Lausanne 2024 Abstract Submission

Title
Hops and Hurdles: How Self-Distribution Laws Affect Craft Brewery Output

I want to submit an abstract for:
Conference Presentation

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Keywords
Beer, Brewery, Laws, Self-Distribution, Distributors

Research Question
Does allowing breweries to self-distribute increase their production, employment, and number of establishments?

Methods
Model, Differences-in-Differences (TWFE), Staggered Adoption Design (Callaway Sant’anna), and Synthetic Differences-in-Differences

Results
Self-distribution allows for higher brewery output, employment, and number of establishments. Also, the number of distribution establishments declines.

Abstract
From 2008 to 2019, craft beer production quadrupled from 4.4 to 17.4 million barrels. While the industry has experienced explosive growth, the proliferation across states has not been uniform. For example, Montana and Maine averaged between 3 and 4 breweries per 100,000 adults, while Mississippi and Alabama had less than 0.2. While consumer preferences may drive some of this variation (Gohmann 2016), laws themselves also differ across markets (see for example Rojas (2012), Chen (2014), and Bergdorf (2019, 2021). However, no paper to our knowledge has studied the impact of self-distribution laws on brewery outcomes. States that do not allow self-distribution require breweries to sell to a third party wholesaler rather than directly to a retailer. These laws can be
detrimental to small breweries because they force them into costly contracts with distributors who may focus on distributing their more popular and lucrative brands.

To study the impact of these self-distribution laws, we employ a trade model with heterogeneous firms (Melitz and Redding 2014), where breweries pay distributors to “export” their beer to other cities. As in Melitz (2003), distribution costs consist of both fixed costs (in the form of search and contract fees) and variable costs (in the form of markups). We model breweries in cities without legal self-distribution as having to pay a distributor even when they do not export to other cities. The model generates three predictions regarding states with legal self-distribution. First, the number of entrants increases as fixed costs to entry decline. Second, output increases for existing breweries because their prices fall faster than average prices once they do not have to pay for distribution costs. Third, labor allocated to beer production increases as output increases.

To test the model predictions, we collect data on county-level brewery output, establishments, and labor from 2008-2018. Output comes from a panel of firm-level surveys from the Brewer’s Association Production Data that we aggregate to the county level. The number of brewery establishments comes from the Brewer’s Association, the Quarterly Census of Employment and Wages, and the County Business Patterns datasets. Employment comes from the County Business Patterns survey that has been imputed by Eckert et al (2021). Our time frame is constrained by a lack of production data before 2008 and a substantially lower response rate to the 2019 production survey due to covid.

Our empirical strategy exploits the staggered adoption of self-distribution policies across U.S. states from 2008 to 2018. We compare outcomes in counties where self-distribution laws were passed against those where it has not been allowed since prohibition. We begin with a two-way fixed-effects (TWFE) analysis as a baseline; however, recent research has shown that TWFE can produce biased results in the presence of heterogeneous timing and treatment effects. We adjust for these potential biases by employing the staggered adoption design of Callaway Sant’anna (CS). Although aggregate pre-trends are parallel after conditioning on covariates, individual states violate the assumption of parallel trends. To address this violation, we employ a synthetic difference-in-difference design (SDID). In this setting, TWFE and CS produce highly similar results to each other, while SDID is slightly more conservative.

The TWFE and CS results suggest that legalized self-distribution led to an increase in per capita beer output of 29 to 41 percent of the 2016 mean among the control counties, although the results are only marginally statistically significant. SDID predicts that legalization led to an increase in brewery employment per capita of roughly 47 percent while the TWFE and CS results are disregarded due to a violation of the assumption of parallel trends. Lastly, establishments per capita are predicted to increase anywhere from 11 to 21 percent across the three specifications.

Ultimately, the results support the model’s predictions that allowing for self-distribution increases the number of establishments, the production of beer, and the number of employees in the beer industry. The results are of sizable magnitudes, suggesting that such allowances increase the number of jobs and diversity of employment in the states that adopt such policies. The results also suggest other fruitful avenues of future research on brewery regulation, such as those on franchise laws, barrel caps, or license fees.

References

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