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Does a high minimum wage spur low-skilled emigration?

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HIGHLIGHTS

- We study the migration response to state and local variation in minimum wages.
- A $1 increase in a local minimum wage leads to 3.1% more low-skilled emigration.
- The minimum wage does not influence migration of high-skilled workers.

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ABSTRACT

We investigate the migration response to state and local variation in minimum wages in the United States. We find that a one dollar difference between two areas' real minimum wage is associated with 3.1% more migration of low-skilled workers towards the location with the lower minimum wage. The minimum wage does not influence the migration decisions of high-skilled workers.

1. Introduction

In this paper, we investigate the migration response to state and local variation in minimum wages. If a high minimum wage is associated with job loss, then locations that raise their minimum wage should experience more out-migration. Using data from the American Community Surveys (ACS), we find that a one dollar real difference in two locations' minimum wages is associated with 3.1% more low-skilled migration per year towards the area with the lower minimum wage.

This paper contributes to the ongoing minimum wage-employment debate,[1] suggesting that a higher minimum wage has a disemployment effect that has not been captured in case studies.

2. The data

We obtain ACS data from IPUMS at the Minnesota Population Center. We include all native-born labor force participants aged 18 to 65 who most recently worked for wages or salary, and are not enrolled in school. This is the "at-risk population", or the pool of potential labor-market driven migrants. Using the sample weights, we estimate cross-state migration of low and high-skilled workers every year from 2001 to 2013. Low-skilled workers are those with no college education. High-skilled workers report having obtained a bachelor's degree.

We also calculate migration flows between the smallest possible geographic units, which are Public-Use Microdata Areas of Migration, or "migpumas". Each migpuma is an agglomeration of counties. Beginning in 2005, the ACS indicates each migrant's state and migpuma of residence in the previous year. Migpuma boundaries change every ten years. There are 1024 migpumas based on the 2000 census, and 978 based on the 2010 census. The 2010 migpumas were first used in the 2012 ACS. Note that we only

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[1] For example, Card and Kreuger (1994), Dube et al. (2010), and Neumark et al. (2014).

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Table 1
Migration of workers.

	2005		2010	
Skill level:	Low	High	Low	High
Between states:	832,466	985,393	708,859	907,661
% to a higher min. wage destination:	17.74%	26.25%	18.83%	23.32%
Between migpumas:	2,030,479	1,952,629	1,726,483	1,840,652
% to a higher min. wage destination:	6.18%	10.59%	8.69%	13.28%

consider migration between locations in the contiguous United States.

We incorporate local minimum wages into our analysis of local migration. Between 2005 and 2013, three cities had set minimum wages above the statewide minimum: Albuquerque, San Francisco, and Santa Fe. State and local minimum wages are taken from the Bureau of Labor Statistics, and Reich et al. (2014), respectively.

We also take into account relative income and living costs as potentially significant determinants of migration. We measure both by averaging ACS data within states and migpumas. Income is per-worker wages and salary. Our proxy for living costs is the per-household average monthly rental cost of housing. Nominal series are made real using the GDP deflator from the St. Louis Fed.

In Table 1, we present estimates of total migration of low and high-skilled labor force participants in 2005 and 2010. The table shows that there is a tendency for workers to migrate to areas with low minimum wages, and this tendency is stronger for low-skilled workers. For example, 832,466 low-skilled workers were living in a different state in 2005 than in 2004. 17.74% of low skilled migration, and 26.25% of high-skilled migration is towards states with a higher minimum wage.

3. Empirical analysis

Let $m^s_{o,d,t}$ be the number of migrants with skill level s from the origin location o to destination d in year t. $P^s_{o,t}$ is the at-risk population with skill level s (high or low) in the origin. Our dependent variable is $\frac{m^s_{o,d,t}}{P^s_{o,t}}$.

Since migration rates are bound between zero and one, we use the fractional logit model of Papke and Wooldridge (1996). Given a set of time-specific migration-relevant characteristics $\mathbf{x}$ of an origin and destination location, the expected skill type s migration rate from the origin to the destination is a logistic function:

$$\mathbb{E}\left[\frac{m^s}{P^s}|\mathbf{x}\right] = \frac{\exp(\mathbf{x}\beta)}{1+\exp(\mathbf{x}\beta)} \tag{1}$$

where

$$\begin{aligned}\mathbf{x}\beta \;=\; & \beta_0 + \beta_1\left(w^M_{d,t-1} - w^M_{o,t-1}\right) + \beta_2 \log\left(pop_{o,t-1}\right) \\ & + \beta_3 \log\left(pop_{d,t-1}\right) + \beta_4 \log\left(dist_{o,d}\right) \\ & + \beta_5 \log\left(dist^2_{o,d}\right) + \beta_6 nbr_{o,d} + \beta_7 \log\left(rely^s_{o,d,t-1}\right) \\ & + \beta_8 \log\left(rent_{o,d,t-1}\right) + \tau_t + r_o + r_d \end{aligned} \tag{2}$$

$w^M_{d,t} - w^M_{o,t}$ is the difference in the real minimum wage between the destination and the origin at time t. $pop_{o,t}$ and $pop_{d,t}$ are the population of the origin and the destination, $dist_{o,d}$ is the distance between their geographic centers, and $nbr_{o,d}$ indicates whether they share borders. $rely^s_{o,d,t}$ and $rent_{o,d,t}$ are destination to origin relative real mean type-s income and mean rent. τ_t is a year fixed effect. To capture unobserved regional variation, r_o and r_d are dummies indicating which of the nine census divisions contain the origin and destination. Independent variables are lagged to mitigate endogeneity issues.

We estimate the coefficients separately for both migration between states and between migpumas. For migpumas, we include a dummy indicating whether the origin and destination are located within the same state. Because the migpuma boundaries are changed in the 2012 ACS, we cannot calculate the lagged control variables in that year. So we drop observations from 2012 at the migpuma level.

The variable of interest is β_1. For low skilled workers, $\beta_1 < 0$ if the minimum wage unemploys workers. A high minimum wage then causes emigration as workers seek more abundant jobs in low-minimum wage destinations. If instead a high minimum wage encourages immigration, then β_1 is positive. For high-skilled workers, β_1 is not expected to be significant.

The control variables capture the economic returns and direct costs of migration, and the relative amenities of the new location. Following Davies et al. (2001), we use an area's population to measure its quantity of potential social connections, opportunities, and locations. Thus, $\beta_2 < 0$ and $\beta_3 > 0$. Because it is more costly to move farther, $\beta_4 < 0$. Fixed costs of migration imply that the marginal effect of distance on migration costs will be smaller at greater distances, so $\beta_5 > 0$. We include border contiguity because in geographically large locations, there may be a stronger tendency for people to move to a neighboring location than we would expect given distance alone. For example, although the geographic centers of California and Oregon are distant, Californians should nevertheless be more inclined to move to Oregon because it is one of the nearest possible destinations. Thus, $\beta_6 > 0$. Since higher income and cheaper housing attract migrants, $\beta_7 > 0$ and $\beta_8 < 0$. However, if high rental costs proxy for unobserved local amenities, we may have $\beta_8 > 0$.

The regression results are presented in Table 2. To facilitate interpretation, we report estimates of the average percentage change in the migration rate for an incremental change in the indicated regressor. We found these estimated semi-elasticities to be more informative than average marginal effects. Thus, a $1 rise in a local minimum wage leads to 3.1% more out-migration of low-skilled workers towards locations with unchanged minimum wages. The minimum wage does not significantly influence the migration decisions of high-skilled workers. The last row of Table 2 displays the results of a Wald test of the inequality of the coefficient β_1 for high and low-skilled workers. The stronger tendency for low-skilled workers to emigrate from high minimum wage areas is highly significant.

The control variables are almost universally significant and have the expected sign. Note however that expensive housing drives away low-skilled workers, but attracts high-skilled migrants. This may be due to compensating amenities in more expensive locations. Also note that cross-migpuma migration appears to be linear in log distance.

Based on ACS data, approximately 5% of all low-skilled workers migrate between migpumas each year. Following a $1 increase in the local minimum wage, 3.1% more emigration (as implied by our results) therefore corresponds to emigration of about 0.155% of the low-skilled labor force. Neumark and Wascher (2008) report estimated teenage and restaurant employment elasticities of the minimum wage in a −0.1 to −0.3 consensus range. At the low end of this range (which is perhaps more appropriate for all low-skilled workers), a $1 increase in the local minimum wage in a jurisdiction governed by the $7.25 federal minimum wage in 2014

Table 2
Regression results.

	Between states		Between MIGPUMAs	
Skill level:	Low	High	Low	High
$w_d^M - w_o^M$	−0.077***	−0.027	−0.031**	−0.010
	(0.030)	(0.018)	(0.014)	(0.014)
Origin population	−0.308***	−0.308***	−0.230***	−0.186***
	(0.021)	(0.016)	(0.008)	(0.009)
Dest. population	0.702***	0.651***	0.646***	0.800***
	(0.021)	(0.016)	(0.008)	(0.007)
Distance	−1.660***	−0.748***	−0.911***	−0.929***
	(0.246)	(0.133)	(0.043)	(0.041)
Distance squared	0.085***	0.021**	0.002	0.000
	(0.019)	(0.011)	(0.004)	(0.004)
Neighbors	0.868***	0.861***	1.558***	0.985***
	(0.041)	(0.035)	(0.023)	(0.025)
Relative income	0.761***	0.153***	0.328***	0.655***
	(0.199)	(0.120)	(0.047)	(0.038)
Relative housing cost	−0.913***	−0.021	−0.430***	0.089***
	(0.105)	(0.088)	(0.028)	(0.033)
Constant	−7.172***	−8.455***	−10.423***	12.338***
	(0.752)	(0.440)	(0.168)	(0.171)
Observations	21,363		7,240,818	
p-value, $H_0 : \beta_1^l \geq \beta_1^h$	0.000		0.000	

Note: This table reports estimates of the average percentage change in the migration rate resulting from incremental changes in relative minimum wages and controls. Standard errors are in parentheses.
** Significant at the 5% level.
*** Significant at the 1% level.

would reduce employment of low skilled workers by about 1.38%.[2] Thus, approximately 11.6% (=0.155/1.34) of all low-skilled people who lose work following a minimum wage increase will migrate to a new location.

4. Conclusions

We have presented evidence that the minimum wage is a significant determinant of migration for low-skilled workers. Under competitive labor markets, a higher minimum wage will reduce the demand for low-skilled labor. The most reasonable explanation of our result is therefore that workers preferentially move to locations where the demand for their labor is highest.

Our results suggest that changes in employment rates in response to changes in the minimum wage reflect both a labor market response, and a migration response. Since cross-country emigration is more difficult than migration between states or cities, increases in the federal minimum wage will have a stronger negative effect on low-skilled employment rates than we might expect from experiments with local minimum wages.

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[2] $1 corresponds to a 13.8% increase in the minimum wage, which reduces employment by 1.38% if the employment elasticity is −0.1.