W.E. UPJOHN INSTITUTE FOR EMPLOYMENT RESEARCH

Employment Research Newsletter

Volume 29 | Number 1 Article 3

1-24-2022

Employment Research, Vol. 29, No. 1, January 2022

Citation
W.E. Upjohn Institute. 2022. Employment Research. 29(1). https://doi.org/10.17848/1075-8445.29(1)

JANUARY 2022 • VOL 29, NO 1

W.E. UPJOHN INSTITUTE

EMPLOYMENT RESEARCH

Wage Posting or Wage Bargaining?

A Test Using Dual Jobholders

Marta Lachowska, Alexandre Mas, Raffaele Saggio, and Stephen A. Woodbury

ARTICLE HIGHLIGHTS

- *We propose a test to distinguish between wage posting and wage bargaining.*
- *Using dual jobholders in Washington State, we estimate the sensitivity of wages and separation rates to wage shocks in a secondary job, our measure of outside option.*
- *In lower parts of the wage distribution, improved outside options lead to higher separations rates but not to higher wages, consistent with wage posting.*
- *In the highest wage quartile, improved outside options lead to higher wages, but not higher separation rates, consistent with bargaining.*
- *In the aggregate, bargaining appears to be a limited determinant of wage setting.*

ALSO IN THIS ISSUE

How wages are set is a central question for research on unemployment, business cycles, and wage inequality. Two main frameworks for wage setting are wage bargaining and wage posting. Models of wage bargaining assume that workers have the ability to negotiate compensation with their employer, and that wages incorporate information about an individual worker's outside option. The alternative to bargaining is wage posting, whereby an employer offers a package of compensation that the worker must take or leave. Under wage posting, wages only respond to outside options measured at the market level—changes in an individual worker's outside option have no influence.

Hall and Krueger (2010, 2012) obtained direct evidence by surveying a representative sample of newly hired workers in the United States and found that one-third reported bargaining over pay before accepting their position. Hall and Krueger's work stimulated several studies using observational data: Faberman et al. (2017) found that workers who could have stayed in their jobs before accepting another position reported obtaining a higher wage, and Lachowska (2017) found that workers' subjective assessments of how easy it would be to find an alternative job or to be replaced in their current jobs are highly correlated with the wage received in their current jobs. This early research suggests a significant role for workers' outside options and bargaining in determining wages.

In this article, we summarize a different approach to understanding the relative importance of wage bargaining and wage posting. The approach is based on the experience of dual jobholders observed in linked employer-employee wage records from Washington State. We measure the change in a dual jobholder's outside option at the primary job as the change in the average wage of the worker's coworkers in the secondary job.[1] By using this worker-specific measure of the outside option, we can estimate how primary-job wages react to wage changes in secondary jobs while controlling other changes affecting all workers at the primary employer. Finding that primary-job wages respond to wage changes in the secondary job suggests wage bargaining; absence of a wage response suggests wage posting.

To more clearly distinguish wage posting from wage bargaining, we also examine whether separations from the primary job are related to wage changes in the secondary job. In a job where wages are posted and not negotiable, we expect workers to respond to a better outside option by leaving the job for that option. In our setting, the job offering the better outside option is the dual jobholder's secondary job.

Individual wage bargaining occurs only in the top one-fourth of the wage distribution. For other workers, wage setting is characterized by wage posting, or take-it-or-leave-it offers by employers.

Who Leaves and Who Bargains?

Figure 1 shows how the distribution of dual jobholding by industry in the sample we analyze compares to the industry distribution of single jobholders. Dual jobholding is concentrated in service sectors—health care, accommodation and food services, and retail trade—with these industries roughly equally represented among primary and secondary jobs. Workers in manufacturing, information, and finance and insurance are less likely to be dual jobholders.

Using this sample of dual jobholders, the analysis points to two main findings. First, changes in a worker's wage in the primary job are only weakly relative to changes in the wages of coworkers in the secondary job. Overall, then, bargaining plays a quite limited role in wage setting.

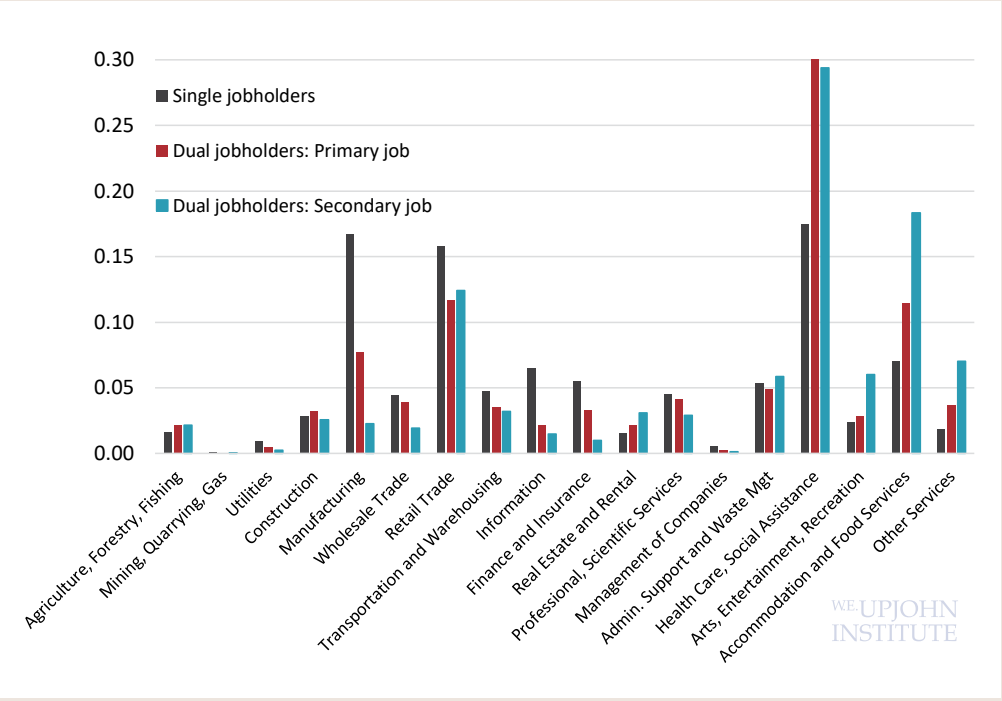
Consistent with previous research, we find that employers limit work hours on primary jobs, creating a motive to moonlight for workers who want additional income.

Rather, when wages on the secondary job improve, workers tend to leave the primary job for the secondary job. Specifically, a 10 percent increase in the outside option leads to a 4 percentage point increase in the probability of transitioning to the job offering the better outside option. Given the low baseline separation rates in our sample, this estimate represents a large increase.

Second, we find substantial differences in the prevalence of bargaining and posting among different groups of workers. Specifically, bargaining is more prevalent among workers in the top 25 percent of the wage distribution. For these high-wage workers, better outside options tend to result in higher wages on the primary job rather than separation and movement to the secondary job. But for workers in the lowest 25 percent of the wage distribution, we see no evidence of pay increases on the primary job from improved outside options. Instead, we see separation from the primary job, consistent with wage posting and an absence of bargaining.

Figure 2 elaborates on this point, showing that sectors of the economy where improved outside options lead to wage increases tend to be those where improved outside options lead to fewer separations. Specifically, the horizontal axis shows the estimated effect of a 1 percent improvement in the outside option on the primary-job wages, while the vertical axis shows the estimated effect of a 1 percent improvement in the outside option on the likelihood of separating from the primary job and moving to the secondary job. As indicated by the dashed, best-fit line, there is an inverse relationship: following an improvement in workers' outside options, employers either negotiate with them for better pay or the workers leave the employer for the job offering the better outside option. For example, in finance and insurance, employers tend to respond to improved outside options by negotiating a higher wage. In contrast, in health care and accommodation and food services, improved outside options tend to lead to a separation.

Figure 1: Where Do Dual Jobholders Work?



NOTE: The figure shows the proportion of single jobholders (black bars), of the primary job of dual jobholders (red bars), and of the secondary job of dual jobholders (blue bars), by industry. Observations of single jobholders and of dual jobholders' primary jobs in educational services and public administration are omitted.
SOURCE: Authors' calculations from Washington State wage records.

Effects of Changes in Hours on the Primary Job

The data also allow us to study how wage changes in one job affect hours worked in the other jobs. This feature helps us understand why workers choose to moonlight. There are two results. First, we find that work hours with the primary jobs are insensitive to the changes in the worker's outside option. This is consistent with a simple model, outlined in the working paper, where workaholics face limits on the hours they can work in their primary jobs and take a second job for extra income. In other words, people moonlight because they want extra income and their main jobs do not let them add hours.

Second, we find moderate, but significant, effects of wage changes in a worker's primary job and the hours worked on the secondary job. Because

hours on the primary job are essentially fixed, a change in the primary-job wage results in additional earnings without a change in work effort—what economists call an income effect. We find that this income effect is similar to those found in studies of individuals winning lotteries.

Conclusions

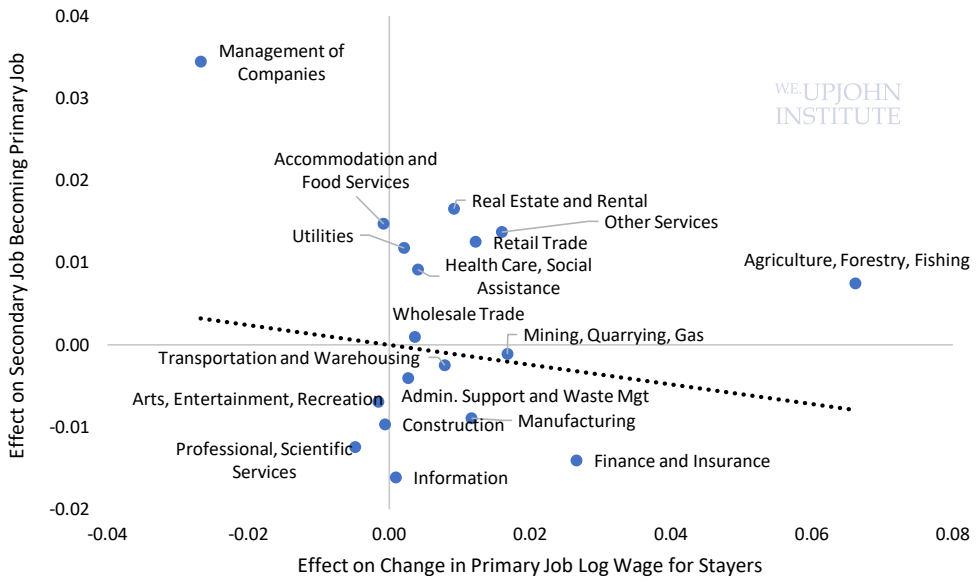
Our findings show that wage posting is a common feature of the labor market, and that separation is the main response to improved outside options, particularly for low-wage workers. On the other hand, wage bargaining is not as prevalent in the data, except perhaps when considering higher-wage workers.

Our approach to measuring the outside options of individual workers can be applied to any setting with linked employer-employee data and multiple jobholders. However, the results may not generalize to groups of dual jobholders working in nonstandard work arrangements. These nonstandard arrangements include electronically mediated "gig" jobs and other independent contractor positions that are not currently covered by administrative wage records. Future research may answer whether these workers have little power to negotiate wages or whether they bargain over wages.

Note

1. We describe our approach in greater detail in the accompanying W.E. Upjohn Institute working paper (Lachowska et al. 2022). Our approach is related to work by Caldwell and Harmon (2019), who examine how wages are affected by changes in the wages of former coworkers.

Figure 2: How a 1 Percent Improvement in the Outside Option Affects Wages in the Primary Job and the Likelihood of the Secondary Job Becoming the Primary Job, by Industry



NOTE: This scatterplot shows the effect, by industry, of a 1 percent higher coworker average wage on the secondary job on the log wage of the primary job among stayers (horizontal axis) and on the likelihood of the secondary job becoming the primary job (vertical axis). The slope of the dashed, best-fit line is negative, indicating that sectors in which primary job wages rise are less likely to result in separations.
SOURCE: Authors' calculations from Washington State wage records.

References

Caldwell, Sydnee, and Nikolaj Harmon. 2019. "Outside Options, Bargaining, and Wages: Evidence from Coworker Networks." Unpublished manuscript, University of Copenhagen.

Faberman, R. Jason, Andreas I. Mueller, Ayşegül Şahin and Giorgio Topa. 2017. "Job Search Behavior among the Employed and Non-Employed." National Bureau of Economic Research Working Paper No. 23731. Cambridge, MA: National Bureau of Economic Research.

Hall, Robert E., and Alan B. Krueger. 2010. "Evidence on the Determinants of the Choice between Wage Posting and Wage Bargaining." National Bureau of Economic Research Working Paper No. 16033. Cambridge, MA: National Bureau of Economic Research.

———. 2012. "Evidence on the Incidence of Wage Posting, Wage Bargaining, and On-the-job Search." *American Economic Journal: Macroeconomics* 4(4): 56–67.

Lachowska, Marta. 2017. "Outside Options and Wages: What Can We Learn from Subjective Assessments?" *Empirical Economics* 52(1): 79–121.

Lachowska, Marta, Alexandre Mas, Raffaele Saggio, and Stephen A. Woodbury. 2022. "Wage Posting or Wage Bargaining? A Test Using Dual Jobholders." Upjohn Institute Working Paper No. 22-359. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.

For additional details, see the full working paper at https://research.upjohn.org/up_workingpapers/359.

Marta Lachowska is a senior economist at the W.E. Upjohn Institute. Alexandre Mas is a professor of economics at Princeton University. Raffaele Saggio is an assistant professor at University of British Columbia and an affiliate of W.E. Upjohn Institute Research Network on Outsourcing. Stephen A. Woodbury is a senior economist at the W.E. Upjohn Institute and a professor of economics at Michigan State University.

Isolated States of America

State Borders, Mobility, and Labor Markets

Riley Wilson

The United States has traditionally been seen as a highly mobile country, with nearly one in five people changing their county of residence every five years. Even though internal migration has steadily declined over the past 40 years, the United States still exhibits higher internal mobility than most European countries (Molloy, Smith, and Wozniak 2011). Geographic mobility is often viewed as both an opportunity for individuals to find better job opportunities and a mechanism through which places adjust to economic change, both positive (people move in) and negative (people move out); both channels contribute to labor market fluidity and economic dynamism (Blanchard and Katz 1992; Molloy et al. 2016).

People are three times as likely to move to a different county in the same state as to move to an equally distant county in a different state.

However, local economic conditions vary considerably across the country. Most counties are within an hour's drive of another county that has higher average wages, lower average house prices, or both. Although there might be other characteristics that offset these raw differences, many individuals could plausibly encounter better employment or housing opportunities a relatively short distance away, either through migration or commuting. Factors that reduce or limit this internal migration or commuting could depress economic growth.

In a related paper, I study a novel aspect of U.S. internal migration and commuting across counties. Drawing on IRS data on county-to-county migration and census data on county-to-county commuting, I show that, even conditional on distance, cross-county migration and commuting drop significantly when a state border lies between the two counties. People are three times as likely to move to a different county in the same state—and about twice as likely to commute to a different county in the same state—as to move to an equally distant county in a different state (see Figure 1, next page). In other words, state borders reduce both residential and employment mobility. Because there are no legal or residency restrictions associated with state borders (as there are with national borders), this pattern is perhaps unexpected. Such migration "frictions" could also shape the way places respond to local economic shocks.

ARTICLE HIGHLIGHTS

- *County-to-county mobility drops significantly when counties are separated by state borders.*
- *This drop is not driven by differences in local characteristics or in moving costs related to state-level policy.*
- *State borders also affect county-to-county social connectedness (Facebook friendships), suggesting that personal ties, lack-of-information friction, or home-state identity might be at play.*
- *Counties on state borders that face this migration stickiness have weaker recoveries after cyclical downturns, such as the Great Recession.*

Why State Borders Could Matter

Economists typically model the decision to migrate as a choice between locations based on the costs and benefits associated with making the move. An individual will move from County A to County B if the net benefit they get from County B over County A exceeds the costs of moving there. This simple framework suggests three potential explanations for the drop in mobility at state borders. First, local characteristics that provide benefits (e.g., good schools or transit options) could discretely change at state borders, leading to abrupt differences in the propensity to make such a move. Second, state policies could impose extra costs on cross-border moves (e.g., occupational licensing or higher taxes), discouraging people from leaving the state. Finally, the "connectedness" of counties could fall across state lines. For example, people might be hesitant to switch to a new state if they have fewer friends or family ties there, or if their social networks provide less information about circumstances there.

Local Characteristics Don't Drive the State Border Mobility Gap

If large differences in benefits at state borders were behind the mobility gap, we would expect to see differences in local characteristics that people care about, such as economic opportunities, housing affordability, weather, political attitudes, and local school performance. However, this does not appear to be the case. When I examine the difference in several characteristics between counties in the same state and counties in an adjacent state, I do not find any sudden jump to have occurred as the distance between the two groups shrinks. In other words, employment

rates, average wages, population, demographic composition, industry composition, housing prices, weather, voting patterns, and school outcomes are all similar across state borders. Figure 1 shows that controlling for these characteristics does not affect the migration gap at state borders, suggesting the drop in mobility there is not driven by differences in local characteristics.

State Policies Don't Drive the State Border Mobility Gap

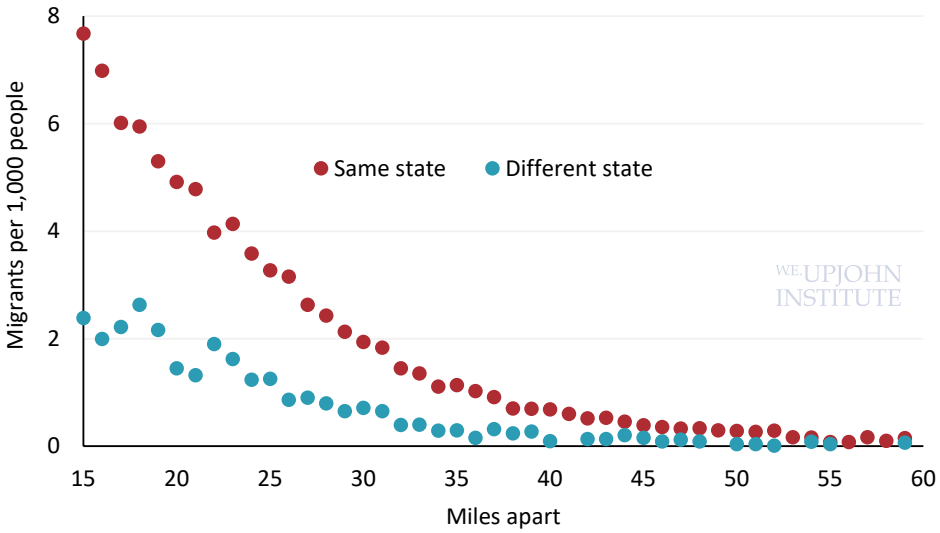
If state policies that caused higher moving costs at state borders were driving the mobility gap, we would expect patterns to be asymmetric across states. For example, if differences in state income taxes played a role, there should be larger state border migration penalties in moving from low-tax to high-tax states, but smaller migration penalties (or even bonuses) in the reverse direction. This also does not appear to be the case. Conditional on distance, crossing state borders is associated with a similar drop in migration regardless of whether the potential destination has higher or lower taxes than the point of origin. This pattern holds not just for taxes (income, sales, or corporate), but also for the generosity of several state programs and policies (EITC, Medicaid, TANF, school funding, minimum wage) and the stringency of occupational licensing.

The Role of Social Connectedness

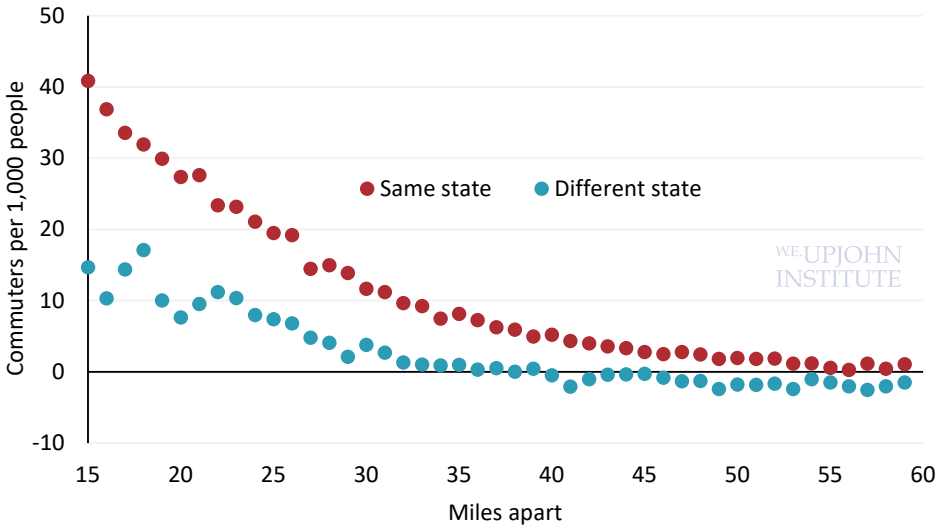
If differences in local characteristics and state policies don't drive migration gaps at state borders, differences in "social connectedness" across areas might. Drawing upon the Social Connectedness Index, which measures Facebook friendship rates between pairs of counties (Bailey et al. 2018), I find a similar drop-off in county-to-county friendship rates at state borders. Conditional on distance, people have about half as many Facebook friends across state lines as they do in counties within the same state (see Figure 2).

It is challenging to determine causality from this relationship, as social networks could affect migration but migration could also affect social networks. Nonetheless, the correlation is consistent with several potential mechanisms. Individuals might face large psychic costs when moving away from friends and family. If individuals have fewer friends across state borders, psychic costs would be larger for moves that cross state lines. Having

Figure 1 Panel A: County-to-County Migration Rates



Panel B: County-to-County Commuting Rates



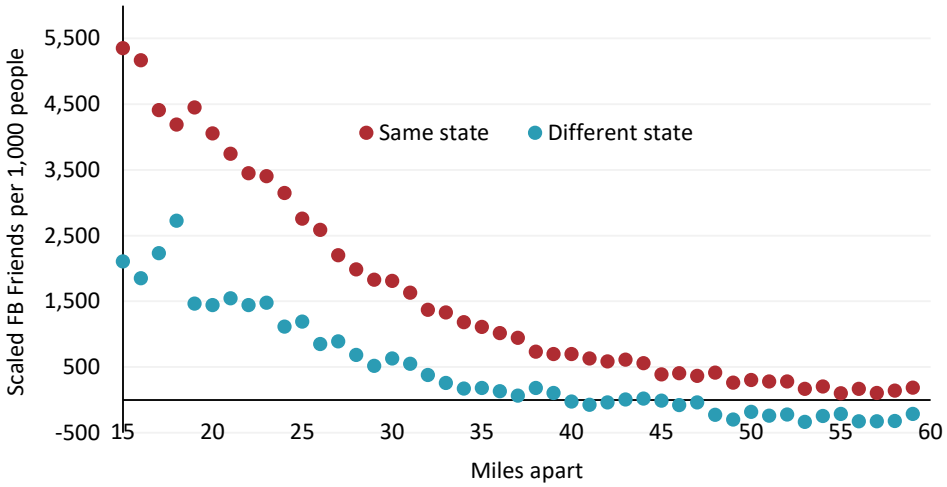
NOTE: The circles show migration rates (Panel A) or commuting rates (Panel B) between pairs of counties, aggregated by distance and whether the pairs are in the same or different states. They represent statistical estimates that have been adjusted for differences between county characteristics in each pair, as detailed in the paper, and thus can be slightly negative. The horizontal axis indicates the distance in miles between county-pair centers, where centers are population-weighted centroids.
SOURCE: Author's own calculations using 2017 IRS SOI county-to-county flows and 2017 LEHD LODES.

fewer social connections across the state border could also impede the flow of information, leading to more uncertainty and reducing people's willingness to change states.

A third factor that influences both cross-border social connectedness and mobility could also be at play. People might exhibit a behavioral quirk known as the endowment effect, in which it is especially costly to give up things one is initially "endowed" with. What would this look like in the migration decision? This might show up as a home state identity. People identify with the state that they were born in or grew up in, and it is thus costly for them to consider moving away. Unfortunately, few data sources allow the exploration of this type of mechanism. However, there are several pieces of suggestive evidence. When looking at the American Community Survey, an annual survey of more than one million U.S. households, movers who were living in their state of birth are less than half as likely to move out of state as movers who were already living outside their birth state. Using data from a small survey on mobility conducted by the Pew Research Center in 2008, I find that 68 percent of respondents say that they live in their birth state because "they feel like they belong [there]" or because their birth state is the place they most identify with. A large share of people thus exhibit a birth-state identity, and in the survey these individuals were less likely to have ever moved out of state. Interestingly, when asked hypothetical questions about moving, individuals who exhibit a birth-state identity are less likely to report willingness to move *only* if they are currently living in their birth state. This is consistent with an endowment effect, making it costly to move away from one's state of birth.

Mobility drops at state borders, even when controlling for detailed local characteristics of origin and destination counties.

Figure 2 County-to-County Facebook Friendship Rates Also Drop Off at State Borders, Even When Distances Are Small



NOTE: The circles show the number of Facebook friends per 1,000 residents, as measured in the Social Connectedness Index, between pairs of counties, aggregated by distance and whether the pairs are in the same or different states. The number of Facebook friends has been scaled to protect privacy, so values can fall below 0. See note to Figure 1.
SOURCE: Author's own calculations using 2016 Social Connectedness Index (Bailey et al. 2018).

Policy Implications: Does This Pattern in Mobility Matter for Labor Markets?

Regardless of *why* state borders affect mobility, understanding how this pattern influences labor markets has important policy implications. Recent research finds that places that experienced larger downturns during the Great Recession took longer to recover economically and fell behind less affected areas, even years later (Hershbein and Stuart 2020). Building on this work, I test to see whether this pattern differs for counties at state borders (where this mobility "friction" is likely more binding) relative to counties in the interior of the state (see Figure 3). I find that the pattern is stronger in border counties, where recoveries from employment losses occur even more slowly. Consistent with the mobility pattern, border counties also see lower in-migration and in-commuting during the recovery period, potentially limiting the dynamism of these local economies. These patterns in turn may help us better understand the variation in economic success and growth across areas of the United States and highlight why some places are slow to bounce back from economic downturns. They also are relevant for the evaluation of social safety-net and place-based policies, as migration frictions can affect who stays, who comes in, and how both affect the recovery path from a local recession.

References

Bailey, Michael, Rachel Cao, Theresa Kuchler, Johannes Stroebel, and Arlene Wong. 2018. "Social Connectedness: Measurement, Determinants, and Effects." *Journal of Economic Perspectives* 32(3): 259–280.

Blanchard, Olivier J., and Lawrence F. Katz. 1992. "Regional Evolutions." *Brookings Papers on Economic Activity*. Washington, DC: Brookings Institution.

Hershbein, Brad, and Bryan A. Stuart. 2020. "Recessions and Local Labor Market Hysteresis." Upjohn Institute Working Paper No. 20-325. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.

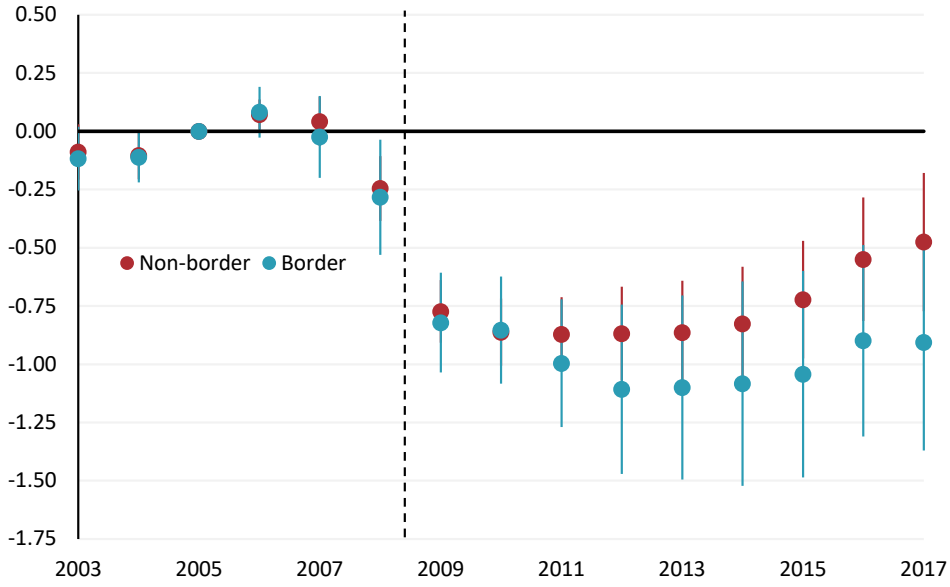
Molloy, Raven, Christopher L. Smith, Riccardo Trezzi, and Abigail Wozniak. 2016. "Understanding Declining Fluidity in the U.S. Labor Market." *Brookings Papers on Economic Activity*. Washington, DC: Brookings Institution.

Molloy, Raven, Christopher L. Smith, and Abigail Wozniak. 2011. "Internal Migration in the United States." *Journal of Economic Perspectives* 25(3): 173–196.

For additional details, see the working paper at https://research.upjohn.org/up_workingpapers/358/.

Riley Wilson is an assistant professor of economics at Brigham Young University.

Figure 3 Employment Recovery after the Great Recession Also Lags at State Borders



NOTE: The estimates show the year-by-year (approximate) impact of a 1 percent greater decrease in commuting-zone employment between 2007 and 2009 on the percentage change in employment in other years, separately for counties on state borders and those in the interior of the state.
SOURCE: Author's own calculations using the 2000–2017 Quarterly Census of Employment and Wages.

W.E. UPJOHN INSTITUTE
FOR EMPLOYMENT RESEARCH

300 S. Westnedge Avenue
Kalamazoo, MI 49007-4686

Nonprofit Org.
U.S. POSTAGE
PAID
Kalamazoo MI
Permit No. 756

Connect with us

W.E. Upjohn Institute for Employment Research | @UpjohnInstitute | WEBSITE upjohn.org | INSTITUTIONAL REPOSITORY research.upjohn.org

Vol. 29, No. 1
Employment Research *is published quarterly by the W.E. Upjohn Institute for Employment Research. Issues appear in January, April, July, and October.*

The Institute is a nonprofit, independent research organization devoted to finding and promoting solutions to employment-related problems at the international, national, state, and local levels.

W.E. Upjohn Institute for Employment Research
300 S. Westnedge Avenue, Kalamazoo, MI 49007-4686
(269) 343-5541 • www.upjohn.org
Michael W. Horrigan, President