

Minimum Wage Impacts on Employment

A Look at Indiana, Illinois, and Surrounding Midwestern States

Michael F. Thompson: Economic Research Analyst, Indiana Business Research Center, Kelley School of Business, Indiana University

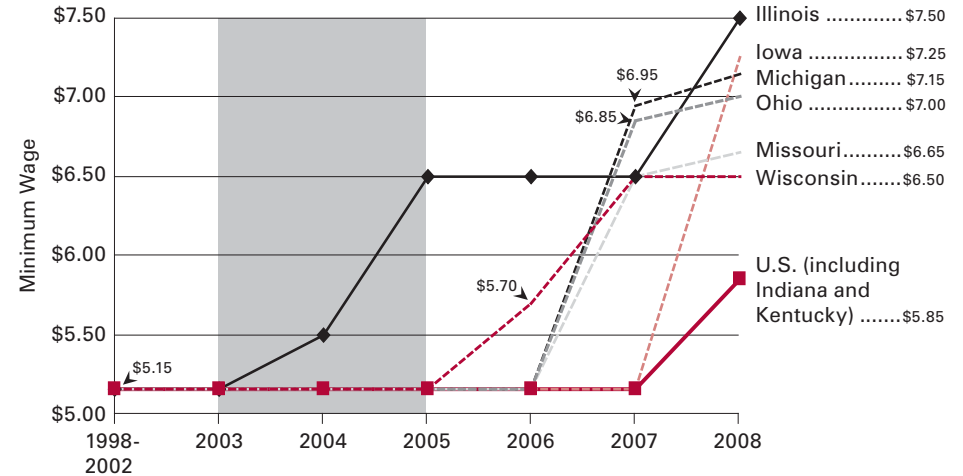
While minimum wage increases are a broadly popular method of reducing income inequality, they are controversial since many business owners and economists argue they reduce employment. This debate has resurfaced now that Indiana recently increased its minimum wage for the second time in twelve months, following a period of almost ten years when it remained constant at \$5.15 per hour.

This article summarizes the role of federal and state governments in setting the minimum wage and the mixed opinions concerning the outcome of such laws. To inform the debate on whether increasing minimum wages has an adverse impact on job growth, this study will compare Illinois—the only Midwestern state to raise its minimum wage in both 2004 and 2005—to Indiana and other neighboring states. Interestingly, not only did Illinois experience higher employment growth between 2002 and 2005 but minimum wage increases did not have a significant impact on employment growth in the region controlling for state GDP and population growth. Changing gears, this study then focuses on whether any negative effects of Illinois' higher minimum wages were found in vulnerable counties along the Indiana-Illinois border where minimum wages differed by \$1.35 in 2005. Particular focus will be given to the impact on employment in the low-wage "accommodation and food service" industry.

Federal vs. State Minimum Wage Legislation

Most workers are covered by the Federal Fair Labor Standards Act (FLSA) and are paid at least the

FIGURE 1: Effective Minimum Wages for Most Employers in Midwestern States, 1998 to 2008*



*January 1 each year
Source: Tax Policy Center (www.taxpolicycenter.org)

federal minimum wage, which was first enacted in 1938 to maintain the "minimum standard of living necessary for health, efficiency, and general wellbeing of workers."¹ Current FLSA legislation ensures that workers receive at least \$6.55 per hour (up from \$5.85 effective July 24, 2008) and the minimum wage will increase again to \$7.25 on July 24, 2009.² State law is allowed to supersede the federal law only in states that have set higher minimum wages. Currently most states have minimum wages above the federal mark—with a high of \$8.07 in the state of Washington.³ This growing trend of states setting their own minimum wage laws is largely in response to the nearly ten-year gap between the last two federal minimum wage increases in September 1997 and July 2007—the longest gap in the history of the FLSA.⁴

Figure 1 shows that, while no Midwestern states had set higher minimum wages than the federal level of \$5.15 between 1997 and

2003, almost all states in the region had done so by 2007. Indiana's state minimum wage is officially set to be equal to the federal rate. Notable among Midwestern states is Illinois, whose \$0.35 increase in 2004 and further \$1 increase in 2005 represent the only minimum wage increases in the region during the highlighted 2003–2005 time period, except for Wisconsin which raised its minimum wage by \$0.55 halfway through 2005.

Popular Opinion vs. Minimum Wage Economics

Even though a \$2 per hour increase in the minimum wage would only affect the wages of approximately 7 percent of the national population, pollsters generally find support for minimum wage increases to be around 70 percent.⁵ In one of the most detailed examinations of minimum wage legislation, Jerod Waltman reveals that this high level of support is not limited to people earning less than \$20,000 annually, since three-fifths of people earning over \$75,000 annually also support such increases.

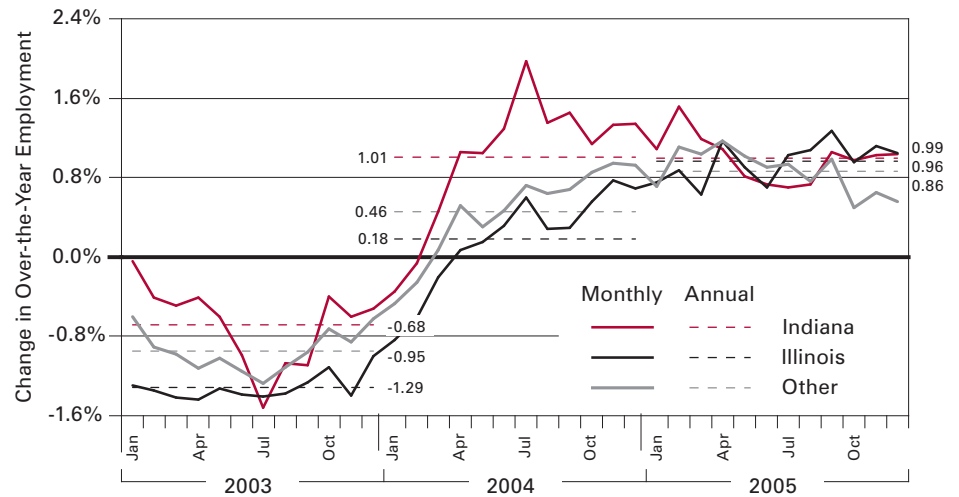
He also finds broad support among both registered Democrats and Republicans, as well as across all racial groups. The typical minimum wage earner is hardly a middle-class teenager earning pocket-change—almost half of this population is above the age of 25, 41 percent work full-time and 87 percent are white.⁶ Many Americans sympathize with minimum wage earners since they have earned low wages at some point in their lives, and over 17 percent of Americans without a college degree have at least one family member who earns the minimum wage.⁷

Despite this popularity, influential policy makers and economists have mixed opinions regarding whether increasing the minimum wage would help or hurt low-income workers. Jarod Bernstein, Elizabeth McNichol, and Karen Lyons argue that a stagnant minimum wage is partly to blame for rising income inequality across the United States. They explain that while high income earners saw their incomes rebound quickly after the economic recession of 2001, minimum wage workers saw the value of their income decline in real value (after adjusting for inflation) to a purchasing power 28 percent lower in 2005 than it was in the late 1970s.⁸ However, Craig Garthwaite and colleagues at the Employment Policies Institute counter that increasing the minimum wage would likely lead to higher levels of unemployment as businesses find they are unable to employ as many workers.⁹

Minimum Wage Increases vs. Job Growth at the State Level

The fact that Illinois represents the primary Midwestern state to increase its minimum wages between 2003 and 2005 provides a good test case to understand the effect increasing the minimum wage has on employment growth. Major Illinois newspapers summarized the concerns of several critics of Illinois’ decision to raise

■ FIGURE 2: Monthly and Annual Percent Change in Private Employment, 2003 to 2005



Note: Other Midwestern states include Iowa, Kentucky, Michigan, Missouri, Ohio, and Wisconsin.
Source: IBRC, using data from the Bureau of Labor Statistics, Quarterly Census of Employment and Wages

its minimum wage, especially when it was poised to make a full dollar increase in 2005. Critics included the Illinois state director of the National Federation of Independent Business who believed that small business owners would have little choice other than “laying off people, cutting back hours or cutting benefits.”¹⁰ However, the Illinois governor later countered that his state actually led the nation in job growth for two months during 2005 and has pushed for his state to continue adjusting the minimum wage to reflect changing costs of goods and services.¹¹

Data from the U.S. Bureau of Labor Statistics (BLS) are used here to evaluate whether or not Illinois’ minimum wage may have affected its employment growth compared to Indiana and surrounding Midwestern states.¹² Figure 2 shows the employment growth for private employers in all industries over the previous year for each month and the annual average for 2003 through 2005.

Overall, we see substantial job losses among private employers in all Midwestern states in 2003. During this period, no state had a higher minimum wage than \$5.15 (the default U.S. rate) and the region—

like much of the nation—was still recovering from the 2001 recession. This decline was particularly acute in Illinois whose 2003 employment figures were 1.3 percent lower than the previous year; only Michigan had worse employment decline (-1.8 percent).

Despite its \$0.35 increase in minimum wages, Illinois joined virtually all other Midwestern states by achieving marginal employment growth in 2004. Although its job growth of only 0.2 percent could hardly have erased the damaging job losses of the prior year, its increase in minimum wage did not prevent it from rebounding employment figures. Of course, other states without minimum wage increases seemed to have improved even better, including Indiana with a 1 percent increase and notably Iowa whose 1.5 percent growth was even better than the U.S. figure of 1.3 percent.

However, Illinois achieved the region’s second biggest improvement in job growth in 2005 when it increased its minimum wage by a full dollar to \$6.50 per hour. Illinois’ job growth of 0.96 percent closed the gap with its Midwestern neighbors and was substantially better than the other two comparably large

Midwestern states: Ohio had only 0.21 percent employment growth and Michigan still had a small decline of -0.02 percent.

Reconsidering Minimum Wage Effects on Job Growth

These patterns in job growth between 2003 and 2005 indicate that Illinois' increasing minimum wage rates did not reduce overall employment growth for private employers and preliminary statistical analyses confirm this lack of an impact as we see in Table 1. These analyses use U.S. Bureau of Labor Statistics (BLS) and U.S. Bureau of Economic Analysis (BEA) data from eight Midwestern states to analyze what may account for the one-year employment change for each of thirty-six months from January 2003 to December 2005.

First, column 1 of the table shows that minimum wage increases on their own do not have a significant impact on employment growth when we simply control for the time periods of this study. This is in marked contrast to the traditional model (column 2) where, as expected, we see strong positive impacts of state GDP growth and population growth.¹³

Even in the full model (column 3) we see that minimum wages still have no significant impact—positive or negative—on employment growth, once we control for traditional factors.¹⁴ Comparatively, the model estimates a 0.8 percent increase in employment for every 1 percent increase in population and a 0.2 percent increase in employment estimated for each 1 percent increase in state GDP. The time periods had substantially greater positive impacts reflecting the gradually improving U.S. economy. Employment growth between 2003 and 2004 was 1.3 percent better than growth during the base year (2002–2003) and the employment growth between 2004

TABLE 1: Impact of Select Variables on Employment Growth for Midwestern States, January 2003 to December 2005

Model:	1	2	3	4
	Minimum Wage Only	Population and State GDP Growth	Complete Model	Fixed-Effects
Minimum Wage Increase ^a (\$)	-0.329 (0.93)		0.428 (1.49)	-0.139 (0.25)
Population Growth ^a (%)		0.947** (3.93)	0.841** (3.85)	0.876 (1.46)
Real GDP Growth ^a (%)		0.212** (10.45)	0.196** (8.68)	0.129+ (2.22)
Previous Year's Real GDP (Billions)		-0.002** (5.03)	-0.003** (6.08)	0.024 (0.80)
Annual Period Compared to 2002–2003				
Period 2003–2004	1.507** (12.57)	1.259** (11.85)	1.263** (11.71)	1.228** (6.05)
Period 2004–2005	1.983** (10.27)	2.076** (15.37)	2.002** (17.60)	1.768** (6.89)
Constant	-0.817** (4.12)	-1.233** (5.79)	-1.038** (6.25)	-6.770 (1.02)
Observations	288	288	288	288
R-squared	0.596	0.835	0.840	0.818
BIC ^c	-243.874	-491.079	-494.316	

Note: N = 288 (8 groups of 36 months each). The coefficients are estimated via Ordinary Least Squares (OLS) regression with cluster-corrected robust t statistics in parentheses. Additionally, Model 4 uses Fixed-Effects estimation. Symbols following coefficients denote significance levels: + = 10%; * = 5%; ** = 1%. Midwestern states refer to Illinois, Indiana, Iowa, Kentucky, Michigan, Missouri, Ohio, and Wisconsin.

(a) Measures for "growth" and "increase" reflect change between current month and same month in the previous year. Real State GDP figures use chained 2000 dollars.

Source: IBRC, using data from the Bureau of Labor Statistics and the Bureau of Economic Analysis

and 2005 was 2 percent better than during the base year.

Keeping in mind that every state may have unique internal factors at play, column 4 represents an exploratory fixed-effects model to account for unobserved heterogeneity within each individual state.¹⁵ In this model, only the time periods are highly significant and real GDP growth is only marginally significant—indicating that the impacts observed in the full model are not primarily due to peculiarities within these Midwestern states over this time period.

The question of why increases in the minimum wage do not significantly reduce employment is beyond the scope of this article but several possible answers deserve future study. One idea is that perhaps more low-wage employees are able to enter and stay within the labor market with the promise of earning better income. Early evidence of this may be seen in Washington State where employment growth has been high and even low-wage employers in small towns seem to have found manageable ways to offset extra labor

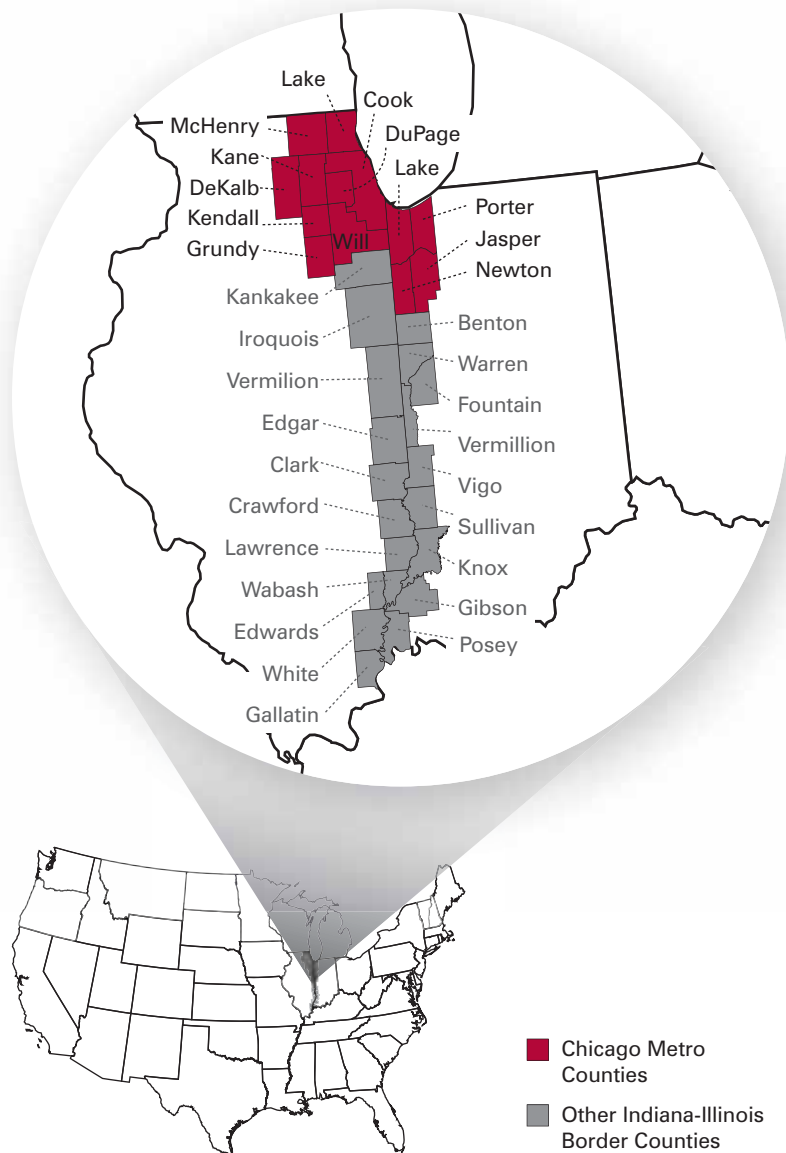
costs due to the highest minimum wage rates in the country.¹⁶

Employment Vulnerability

While the evidence presented so far strongly questions conventional wisdom that increasing the minimum wage reduces total employment at the state level, the relationship between minimum wages and employment may be far more complex in particular industries or in sub-state regions. To consider this potentially complex impact, we turn our attention to the accommodation and food service industry along the Indiana–Illinois border. Analysis will also focus on the counties within the Chicago Metropolitan Statistical Area (MSA) and other border counties to the south (see Figure 3).¹⁷ The Chicago area is highly integrated economically and socially across the border as evidenced by commuting patterns and employee tax records. Even though the border counties below the Chicago area are not as well integrated, we can still expect moderate cross-border activity due to the position of three interstate highways and moderately-sized cities near the border, like Danville in Illinois and Indiana cities Terre Haute and Vincennes.

Proving the importance of comparing employment between border regions with different minimum wages is the influential work of economists David Card and Alan B. Krueger who surveyed fast food restaurants through two studies (1994, 2000). They found that raising the state minimum wage actually increases employment relative to neighboring states that do not raise minimum wages, even considering the effects of economic recession and opposition by business leaders. This happened in New Jersey relative to Pennsylvania (eastern region) during the period 1990–1991 when New Jersey raised their minimum wage to \$5.05 above the federal rate of

■ FIGURE 3: Border Counties between Indiana and Illinois In and Below the Chicago Metro



Source: Indiana Business Research Center

\$4.25 at that time. Also proving their point was that the opposite happened in 1996 in Pennsylvania in relation to New Jersey when the federal minimum wage increase had a greater impact on employment growth in Pennsylvania (it was not initially binding in New Jersey).¹⁸

The accommodation and food service (A&FS) industry is key to understanding the impact of

minimum wage changes because it employs a high number of low-wage workers. Over three-quarters of jobs in this industry are in the lowest-paid food preparation and serving related occupational group, which includes fast food workers, short order cooks and counter attendants.¹⁹ Most notably, 25,602 (or 10 percent) of Indiana’s food preparation and service workers received less than

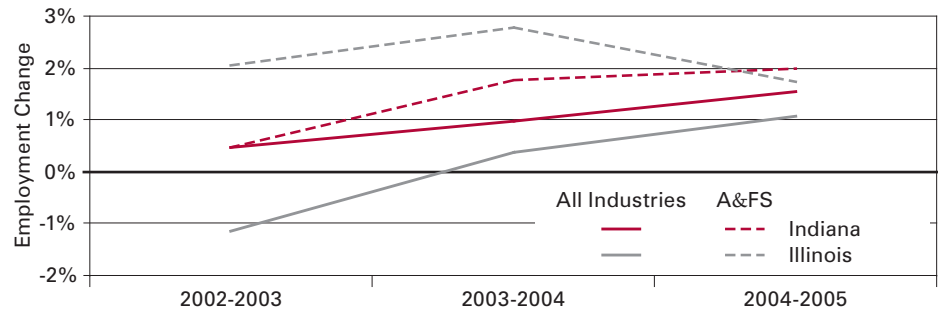
\$11,750 in total wages in 2005,²⁰ corresponding to less than \$5.64 per hour or \$0.86 under Illinois' minimum wage of \$6.50 that year. The fact that Illinois' employment growth in the A&FS sector slowed from 2 percent between 2003–2004 to 1.7 percent between 2004–2005 suggests measurable impacts of minimum wage increases.

Employment Change in the Chicago Metro in Indiana–Illinois Border Counties

Comparing overall employment growth within the Chicago MSA, Figure 4 illustrates that Indiana's counties had higher annual growth during all three time periods but Illinois counties closed the gap considerably during the years it raised its minimum wages. The Indiana side of the border gained 0.5 percent in employment between 2002 and 2003, compared to the high job loss of 1.2 percent on the Illinois side—a difference of 1.6 percentage points (without rounding error). However, Illinois' counties rebounded to a 0.4 percent employment gain between 2003 and 2004 at the same time the state raised its minimum wages by \$0.35 and made an even bigger 1.1 percent gain when it raised its minimum wage a full dollar from \$5.50 to \$6.50. While Indiana's counties still had higher job growth of 1.5 percent, the gap between the two states' counties had narrowed to 0.5 percentage points (without rounding error).

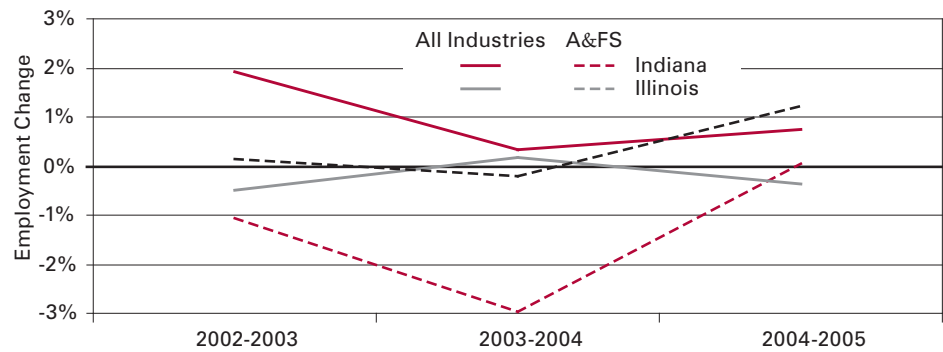
Employment among A&FS employers in the Chicago MSA, however, may have been adversely affected by Illinois' increasing minimum wage. Figure 4 shows that while Illinois' counties had substantially better job growth (over a full percentage higher) in the 2002–2003 and 2003–2004 time periods, Indiana's counties closed the gap and had better job growth during 2004–2005. In this latter time period, these largely low-wage employers

FIGURE 4: Annual Employment Change in All Industries and Accommodation and Food Services for Private Employers in Indiana and Illinois Border Counties within the Chicago Metro, 2003 to 2005



Note: A&FS industry employment data for Indiana's Newton County were suppressed by BLS so are not included in Indiana's A&FS trend line.
Source: IBRC, using data from the Bureau of Labor Statistics, Quarterly Census of Employment and Wages

FIGURE 5: Annual Employment Growth in All Industries and Accommodation and Food Services for Private Employers in Indiana and Illinois Border Counties South of the Chicago Metro, 2003 to 2005



Note: A&FS industry employment data for Indiana's Sullivan and Vermillion counties, as well as Illinois' Edwards and Gallatin counties, were suppressed by BLS so are not included in the A&FS trend lines.
Source: IBRC, using data from the Bureau of Labor Statistics, Quarterly Census of Employment and Wages

in the Indiana border counties achieved almost 2 percent job growth while their Illinois counterparts saw their job growth rate shrink a full percentage point to 1.7 percent. It is also worth mentioning that statewide A&FS employment trends were also similar in this regard.²¹

Employment Change Outside the Chicago Metro in Indiana–Illinois Border Counties

Looking at counties along the border below the Chicago MSA, Figure 5 shows moderate job growth in the Indiana counties and more losses than gains in employment for those in Illinois. However, it is worth noting that, while the large gap between

these two groups of counties' employment growth in the 2002–2003 period narrowed almost entirely in 2003–2004, the gap reopened considerably during the 2004–2005 time period when Indiana's counties experienced 0.7 percent job growth while their Illinois counterparts had job losses of 0.4 percent.

However, the overall job losses for Illinois border counties between 2004–2005 cannot be directly attributed to the increasing minimum wage, since employment in the low-wage A&FS sector actually grew remarkably for Illinois counties over this period. In marked contrast to the tremendous job losses between 2002–2003 and 2003–2004 among A&FS

employers along the Indiana border, those in Illinois generally maintained their job levels, as we see in Figure 5.²² However, coinciding with their state's one dollar hike in minimum wages, A&FS employment within Illinois' border counties increased 1.2 percent while similar sector employment in Indiana held steady between 2004 and 2005.

Decoupling the Minimum Wage-Employment Link

Empirical analysis strongly challenges the conventional wisdom that increasing the minimum wage hampers employment. Although these statistical results focus on states in just one U.S. region over a fairly narrow time period, they strongly suggest that we cannot assume that minimum wage increases will have a negative impact on employment change.

Even employment in the vulnerable border region between Indiana and Illinois and within the low-wage A&FS industry is not decidedly affected by minimum wage increases. Within the urban Chicago region, overall employment growth in Illinois' border counties improved substantially despite the state's increase in minimum wages although the growth rate among these counties' A&FS sector employers was slower relative to those within Indiana in the year of Illinois' biggest minimum wage increase (2004–2005). While employment growth was better among Indiana's border counties south of Chicago, A&FS employment among their Illinois' counterparts performed far better during the 2004–2005 period.

As minimum wages continue to increase both at the state and federal levels across the United States, there is a tremendous need for the debate to move beyond the simple assumption that they will reduce employment. Future empirical studies and political debates need to weigh the potential positive impact

that increasing the minimum wage could have on employment and carefully examine the regions and industries that may be negatively affected. If the overall impact is positive, perhaps special grants and tax transfers could be created to assist targeted employers and workers in vulnerable regions and industries. Proposals to increase the minimum wage continue to be highly popular among Americans concerned about rising economic inequality and deserve to be examined more seriously. ■

Notes

1. The full text of the U.S. Fair Labor Standards Act of 1938 is available at www.osha.gov/pls/epub/wageindex.download?p_file=F15794/FairLaborStandAct.pdf.
2. Official minimum wage information is available at www.dol.gov/compliance/laws/comp-flsa.htm.
3. In the few states that do not set minimum wages or have lower state minimum wages than the federal level, the vast majority of their employees receive the federal minimum wage that covers most types of employment. Minimum wage rates across the 50 states are available on the U.S. Department of Labor website at www.dol.gov/esa/minwage/america.htm.
4. An official timeline of federal minimum wage rates is available at www.dol.gov/esa/minwage/chart.htm.
5. Jon Gertner, "What Is a Living Wage?" *The New York Times*, January 15, 2006. Online at www.nytimes.com/2006/01/15/magazine/15wage.html.
6. Jerod Waltman, "The Politics of the Minimum Wage," Urbana: University of Illinois Press, 2000.
7. *Ibid.*
8. Jarod Bernstein, Elizabeth McNichol, and Karen Lyons, "Pulling Apart: A State-by-State Analysis of Income Trends," Center on Budget and Policy Priorities / Economic Policy Institute, 2006.
9. Craig Garthwaite, "Minimum Wage Hurts Oregon's Vulnerable Workers." vol. 2006, 2003. The Employment Policies Institute is available online at www.epionline.org.
10. Barbara Rose and John Chase, "Illinois Minimum Wage Rises; Debate Continues," *Chicago Tribune*, January 4, 2005.
11. State of Illinois, Office of the Governor. "Blagojevich Proposes Raise in Minimum Wage for Veto Session," October 28, 2006. Online at www.il.gov/PressReleases/ShowPressRelease.cfm?SubjectID=1&RecNum=5466.
12. For the purposes of this article, Midwestern states include Illinois, Indiana, Iowa, Kentucky, Michigan, Missouri, Ohio, and Wisconsin.

13. The small negative coefficient for previous year's real state GDP simply indicates that employment growth is slightly less for states which already had large economies in the prior year, all other conditions equal.
14. The full model has the highest R-squared value and most negative BIC' value indicating that it explains the most variation in employment growth and has the best statistical fit.
15. Tests proved that there was serial correlation within the panel data. Since a Hausman test was inconclusive as to whether a fixed-effects or random effects model was preferable, a fixed-effect model was selected due to the larger number of monthly observations (N = 36) relative to time periods (t = 3) for the eight states.
16. Timothy Egan, "For \$7.93 an Hour, It's Worth a Trip Across a State Line," *The New York Times*, January 11, 2007.
17. Here, the Chicago MSA counties comprise those of the Chicago-Naperville-Joliet MSA defined by the U.S. Office of Management and Budget (OMB) but exclude Kenosha County in Wisconsin. Fountain County, Ind. is included among counties along the border south of the Chicago MSA due to its close proximity and worker commuting patterns across the border.
18. These two studies by David Card and Alan B. Krueger are: a) "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania," *American Economic Review*, 84 (4): 772-93, 1994, and b) "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania: Reply," *American Economic Review*, 90 (5): 1,397-420, 2000.
19. Complete data on occupations in the accommodation and fast food industry is available from the U.S. Bureau of Labor Statistics (BLS) Occupational Employment Survey available at www.bls.gov/oes/current/naics2_72.htm.
20. Allison Leeuw, "The Wage Pyramid: Wage Variance in Indiana," *InContext*, July 2007. Online at www.incontext.indiana.edu/2007/july/1.html.
21. Illinois' statewide employment growth in the A&FS sector slowed from 2 percent between 2003 and 2004 to 1.7 percent between 2004 and 2005 while Indiana A&FS employment growth remained relatively stable around 1.6 percent during these periods.
22. This analysis does not include A&FS employment for four border counties (two each from Indiana and Illinois) whose data were suppressed by the U.S. Bureau of Labor Statistics due to confidentiality restrictions. However, employment in this sector is small within these counties (roughly 8.8 percent within Indiana and 1.8 percent in Illinois) so their omission should not substantially affect the overall trends.