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POLICY WATCH SECTION

Can liberalization of local food marketing channels influence local economies? A case study of West Virginia's craft beer distribution laws

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Abstract

Over the past decade, local food systems have been identified as having a significant influence on regional economies. Using a recent change in West Virginia's craft beer distribution laws as a case study, we show that although employment might not experience a statistically significant change due to additional legalized marketing channels, wages did experience a significant increase. Our findings suggest that state economies might benefit from reducing restrictions on small, local producers.

Keywords: craft beer; economic development; local foods; tourism
JEL Classification Codes: D04, I18, O12

1. Introduction

Because the local food movement has become a recent darling of economic development, many states are now scrambling to find ways to promote growth in the industry. One of the most discussed markets related to local food is craft beer, which places additional pressure on policymakers to write modern beer policies that balance the costs and benefits of alcohol consumption. While beer drinking has been linked to negative consequences for economic development (Cesur and Kelly, 2014), other research has highlighted the potential for positive outcomes associated with the liberalization of alcohol distribution. Higher state beer taxes tend to reduce the incentive for a brewery to open in a state (Elzinga, Tremblay and Tremblay, 2015),

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and restraints on distribution might have a larger impact on craft beer entrepreneurship (Malone and Lusk, 2016). For example, Burgdorf (2015) shows that approximately 58 to 76 percent of the difference in the number of breweries across states can be explained by constraints on self-distribution. In addition to restricting opportunities for craft beer entrepreneurs, constraints on distribution have the potential to increase market prices (Burgdorf, 2016). As such, the larger incumbent breweries and distributors might use political leverage to maintain these current government-imposed barriers to entry (Gohmann, 2016).

Ultimately, what is important for policy is not necessarily changes in the number of producers; rather, policymakers are likely to be more interested in whether these transaction-promoting policies actually increase growth for regional economies. Restrictions on the marketing channels available to local producers are likely to reduce economic activity, which implies that the liberalization of beer distribution might also increase employment and subsequent wages. Consequently, the objective of this letter is to use a recent change in West Virginia legislation as a case study for evaluating how county-level employment might change after the removal of one such barrier to entry. Although little research has been conducted on the effectiveness of these policies in achieving their desired goal, media and policymakers often mention boosts in tourism as a reason for change (Mistich, 2015). We use difference-in-difference models to compare changes in tourism-related employment for West Virginia counties with a brewery to counties without a brewery.

We proceed as follows. In the methods section, we outline the specifics of this law and describe our hypothesis about how it is likely to influence tourism employment in West Virginia. We focus on a change in on-premises sales, or "growler laws," because it represents an example of state policy targeted at the removal of barriers to entry. We then describe our data along with the difference-in-difference method we used to determine the law's effects. Our empirical results follow, which support the theory that tourism wages increased due to the relaxed distribution regulation. Finally, we conclude with commentary about what our findings imply about economic development more generally, as well as suggestions for future research.

2. Methods

As stated in the bill's summary, the purpose of West Virginia SB 273 "…is to clarify licensing and operational requirements for brewers, resident brewers and brewpubs by: (1) permitting licensed brewers and resident brewers to conduct nonintoxicating beer sampling on their brewery premises within the State of West Virginia; (2) permitting a resident brewer to conduct growler sales for off-premises consumption from its brewery premises within the current resident brewer license for no additional expense, as is similarly permitted for distilleries, mini-distilleries, wineries and farm wineries." The bill passed with bipartisan support on April 15, 2015, and went into effect in June 12, 2015. Growth was predicted to be substantial: one estimate cited by the State Legislature suggested that the new laws would boost tourism revenue by $4.7 million (Cardosi, 2015).

To determine the effect of the legislation on tourism wages, we first compare the effect of the interaction between changes in the number of leisure and hospitality wages (in thousands) in counties with and without a brewery before and after the implementation of the law (δ_{DD}). Mathematically, we estimate the following difference-in-difference equation:

$$Employ_i = \delta_0 + \delta_1 \times after + \delta_2 \times brewery + \delta_{DD} \times after \times brewery + \varepsilon_i, \quad (1)$$

where $Employ_i$ is the number of employees hospitality and leisure employees in county i, $after$ is a binary variable for after the law passed in June, 2015, $brewery$ is a binary variable

that identifies if the county has a brewery, ε_i is a normally distributed error term, and all δ_i are parameters to be estimated.

Even if the law did not increase employment, it is possible that tourism wages might still have increased.1 As such, we then compare the interaction between changes in the number of leisure and hospitality employees for counties with and without a brewery before and after the implementation of the law (γ_{DD}). Mathematically:

$$Wage_i = \gamma_0 + \gamma_1 \times after + \gamma_2 \times brewery + \gamma_{DD} \times after \times brewery + v_i, \quad (2)$$

where $Wage_i$ is the number of employees hospitality and leisure employees in county i, v_i is a normally distributed error term, and all γ_i are parameters to be estimated. We also estimate a model that includes hospitality and leisure employment as a control variable2, as well an additional model that controls for annual and seasonal effects. Standard errors are clustered at the county level.

3. Data

If state tourism revenue were to increase by $4.7 million dollars via the promotion of craft brewing, it is safe to expect that tourism-related wages and employment would see an increase within the counties that are home to a brewery. As such, we seek to isolate changes in employment and total wages in the Leisure and Hospitality sector (NAICS 1026). The dependent variables come from the Quarterly Census of Employment and Wages (QCEW), as published by the U.S. Bureau of Labor Statistics, which tracks these changes at the county level. For counties with incomplete data (Clay County, Calhoun County, Monroe County, and Wirt County), missing observations are estimated via linear interpolation. To identify counties with a brewery, we use data made available from the Brewers' Association (2015). According to this data, 13 of the 55 counties in West Virginia are home to at least one brewery. In order to analyze changes before and after the law change, our county-level quarterly data set is from January 2013 to the second quarter of 2016, the most recent available.

4. Results

Table 1 compares the hospitality and leisure employment and wages in West Virginia counties with and without a brewery before and after the implementation of the law. Hospitality and leisure employment in counties with a breweries increased by approximately 30 jobs per county (1.1%), while counties without a brewery experienced a slightly smaller increase of approximately nine jobs per county (0.9%). By contrast, wages in counties without a brewery increased by 5.2% (approx. $187,000) and by 7.1% in counties with a brewery (approx. $778,000). These slight differences in relative growth rates (0.2% for employment and 1.9% in wages) might indicate that the effect size of the policy is likely to be somewhat small in the context of state leisure and hospitality employment.

[1] For example, if increased demand led to more hours worked for part-time employees but there was not enough increase in demand to hire more workers.

[2] Because QCEW employment is estimated monthly, we took a 3-month average to determine quarterly employment so that it would match with the QCEW wage data.

Table 1. Descriptive statistics for hospitality and leisure employment and wages in West Virginia counties with and without a brewery

	No brewery in the county	*Brewery in the county*	*Number of observations*
	Employment		
Before implementation	918.768 (1,316.41)	2,718.85 (2,803.41)	1,595
After implementation	927.633 (1,323.03)	2,748.73 (2,817.37)	715
Number of observations	1,764	546	2,310
	Wages (in the $1,000)		
Before implementation	3,605.31 (5,629.22)	10,997.71 (12,058.13)	550
After implementation	3,792.32 (5,843.09)	11,775.44 (12,780.10)	220
Number of observations	182	588	770

Note: Numbers in parentheses are standard deviations.

Table 2 displays our four model specifications. According to these difference-in-difference estimates, while counties that are home to a brewery tend to have a higher number of hospitality and leisure employees in general, the implementation of the law was not correlated with an increase in the number of jobs. However, the law appears to have generated an increase in hospitality and leisure wages. While West Virginia hospitality and leisure wages increased by $187,020 for each quarter after the law was implemented, counties that were home to a brewery experienced an additional $590,720 increase per quarter.

Table 2. Parameter estimates for the difference-in-difference models of hospitality and leisure employment and wages

Parameter	*Dependent Variables*			
	Employment in Leisure and Hospitality Industries		*Wages in Leisure and Hospitality Industries*	
Intercept	918.77*	3,605.31*	-261.88	-237.49
	(204.74)	(874.42)	(180.62)	(175.72)
Growler Law	8.87	187.02*	165.53*	-62.72
(1 = after implementation)	(10.20)	(72.77)	(52.22)	(69.62)
Brewer	1,800.08*	7,392.40*	-181.82	-180.95
(1 = yes)	(808.98)	(3,466.74)	(844.51)	(847.32)
Growler Law x Brewer	21.02	590.72*	523.27*	523.28*
	(38.83)	(282.59)	(211.11)	(211.66)
Employment			4.20*	4.20*
			(0.23)	(0.23)
Annual trend?	No	No	No	Yes
Seasonal fixed effects?	No	No	No	Yes[4]
R-square	0.16	0.15	0.95	0.95
Number of observations	2,310	770	770	770

Notes: Numbers in parentheses are standard errors clustered at the county level. Asterisk indicates significance at the α=0.05 level. QCEW monthly employment data aggregated into three-month quarterly averages. Estimated relative to the fourth quarter (i.e. October, November, December).

When we control for changes in employment over the same time period, the main effect of having a brewery is no longer statistically significant and the interaction effect shrinks slightly to $523,270 per quarter, but remains statistically and economically significant. Including an annual trend and seasonal fixed effects does not improve model fit, and does not diminish the difference-in-difference estimate. Stated simply, given that 13 West Virginia counties were home to a craft brewery, we can roughly estimate that the implementation of the law was correlated with a $2,286,982 increase in statewide hospitality and leisure wages. While we have not been able to find an estimate of wages as a percentage of revenue for the hospitality industry, if wages are 50% of revenue, then our finding of a $2.286 million increase in hospitality and leisure wages is very close to what was projected from the $4.7 million increase in tourism revenues discussed during passage of the growler bill (Cardosi, 2015)[3].

5. Concluding remarks

The overall objective of this study was to use recent legislation in West Virginia as a case study for discussing the economic benefits of legalizing additional revenue streams for local food entrepreneurs. While previous research suggests additional breweries might open in a state if self-distribution were legalized, this study takes the next logical step by discussing the effects of these policies on a regional economy. These estimates suggest that counties that are home to a brewery did experience a net increase in wages paid to hospitality and leisure employees. As such, our findings suggest that other states might benefit from allowing for on-premises sales and from liberalizing additional local food distribution channels.

While these findings are promising, they only represent a first step in identifying the effectiveness of this law. We did not evaluate any opportunity costs associated with increased spending in hospitality and leisure. Additionally, we did not include any measures of the possible negative fiscal externalities associated with increased alcohol consumption – although there is little evidence that supports the hypothesis that increases in the number of local breweries leads to higher rates of alcoholism or binge drinking. Regardless, our findings support the theory that reductions in regulations on local product marketing channels can positively affect regional economies.

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[3] We are extremely grateful to an insightful referee for this point.