Analyze geographic mobility of 22 universally state licensed occupations
  - 16 "state-specific" occupations
  - 6 "quasi-national" occupations
- Exploit detailed migration information in the American Community Survey to mitigate two big likely sources of negative bias
- Estimate effects for two groups above as well as for the 22 occupations separately

Preview of findings

- Among those who move a long distance, licensed occupations move between states at a 5 percent lower rate relative to other occupations
- Unadjusted difference in interstate migration rates is -28 percent
- State specific licensed occupations: -7 percent, Quasi-national: -2 percent
- Heterogeneity in effect size across individual occupations appears tied to state specificity of licensing requirements

How could licensing lower interstate migration?

"Classic" model of migration decision making. Migrate if

$$E[u(w_D)] - C \geq E[u(w_O)]$$

C contains additional cost of re-licensure for members of licensed occupations considering a move between states

How large is this cost?

- Exact requirements for re-licensure vary by occupation
- Can include training, experience, exams, fees, continuing professional development
- Could be as little as paperwork and a fee, or as much as completing years of additional training and taking exams
- Varies by occupation and destination/origin state, as well as by individual characteristics

Data

- ACS 2005-2015
- Sample limited to those aged 18-64 with non-imputed income, occupation, migration, and demographic characteristics

Table 1: Universally licensed occupations identifiable in the ACS 2005-2015

State-specific licensed occupations	
Occupation name	Observations
Elementary/secondary teacher	526,991
Lawyer	100,238
Barber/cosmetologist	71,358
Real estate broker/sales agent	70,189
Electrician	69,104
Insurance agent	48,905
Pharmacist	25,569
EMT/paramedic	16,572
Dental hygienist	15,861
Dentist	14,983
Real estate appraiser/assessor	9,875
Veterinarian	7,837
Pest control worker	5,751
Chiropractor	5,094
Optometrist	3,533
Podiatrist	897
Total	992,757

Quasi-national licensed occupations	
Occupation name	Observations
Nurse (RN/LPN)	348,018
Physician	76,626
Social worker	75,394
Occupational and physical therapist	29,505
Psychologist	17,861
Physician assistant	9,233
Total	556,637

- Occupations comprise 11 percent of US employed population (state-specific 7 percent, quasi-national 4 percent)

Empirical Setup

$$B_{ist} = \delta_B licensed_{ist} + X_{ist}\beta + \alpha_s \times \eta_t + \varepsilon_{ist} \quad (1)$$

B_{ist} is indicator for moving between states in last year

X_{ist} include controls for education, race, sex, marital status, age, citizenship status, employment status, number of children, and income

$\alpha_s \times \eta_t$ are state-year fixed effects

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Problem: $Cov(licensed_{ist}, \varepsilon_{ist}) \neq 0$

- $\hat{\delta}_B = \delta_B + bias$

Two sources of negative bias

1. Licensed individuals are self-selected to be more risk averse
   - Licensed occupations offer clear career paths, stable employment
   - Higher risk aversion could lead to lower interstate migration
   - Related: could have greater "ties" to childhood state
2. "Local capital" or "network" components of (many) licensed occupations discourage long-distance moves
   - i.e., lawyers, electricians, cosmetologists, realtors, psychologists, etc.
   - Moving far results in destruction of this local capital, presents potentially large cost to moving between states

Empirical strategy

Limit sample to individuals who move at least 50 miles, compare likelihood this move is across states between licensed and unlicensed individuals

$$B_{ist} = \delta_B licensed_{ist} + X_{ist}\beta + \alpha_s \times \eta_t + \varepsilon_{ist}$$

Also limit sample to individuals residing outside their state of birth

Assumptions:

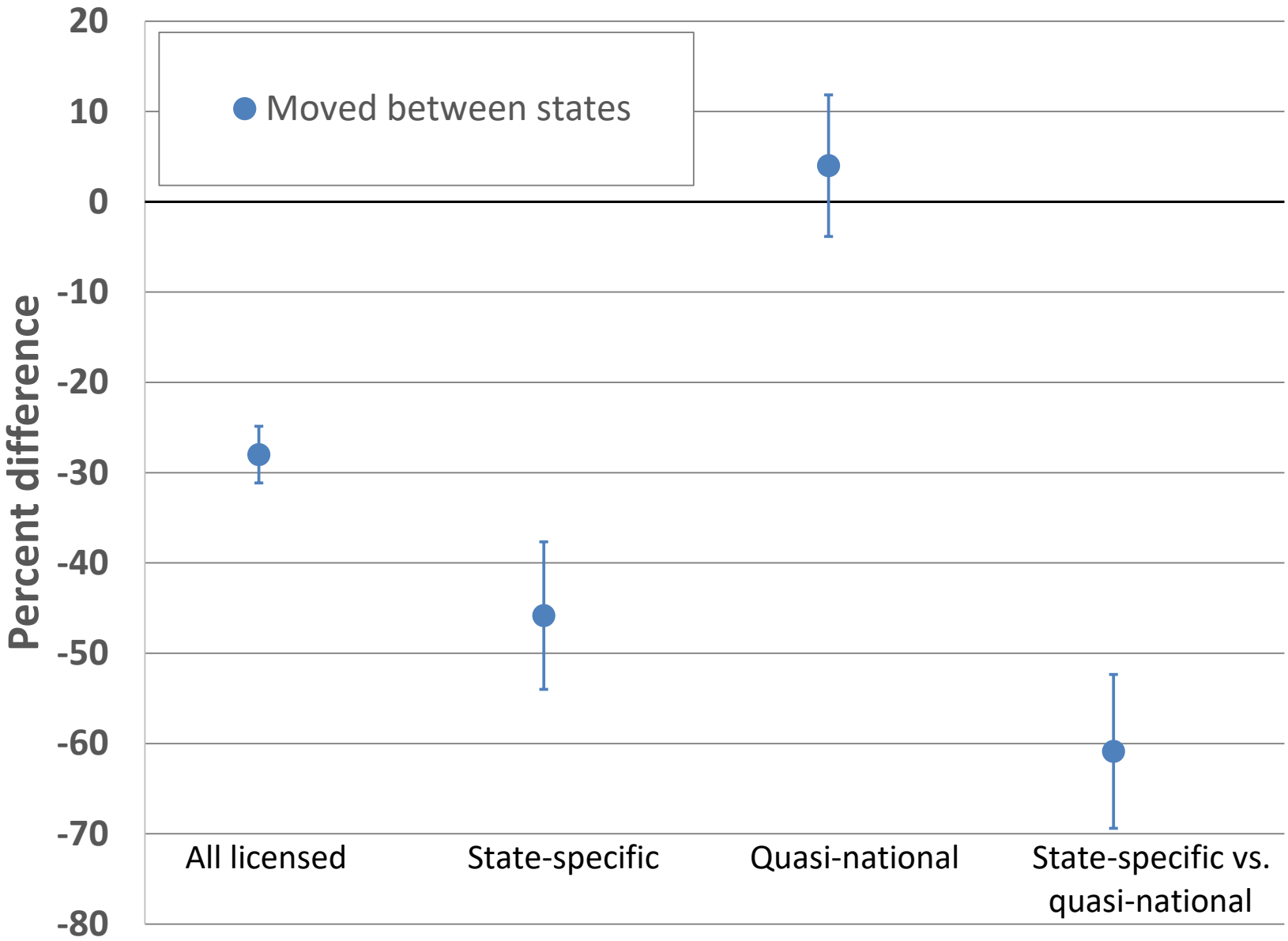
- Using only individuals who make a 50+ mile move removes bias from self-selection of risk averse individuals into licensed occupations
- All moves of 50+ miles result in destruction of local capital

Estimate using OLS, convert coefficients to percent differences by dividing by dependent variable mean

Table 2: Selected descriptive statistics, 2005-2015 ACS

	Unlicensed	Licensed	State-specific licensed	Quasi-national licensed
Moved at all	0.152	0.128	0.126	0.132
Moved between states	0.025	0.023	0.020	0.028
Moved 50+ miles, given moved at all	0.235	0.261	0.245	0.287
Moved between states, given moved 50+ miles	0.646	0.647	0.609	0.702
Living outside state of birth	0.472	0.467	0.443	0.510
Mean years of education	13.14	16.14	16.16	16.11
Observations	13,719,882	1,549,394	992,757	556,637

Figure 2: Percent difference in migration rates, ACS 2005-2015



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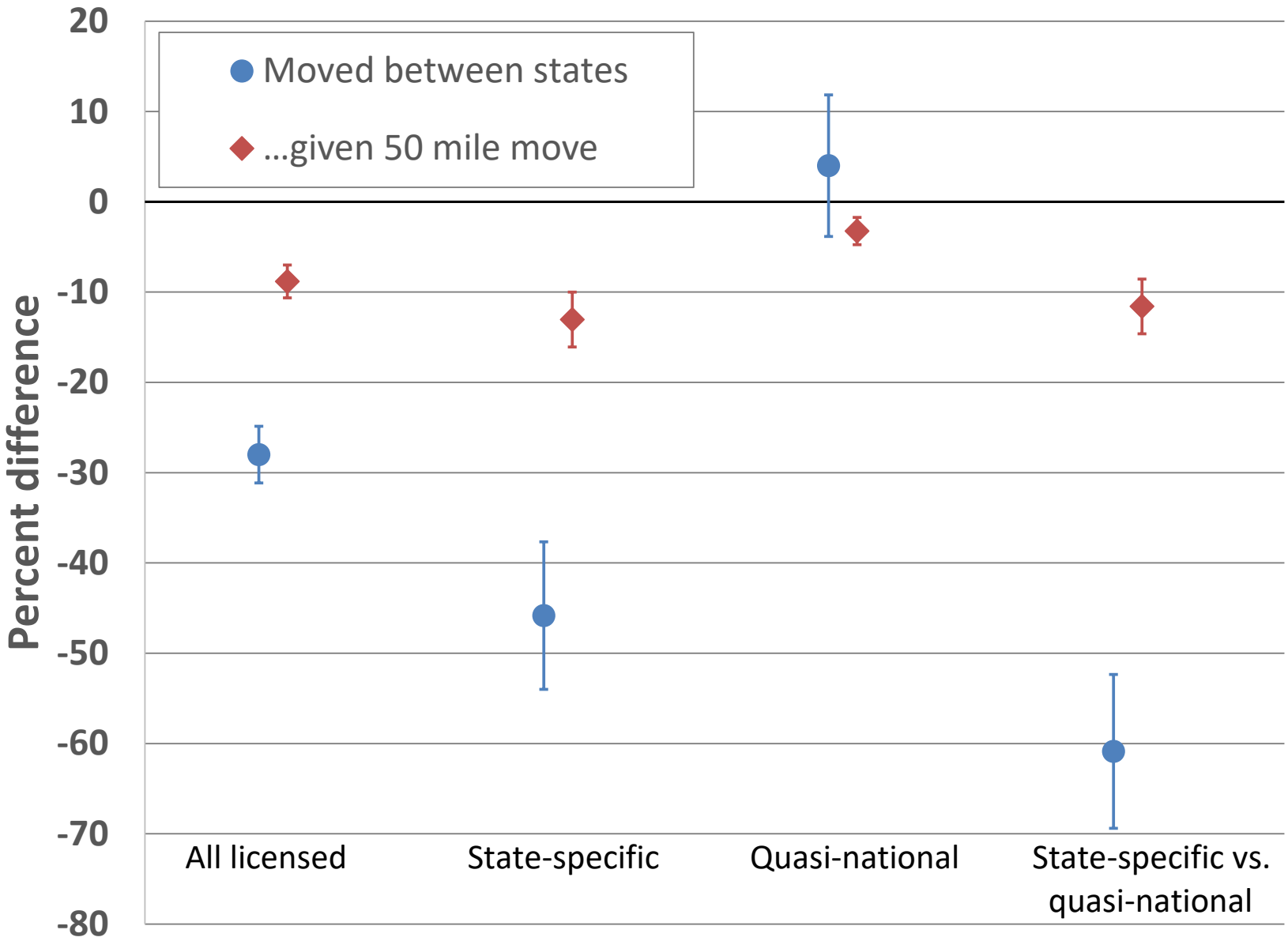

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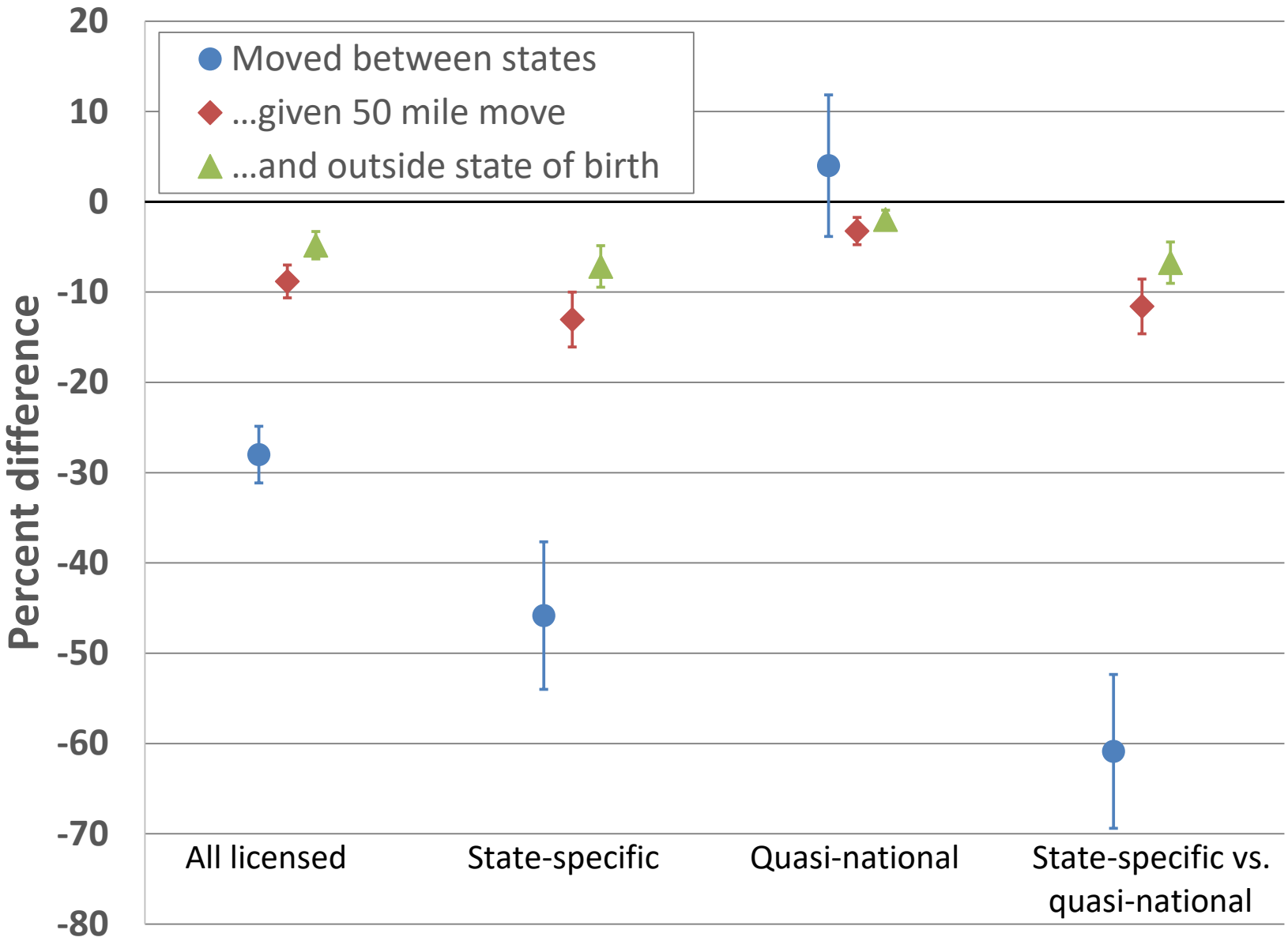


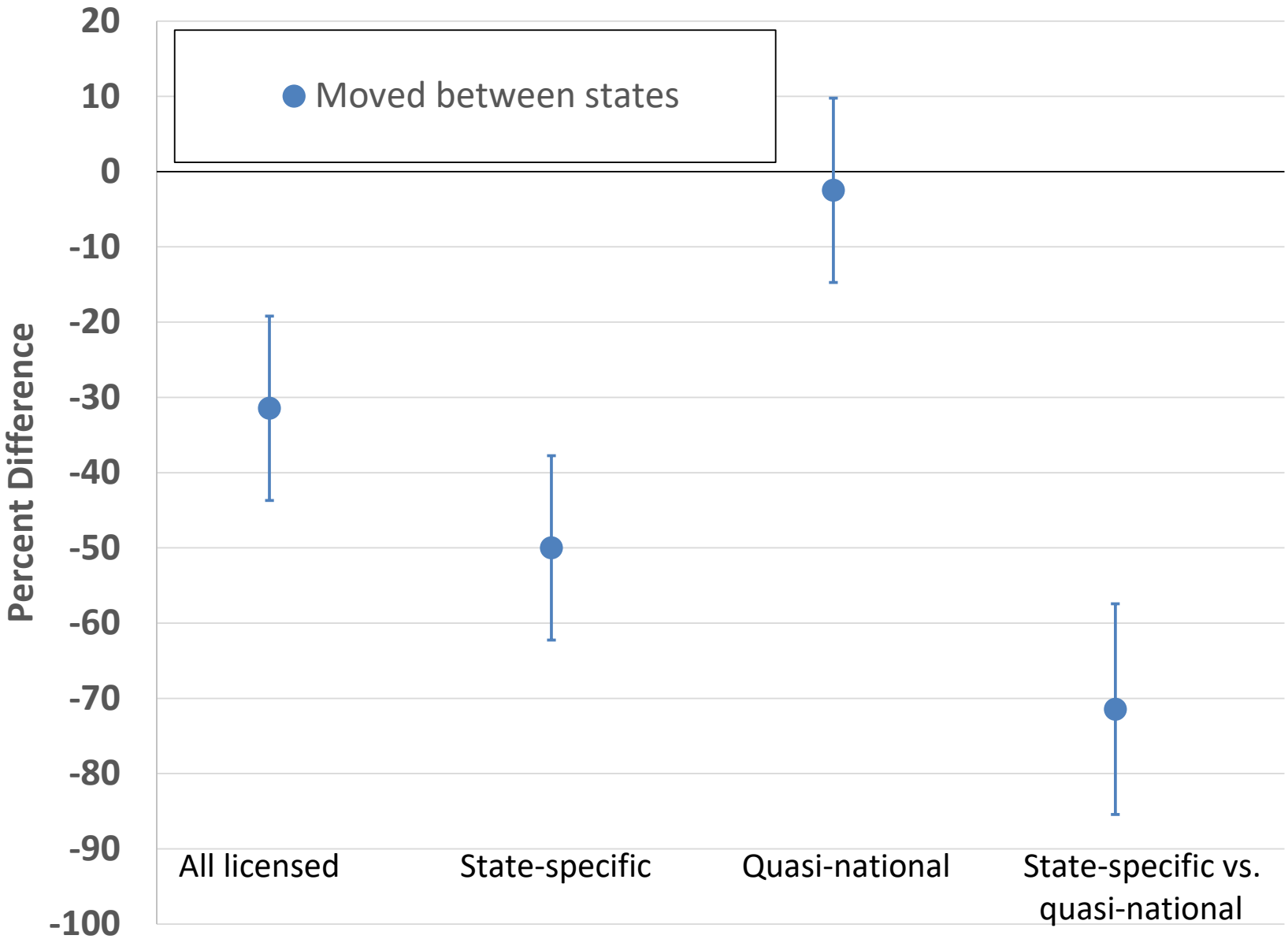
Results are robust to...

- changing control variable specification ▸ Table
- using 100-mile move instead of 50 ▸ Table
- changes in the ACS MIGPUMA definition ▸ Table

Results using the CPS ASEC (March)

- Disadvantage of the ACS: do not know occupation last year
  - Cannot distinguish between continuing members of occupation from new entrants
  - Effects of licensure cost on migration could vary between these groups (re-licensure vs. initial licensure)
- Repeat using CPS
  - Know occupation last year
  - Don't know
    - ★ sub-state place of residence (cannot define move distance)
    - ★ state of birth
- Use same occupations and specification as ACS
  - Use moved between counties as measure of "long-distance" moves
  - Compare results for all current members of an occupation and those who were also employed in that occupation last year ("continuing members")

Figure 3: Percent difference in migration rates, CPS ASEC 2005-2015



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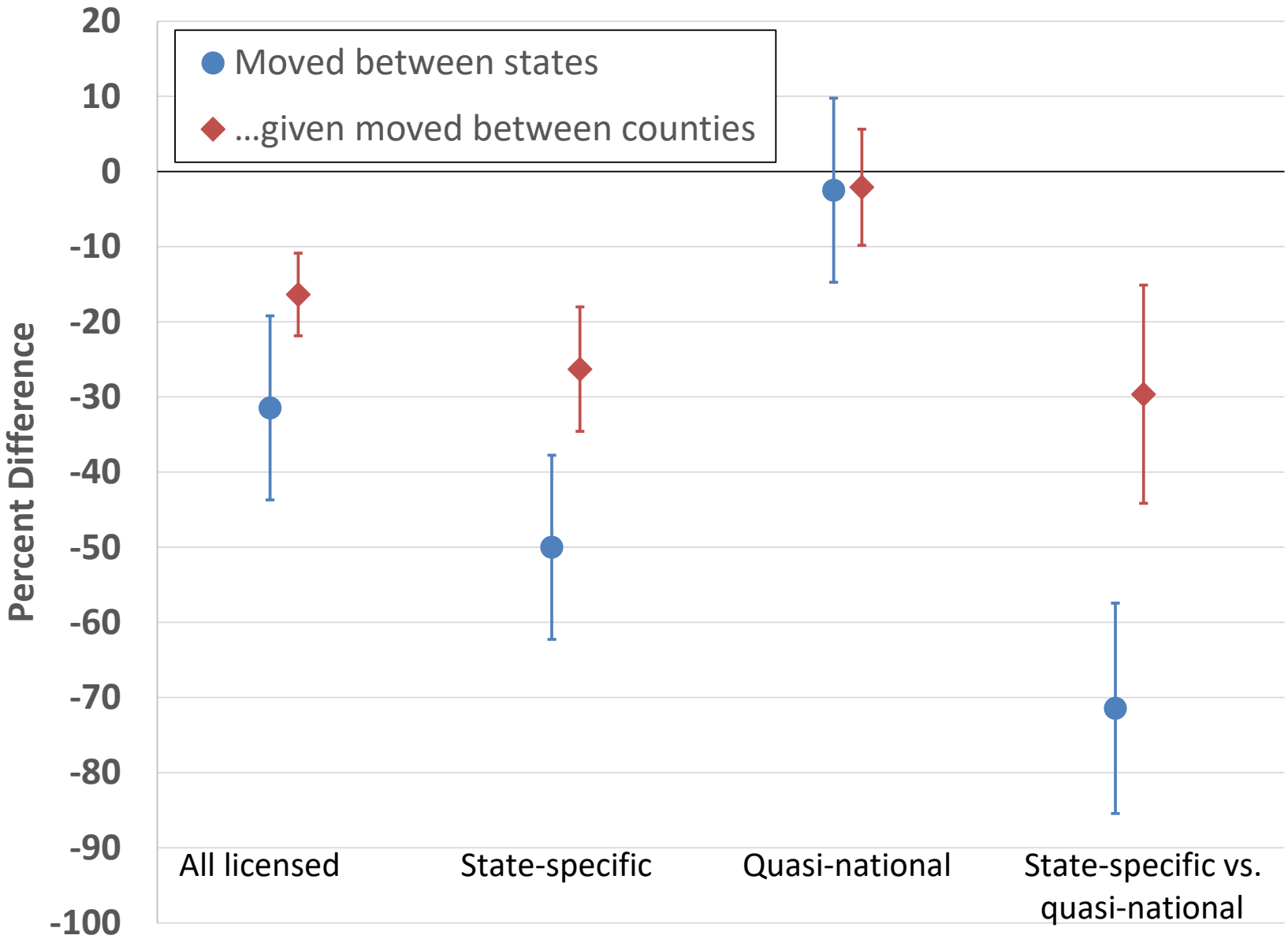

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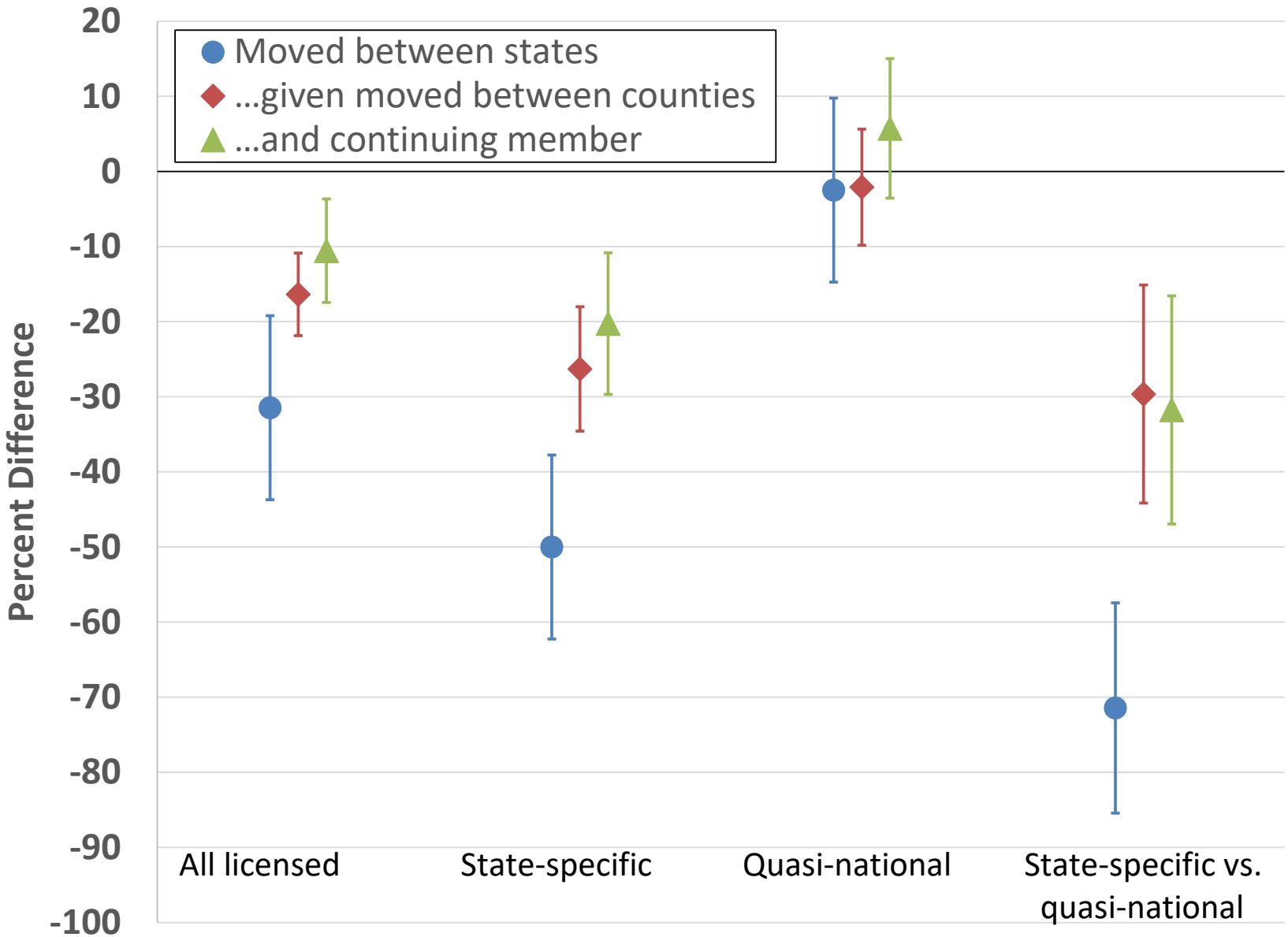


Results by occupation

- Even within state-specific and quasi-national licensed occupations, expect "effect" of licensing on migration to vary
  - Re-licensing requirements and costs vary substantially by occupation
- Repeat analysis separately by occupation
  - Use cell matching estimator to ensure identification of appropriate comparison group for each occupation
  - Cells formed based on same vector of observable characteristics as licensing group analysis, estimated using OLS and ATET weights, specifications also include observables
  - As before, convert coefficients to percentage differences

Figure 4: Occupation-specific results, ACS 2005-2015

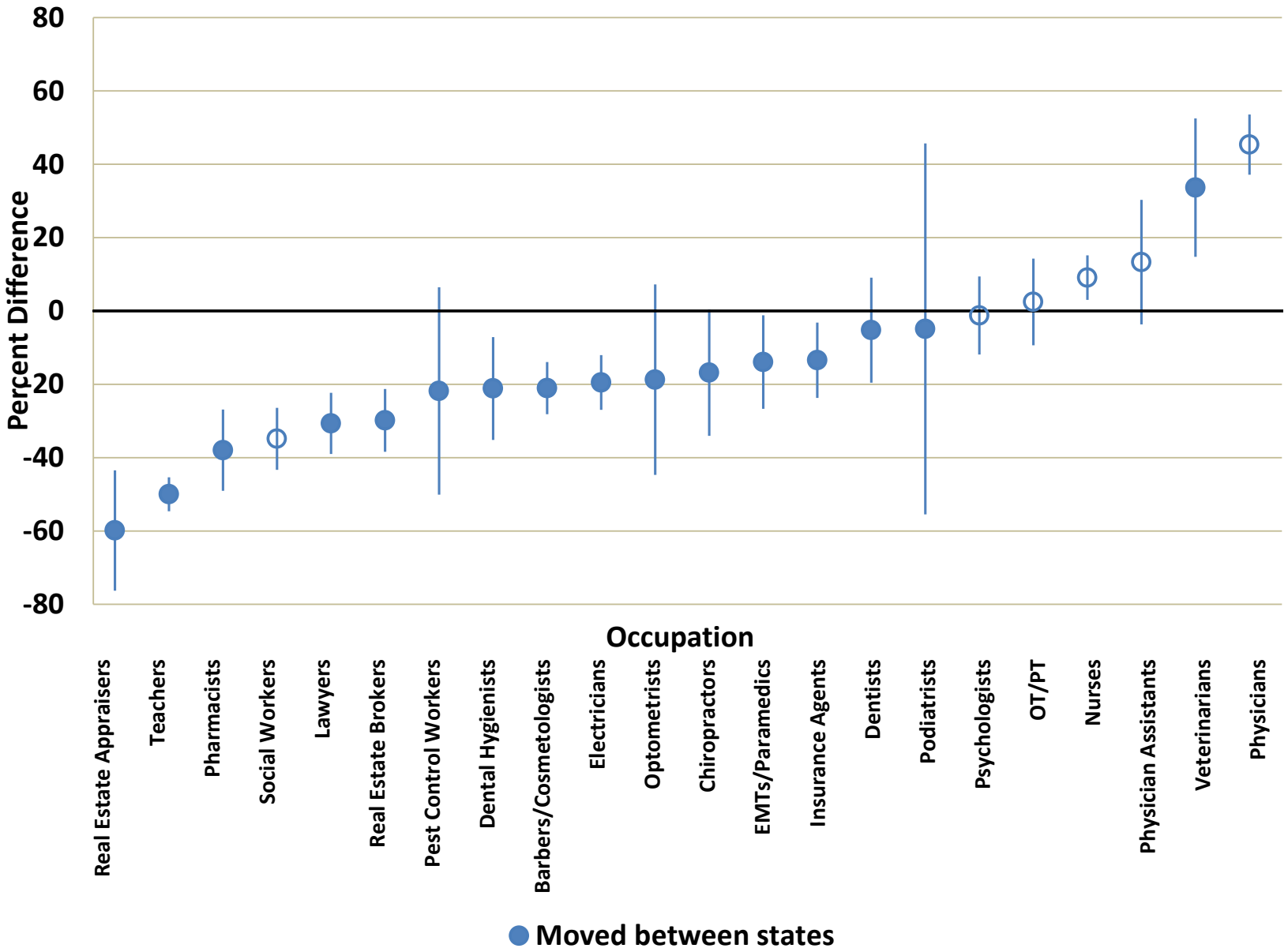


Figure 4: Occupation-specific results, ACS 2005-2015

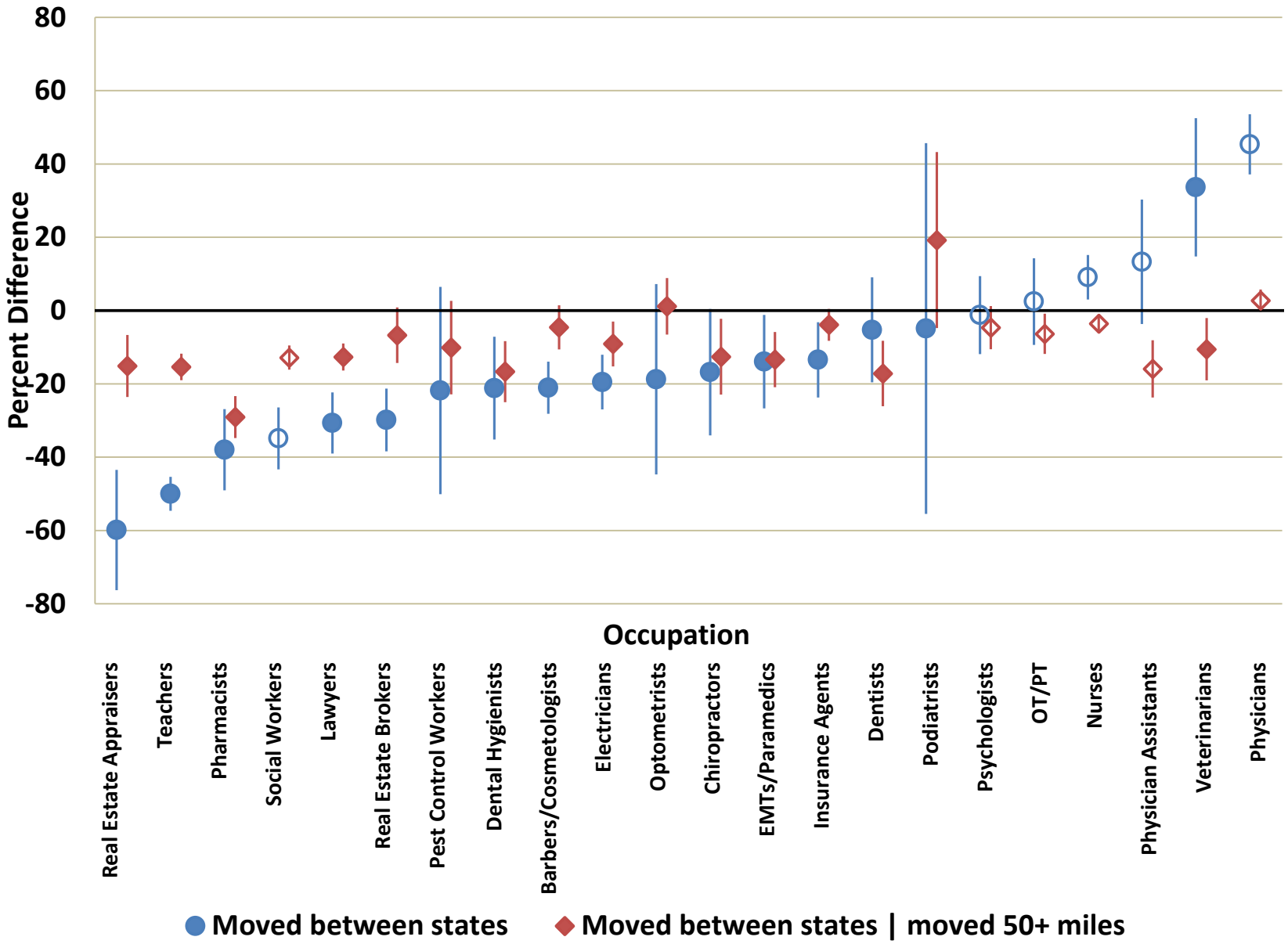
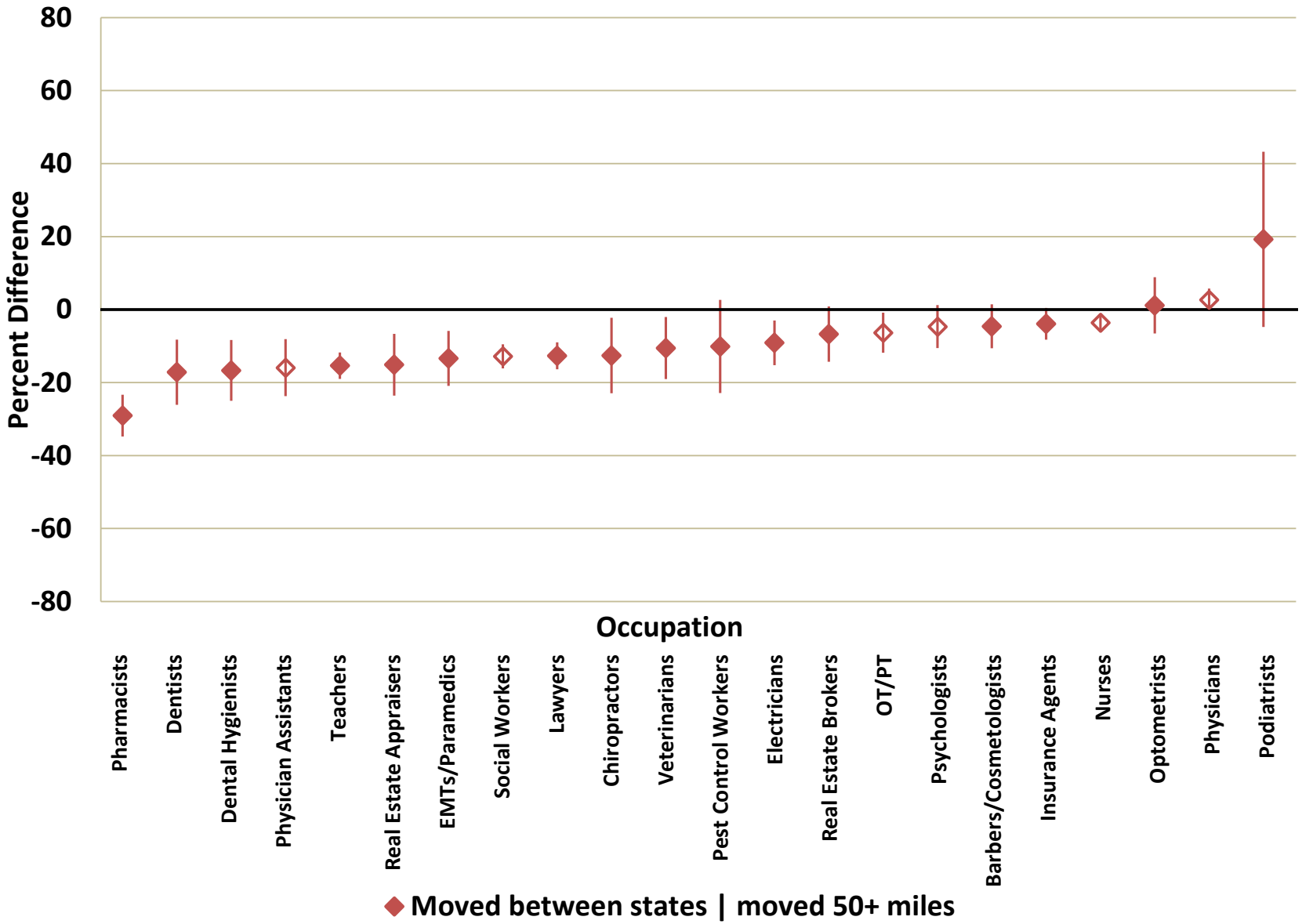


Figure 5: Occupation-specific results, individuals who moved 50 or more miles, ACS 2005-2015



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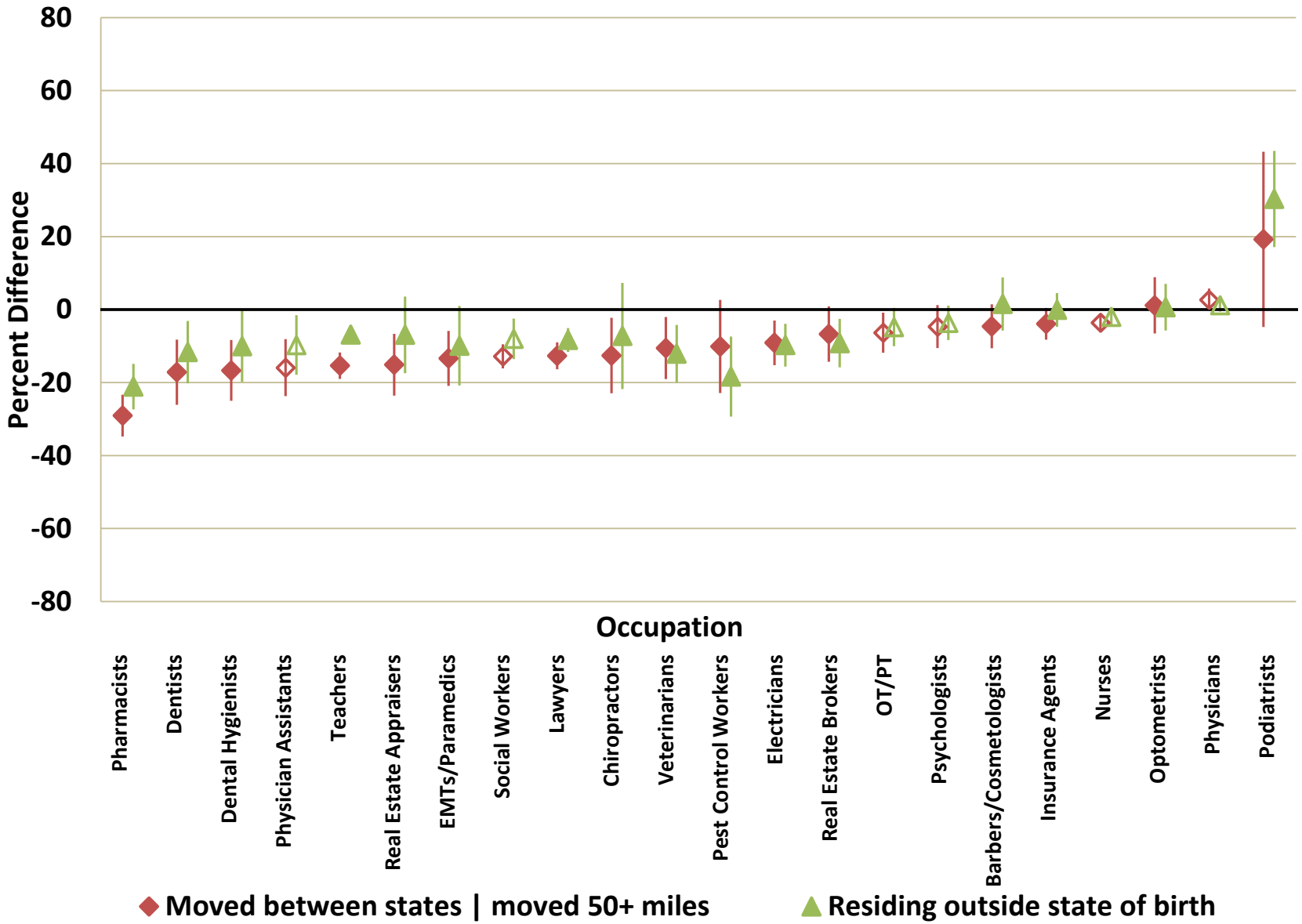
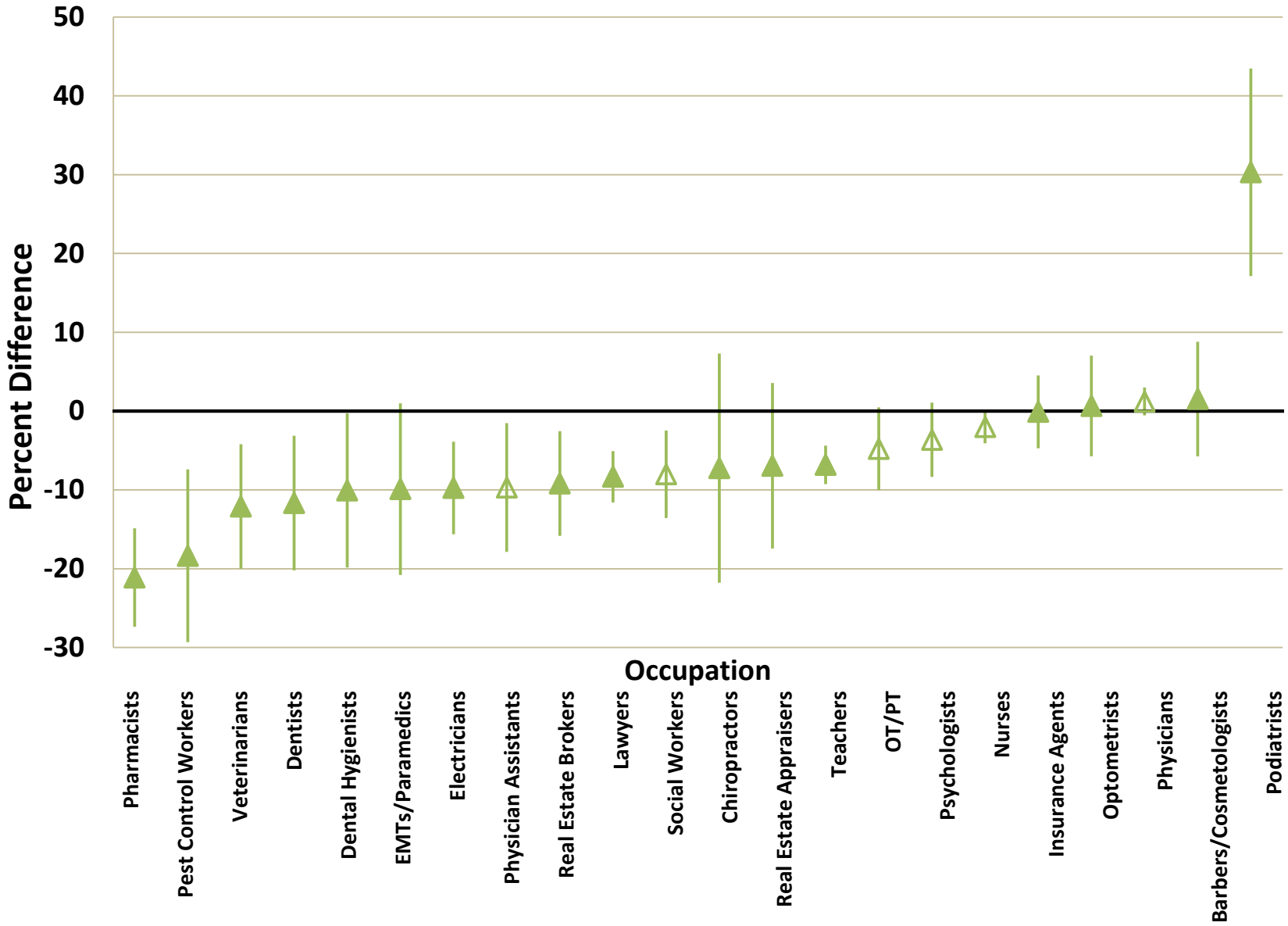


Figure 6: Occupation-specific results, individuals who moved 50 or more miles and resided outside state of birth, ACS 2005-2015



Conclusion

- Results suggest occupational licensing requirements limit the interstate migration of individuals in these occupations
  - Total difference is 5 percent reduction in probability a long-distance move crosses state lines for licensed relative to unlicensed occupations
  - Negative bias from local capital and self-selection is significant (unadjusted difference in interstate migration rates is nearly -30 percent)
  - Variation in effect size across occupations, size appears tied to state-specificity of licensing exams
- More research is needed to prove a causal relationship ▸ We tried lawyers
- Increase in occupational licensing explains only a small part of the fall in interstate migration over last few decades

Table 3: Migration and occupational licensing, all licensed individuals, ACS 2005-2015

	Full sample				Living outside state of birth			
	Moved between states	Moved at all	Moved 50+ miles | moved at all	Moved between states | moved 50+ miles	Moved between states	Moved at all	Moved 50+ miles | moved at all	Moved between states | moved 50+ miles
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Licensed	-0.007	-0.012	-0.019	-0.057	-0.005	-0.010	-0.008	-0.037
	(0.0004)	(0.001)	(0.002)	(0.006)	(0.001)	(0.001)	(0.003)	(0.006)
Dep var mean	0.025	0.150	0.237	0.646	0.037	0.160	0.284	0.769
Percentage effect	-28.00	-8.00	-8.02	-8.82	-13.51	-6.25	-2.82	-4.81
R squared	0.016	0.073	0.050	0.108	0.027	0.077	0.056	0.086
Observations	15,269,276	15,269,276	1,927,568	484,171	7,019,824	7,019,824	973,039	294,674

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Table 4: Migration and occupational licensing, state-specific vs. quasi-national licensed, ACS 2005-2015

	Full sample				Living outside state of birth			
	Moved between states	Moved at all	Moved 50+ miles | moved at all	Moved between states | moved 50+ miles	Moved between states	Moved at all	Moved 50+ miles | moved at all	Moved between states | moved 50+ miles
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
State-specific licensed	-0.014	-0.021	-0.071	-0.075	-0.017	-0.021	-0.078	-0.052
	(0.001)	(0.001)	(0.004)	(0.010)	(0.001)	(0.001)	(0.005)	(0.009)
Dep var mean	0.023	0.128	0.261	0.647	0.036	0.138	0.321	0.771
Percentage effect	-60.87	-16.41	-27.20	-11.59	-47.22	-15.22	-24.30	-6.74
R squared	0.0245	0.0895	0.0671	0.137	0.040	0.093	0.073	0.118
Observations	1,549,394	1,549,394	171,911	46,470	715,573	715,573	87,158	28,778

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Table 5: Sensitivity of moved between states, given moved 50 miles specification to control variable choice, those living outside their state of birth, 2005-2015 ACS

	OLS					Matching
	(1)	(2)	(3)	(4)	(5)	(6)
Licensed	0.001	-0.030	-0.033	-0.038	-0.037	-0.035
	(0.006)	(0.007)	(0.007)	(0.006)	(0.006)	(0.006)
Dep var mean	0.769	0.769	0.769	0.769	0.769	0.772
Percentage effect	0.12	-3.90	-4.29	-4.94	-4.81	-4.53
Education		X	X	X	X	X
Age, Sex			X	X	X	X
Other controls				X	X	X
State*year fixed effects					X	X
R-squared	0.000	0.007	0.009	0.019	0.086	0.093
Observations	294,674	294,674	294,674	294,674	294,674	281,924

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Table 6: Probability moved interstate given 100 mile move, 2005-2015 ACS, individuals residing outside their state of birth

	All licensed	State-specific	Quasi-national	State-specific vs. quasi national
	(1)	(2)	(3)	(4)
Licensed occupation group	-0.029	-0.043	-0.013	-0.038
	(0.006)	(0.009)	(0.004)	(0.009)
Dep var mean	0.853	0.852	0.854	0.852
Percentage effect	-3.40	-5.05	-1.52	-4.46
R-squared	0.089	0.090	0.090	0.119
Observations	253,432	242,370	239,734	24,760

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Table 7: Migration and occupational licensing, individuals residing outside their state of birth, 2005-2011 vs. 2012-2015 ACS

	2005-2011				2012-2015			
	Moved between states	Moved at all	Moved 50+ miles | moved at all	Moved between states | moved 50+ miles	Moved between states	Moved at all	Moved 50+ miles | moved at all	Moved between states | moved 50+ miles
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Licensed	-0.005	-0.010	-0.008	-0.037	-0.005	-0.011	-0.008	-0.037
	(0.001)	(0.001)	(0.003)	(0.007)	(0.001)	(0.001)	(0.004)	(0.007)
Dep var mean	0.038	0.164	0.282	0.768	0.037	0.154	0.290	0.772
Percentage effect	-13.30	-6.10	-2.84	-4.82	-13.66	-7.14	-2.76	-4.79
R squared	0.027	0.080	0.057	0.085	0.026	0.071	0.054	0.088
Observations	4,580,086	4,580,086	640,815	193,622	2,439,738	2,439,738	332,224	101,052

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Table 8: Fraction continuing members of occupation by migration and licensing status, 2005-2015 CPS ASEC

	Unlicensed	Licensed	State-specific licensed	Quasi-national licensed
Non-movers	0.889	0.952	0.947	0.960
Movers within county	0.835	0.914	0.908	0.924
Movers beween county, within state	0.767	0.872	0.857	0.900
Movers between states	0.667	0.853	0.828	0.881
Observations	1,042,924	92,228	57,633	34,595

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Table 9: Migration and occupational licensing, all licensed individuals, 2005-2015 CPS ASEC

	All individuals				Continuing members of occupation			
	Moved between states	Moved at all	Moved between counties | moved at all	Moved between states | moved between counties	Moved between states	Moved at all	Moved between counties | moved at all	Moved between states | moved between counties
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Licensed	-0.005	-0.012	-0.012	-0.070	-0.002	-0.008	0.005	-0.043
	(0.001)	(0.002)	(0.006)	(0.012)	(0.001)	(0.002)	(0.008)	(0.014)
Dep var mean	0.016	0.122	0.305	0.428	0.012	0.112	0.277	0.398
Percentage effect	-31.45	-9.84	-3.93	-16.36	-16.26	-7.14	1.81	-10.55
R squared	0.013	0.062	0.063	0.103	0.011	0.059	0.063	0.117
Observations	1,135,152	1,135,152	118,464	37,049	996,142	996,142	94,567	26,771

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Table 10: Migration and occupational licensing, state specific vs. quasi-national licensed, 2005-2015 CPS ASEC

	All individuals				Continuing members of occupation			
	Moved between states	Moved at all	Moved between counties | moved at all	Moved between states | moved between counties	Moved between states	Moved at all	Moved between counties | moved at all	Moved between states | moved between counties
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
State-specific licensed	-0.010	-0.015	-0.055	-0.120	-0.009	-0.014	-0.063	-0.127
	(0.002)	(0.004)	(0.015)	(0.030)	(0.001)	(0.004)	(0.014)	(0.031)
Dep var mean	0.014	0.101	0.350	0.405	0.013	0.096	0.337	0.400
Percentage effect	-71.43	-14.85	-14.29	-29.63	-69.23	-14.55	-18.69	-31.75
$R\hat{2}$	0.033	0.088	0.145	0.306	0.035	0.087	0.155	0.340
Observations	92,228	92,228	7,945	2,844	87,524	87,524	7,114	2,435

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A deeper look at lawyers

- Ideally, would have information on historical changes in state licensing requirements for all occupations
- The two large national associations for lawyers (the ABA and NCBE) provide some useful information
  - Year a state adopted first reciprocity agreement
  - State bar exam pass rates by law school and state

Lawyer reciprocity agreements and interstate migration

Introduction of reciprocity agreement lowers barriers to re-licensure in adopting state

- Ten states adopted their first agreement between 2001 and 2015
- In 2015, 7 states had no reciprocity, and 34 states had some reciprocity in 2001
- Unfortunately do not have information on member states of reciprocity agreement, only date of first adoption

Estimation strategy

Use event study to examine both state in- and out-migration of lawyers relative to two groups

- Licensed individuals (using the 22 occupations we study)
- Licensed individuals aged 40-64

In-migration specifications define reciprocity variable using current state of residence; out-migration uses last year's state of residence

Figure 7: Event study of interstate in-migration of lawyers relative to year of adoption of first reciprocity agreement, 2001-2015 ACS

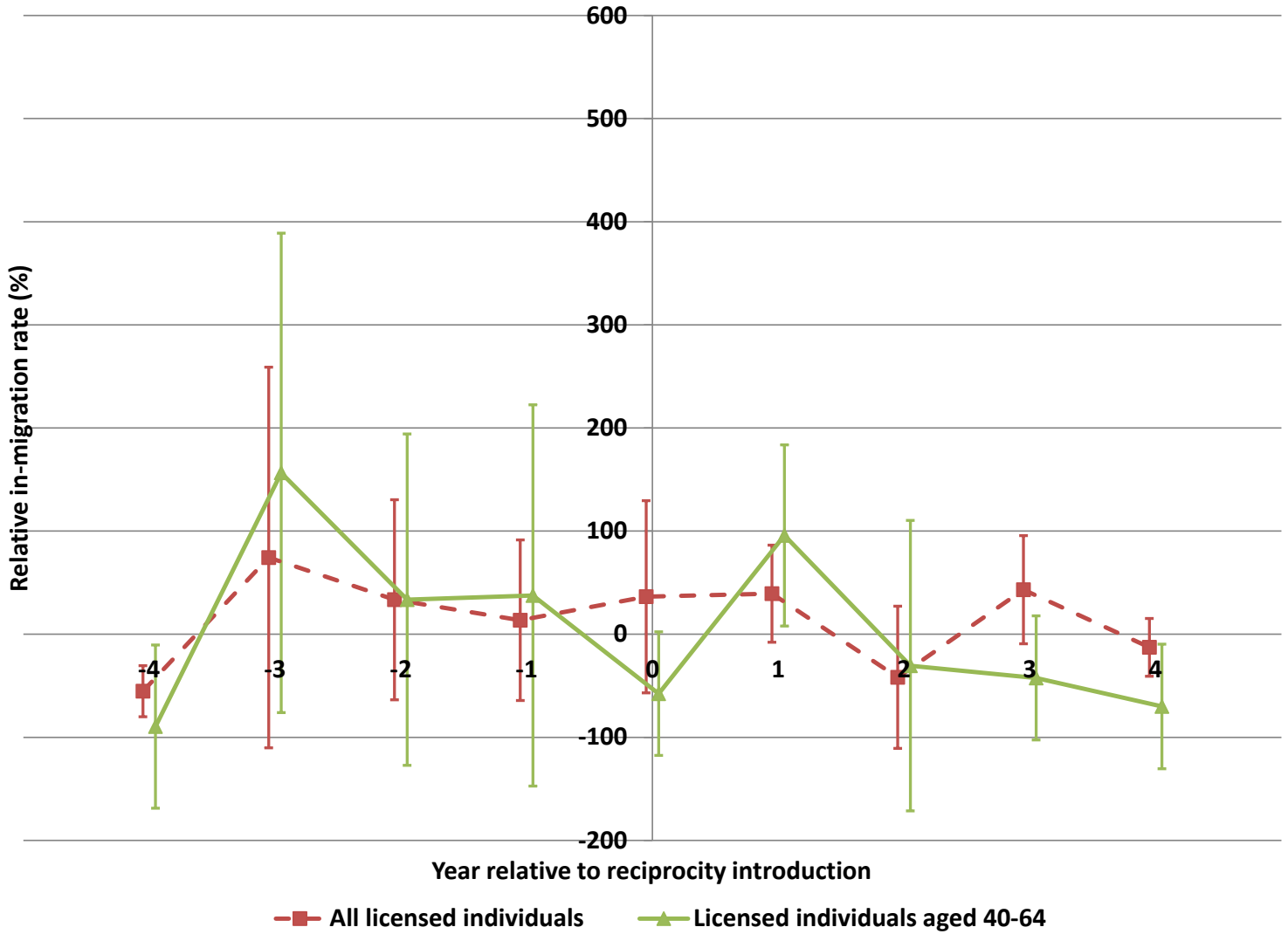

Figure 8: Event study of interstate out-migration of lawyers relative to year of adoption of first reciprocity agreement, 2001-2015 ACS