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The U.S. Beer Industry: Concentration, Fragmentation, and a Nexus with Wine*

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Abstract

The U.S. Beer industry has undergone two periods of major structural change in the post-World War II period. The first period, 1950–1980, was one of consolidation in which concentration increased dramatically. Since this period, combinations among leading brewers took place that would not have passed antitrust scrutiny earlier. The second period, from 1980 on, is one of fragmentation, marked by the entry of many craft brewers and increased product heterogeneity. The fragmentation has brought about consumption complementarities between wine and beer that never existed before. The wine and beer industry both face distributional inefficiencies sustained by state regulatory provisions that were a consequence of ending prohibition in the United States. Each of these topics is explored in this paper. (JEL Classification: L66, M37)

I. Introduction

You have heard the saying, "a fish out of water." That expression applies to a paper on the U.S. *beer* industry appearing in a journal devoted to the *wine* industry. No doubt some readers of the *Journal of Wine Economics* look upon a glass of beer the way an Aston Martin owner would look upon a Plymouth Neon or a Chevy Vega. But as a matter of taxonomy, wine and beer are sibling industries. Like siblings, there may be disagreements on many topics, but there is no denying a family connection.

In the case of these two industries, each involves an alcoholic beverage; the production function for both is both science and art; each can be enjoyed alone or in groups; none is a commodity product; and each can be addictive. Their

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consumption has few if any network effects. But each beverage has negative externalities in consumption, though not in production. Beer and wine also share the characteristic of having ancient origins and fascinating histories. But having said all that, in the language of antitrust jurisprudence, beer and wine are in separate relevant product markets. Their cross-elasticity of demand is low.[2] The cross-elasticity of supply between beer and wine is even lower.

The beer industry already has made one entrance into the *Journal of Wine Economics* by way of a review (Elzinga, 2009b) of the seminal economic analysis of the U.S. brewing industry by Tremblay and Tremblay (2005). This paper summarizes prior research on the changing structure of the U.S. beer industry (Elzinga, 2009a; Elzinga and Swisher, 2011) and connects this research to the industry that provokes this journal: wine. The initial part of the paper is descriptive and involves two epochs in the economic history of the U.S. beer industry: the years 1950–1980 are the *period of consolidation*; the period from 1980 forward is the *period of fragmentation*. I then discuss meal complementarities between beer and wine and conclude with a discussion of policy concerns affecting the distribution of wine and beer in the United States.

II. Consolidation in the Brewing Industry

Few, if any, American industries have undergone the structural transformation that occurred in brewing during the period framed by the end of World War II and the end of the nineteen-eighties. During these years, the beer industry went from dozens of brewers producing traditional formulations of lager beer to a handful of firms engaged in the mass production of lager beer. Table 1 presents a consistent data source that tracks "traditional" U.S. breweries during the era of consolidation into the era of fragmentation. Traditional breweries include mega-breweries such as Anheuser-Busch and regional brewers such as Yuengling. Essentially, most of these companies produced lager beer centered around one brand. Note the steady decline in the number of traditional breweries and, starting in 1970, the remarkable increase in the number of specialty breweries (or what is now often called the craft segment of the industry).

Table 2 presents a consistent data series that reveals the concentration trend in American brewing, one that continued during the birth and growth of the specialty (or craft) segment. Few U.S. industries (if any) can match the increase in either the five-firm concentration ratio or the Hirschman-Herfindahl Index.

[2] At low price points, the cross-elasticity of demand between beer and wine would be positive and nontrivial. For those who want an inexpensive buzz, cheap wine is price-competitive with cheap beer. It would be interesting to learn the cross-elasticity of demand between popular price beer (like Meister Brau) and low-end fortified wines (like Night Train Express from Gallo).

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Table 1
U.S. Breweries in Operation, 1960–2005

Year	*Traditional Breweries*	*Specialty Breweries*	*Total Breweries*	*Beer Wholesalers**
1960	175	0	175	
1965	126	0	126	
1970	82	1	83	
1975	52	1	53	
1980	40	8	48	5,109
1985	34	37	71	
1990	29	269	298	2,975
1995	29	977	1,006	2,967
2000	24	1,471	1,495	2,357
2005	21	1,346	1,367	

Source: Brewing Industry Research Program, The Office of R.S. Weinberg, 2006;
*Wholesaler count from NBWA.

Table 2
Concentration of Sales by Top Brewers, 1947–2006

Year	*Five Largest*	*HHI*
1947	19.0%	140
1954	24.9%	240
1964	39.0%	440
1974	64.0%	1,080
1984	83.9%	1,898
1994	87.3%	2,641
2004	85.2%	2,924
2006	83.9%	2,785

Source: Based on beer volume. The HHI includes only the top five brewers in that year. Adapted from Horowitz and Horowitz (1967), Modern Brewery (various issues) and Beer Marketer's Insights (various issues).

Because of the trend to higher concentration, the industry's restructuring has been the subject of important antitrust cases involving horizontal mergers. At one time, mergers between then sizable firms like Pabst and Blatz were challenged and prohibited. Not anymore. Recently, significant mergers in the industry have received green lights from the antitrust authorities, most notably the joint venture that combined the number two and number three brewers, Miller and Coors. A few years ago, such a combination would have been inconceivable under American antitrust laws. After Coors and Miller were joined at the hip, the leading brewing company in the U.S., Anheuser-Busch, was acquired by Belgian beer giant InBev. In Elzinga and Swisher (2011), the beer industry serves as a lens to examine the remarkable changes in U.S. merger policy.

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In the first four decades of the post-World War II period, two contrary trends were at work in the beer industry. The number of traditional brewers in the U.S. declined. But the size of the market area served by existing brewers and the volume of beer supplied by these brewers increased. Beer drinkers lost some local and regional sources of supply, but gained access to brands that were shipped into their part of the country. This was the period of consolidation.

In the 1950s and 1960s, there were dozens of independent brewers in the U.S. who were prominent in their region. In an illustration used elsewhere (Elzinga, 2009b), the leading brands of beer in the state of Michigan during the year 1957 were identified as Goebel, Stroh's, Pfeiffer and Drewrys. Today, most beer drinkers in Michigan would not recognize any of these brands. In 1959, Budweiser barely made the top ten among brands sold in the state; Miller was number 13; and Coors had no sales whatsoever. By 1970, Pabst was the leading seller in Michigan; Stroh's was still in second place; but Anheuser-Busch had jumped to ♯3. Miller had not yet made its move up the sales ladder (this was prior to Miller's acquisition by Philip Morris); Carling was number four. Imports were barely on the radar screen in those days (less than 1 percent of sales), notwithstanding Michigan's proximity to Canada. The beer brands that once were stalwarts in Michigan – Goebel, Pfeifer, Stroh's, Drewrys, and Carling – are gone (and the same story could be told over and again in other states from Maine to California).

Through exit and merger, the dozens of independent brewers who once were household names have dwindled to a few. Some observers refer to the core of the beer industry today as essentially a duopoly: comprising Anheuser-Busch (now owned by InBev) and MillerCoors (the joint venture of Miller and Coors). As Table 3 reveals, Anheuser-Busch InBev and MillerCoors generate over 75% of

Table 3
U.S. Beer Industry, Major Brewers

	Shipments (000)		*Market Share*	
	2010	*2009*	*2010*	*2009*
Anheuser-Busch InBev	101,725	104,875	47.9	48.9
MillerCoors	61,485	63,400	28.9	29.5
Crown Imports (Corona)	11,323	10,965	5.3	5.1
Heineken USA	8,400	8,670	4.0	4.0
Pabst	5,675	5,775	2.7	2.7
Diageo (Guiness)	2,660	2,560	1.3	1.2
NAB	2,481	2,322	1.2	1.1
Boston (Samuel Adams)	2,259	2,021	1.1	0.9
Yuengling	2,159	2,025	1.0	0.9
Mark Anthony (Mike's)	1,205	980	0.6	0.5
Other	13,183	11,074	6.2	5.2
Total	212,555	214,667		

Source: The New Brewer, May/June 2011, p. 59.

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U.S. beer industry shipments. The difference in size between the two leading brewers and the next two is notable. The third and fourth ranked firms also are notable in that their product portfolios consist of import brands (primarily Corona and Heineken).

The beer scholar team of Carol and Victor Tremblay (2005) and I (2009a) both have analyzed why the beer industry has gone through this structural transformation. The two main explanations that the Tremblays put forward are: the exploitation of economies of scale; *and* the role that mass advertising has played as the beer industry moved to its current structure. The Tremblays find that both contributed to the industry's structural shakeup. Of the two, I am more confident that economies of scale contributed to the structural shakeup, and less persuaded by the role of mass advertising (Elzinga, 2009a, 141–143).

Eric Felten, who writes on culture and alcoholic beverages, indirectly lends support the Tremblays' thesis about beer and advertising. He recently reviewed the Bud Light, Coors Light, and Miller Lite brands and concluded "No wonder these beers are so heavily advertised. No one would think to drink them otherwise. And even if there are those who actually like the stuff, the different brews are virtually indistinguishable. Nothing begs for vigorous marketing like products that are otherwise undifferentiated" (2010).

My reservations about the influence of mass advertising are anecdotal, but the anecdotes in this industry are revealing. Let me provide three. The Joseph Schlitz Brewing Company was once the largest brewer in the U.S., Schlitz was the leading brand of beer, and more money was spent advertising Schlitz than any brand. Notwithstanding massive advertising outlays, the Schlitz brand went into a tailspin and can scarcely be found on retail shelves today.

As a brand, Coors always has had less media advertising than the Budweiser brand. For example, in the two year period 2009–2010, $232 million was spent on media promotion of Coors Light. In the American beer business, this is a substantial amount but it is dwarfed by the $382 million spent on Bud Light by Anheuser-Busch InBev (*Beer Marketer's Insights*, 2011b). Yet sales of Coors Light have been gaining on its Anheuser-Busch rival and Coors Light sales now approximate those of Budweiser. In 2010, U.S. shipments of Coors Light were an estimated 18.0 million barrels; Budweiser had sales estimated at 18.6 million barrels (*Beer Marketer's Insights*, 2011c).

Currently, the most "interesting" advertising campaign in the beer industry is the Dos Equis commercial based on the "most interesting man in the world." The product behind the brand did not change its packaging, its taste signature, or its price point. But in 2010, sales of Dos Equis increased 22 percent, buoyed by the creativity, more than the media dollars, of Heineken/FEMSA Cerveza (the owner of the brand). Since the campaign began, Dos Equis sales have been on a roll.

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These three examples suggest that something more is going on here in the shaping of consumer demand than aggregate media spending.

III. Fragmentation in the U.S. Brewing Industry

Every sociologist, cultural anthropologist, social psychologist, political analyst, and historian sees "the sixties" as an inflection point for the United States. This is the conventional wisdom about that decade. The U.S. beer industry was not immune from this zeitgeist. It merely lagged a decade. In the 1970's, a new domestic source of supply emerged in the beer industry. This began the period of fragmentation. At about the time the domestic brewing industry was becoming concentrated at the top, hundreds of much smaller craft brewers entered the domestic marketplace. The craft brewing segment is the attention-getter in the beer industry today and has been the avenue for many entrepreneurs to enter the industry. For an economic analysis of this segment, see Tremblay, Tremblay, and Iwasaki (2005) and Tremblay and Tremblay (2011).

The craft beer segment now has its own trade association: the Brewers Association. In the U.S., the establishment of a trade association that lobbies on behalf of a group of sellers is a sign that craft brewing is no longer counter-cultural. The craft beer segment consists of brewpubs (small brewing operations that sell most of their output for on-premise consumption); microbreweries (breweries with sales of 15,000 barrels or less that sell most of their output off-premise); and regional craft brewers (whose sales exceed 15,000 barrels, who often sell in multiple states, and whose operations may be multi-plant). The Brewers Association originally defined a "small" craft brewer as one producing no more than 2 million barrels of beer per year. In 2010, the cap was raised to six million barrels. The craft segment is no longer the province of only the "little guy."

While the craft brewing segment receives a great deal of media attention, Anheuser-Busch InBev and MillerCoors continue to supply the millions of six-packs for Joe six-pack (and, Jill six-pack). As the Tremblays put it, "Anheuser-Busch and Miller spill more beer than the specialty brewers produce" (2005, p. 13). But increasingly, even Anheuser-Busch InBev and MillerCoors offer an array of new brands and line extensions from their flagship brands. Sales growth at MillerCoors currently is in its Tenth and Blake division, which markets specialty and imported brands (such as Blue Moon). No consumer will find the Miller or Coors name cited anywhere on the package label of Blue Moon. This is not an oversight. Anheuser-Busch now offers a Bud Light Golden Wheat. These brands reflect the internal fragmentation of the top two brewers in the United States. The question is: will Anheuser-Busch InBev and MillerCoors be nimble enough to exploit the cost economies associated with 5+ million barrel capacity breweries *and* be able to tap (no pun intended) into the increasing demand for product differentiation spawned by the emergence of the craft brewing segment?

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Fritz Maytag of San Francisco merits the title, "the American pioneer of craft brewing."[3] Heir to the appliance company of that name, Maytag rescued the Steam Beer Company (whose brand was Anchor) and turned it into a model (indeed inspiration) for numerous craft brewers who were to follow in his footsteps. He began selling Anchor Steam beer in 1971. In addition to reviving steam beer, Maytag brewed the first American IPA, "brought back traditional porter, revived the custom of a spiced holiday beer, created the first American barley wine, and brewed the first American wheat beer since Prohibition" (*All About Beer*, 2010b). He also recognized at the outset that his small operation could never match the cost efficiencies of modern, large scale brewing facilities. To cover high per unit production and packaging costs, Maytag knew that his beer would have to sell at retail prices matching expensive import brands. The task was to make beer that would be worth the candle. Maytag's dogged persistence in learning the craft of brewing and his tenacity in persuading retail accounts to stock his product inspired legions of craft brewers who followed.

The most notable of these was Jim Koch of Boston Beer Company who introduced a different business model to the craft segment: the virtual brewery. Koch recognized that existing breweries, many at that time with excess capacity, could brew specialty beers if given the proper recipe and brewmaster attention. Using the equipment at the Pittsburg Brewing Company (main brand: Iron City), the Boston Beer Company soon was selling thousands of barrels of Sam Adams beer at prices well above the Iron City price point. In ten years, Koch's firm was the tenth largest seller of beer in the United States, providing evidence of how low the entry barriers into brewing are if a firm has the right business model.[4] McKenzie River Brewing, which like Anchor Steam Beer also began in San Francisco, was a virtual brewer from the start. McKenzie River sold its two most prominent brands to MillerCoors, who was brewing and packaging the output.[5]

In the 1980s and 1990s, the entry of dozens of craft brewers further increased consumers' choice set of malt beverages. Including microbrewers and brewpubs, the number of firms in the craft brewers segment went from 1 in 1965 to over 1400 in 2005, achieving a critical mass in 1995 by producing over 1 million barrels of beer. Some craft brewers have evolved into large volume producers.

As Table 1 reveals, growth of what Weinberg calls "Specialty Brewers" was not monotonic in the period 1970–2005. There was a decline in numbers during

[3] Second to Maytag would be Jack McAuliffe, who started the first microbrewery as a *de novo* entrant. His New Albion Brewery in Sonoma, CA was constructed without access to the kind of capital equipment and supplies now available to new entrants in the craft segment. For an interview with McAuliffe, see *All About Beer*, 2011a.

[4] The second largest craft brewer, Sierra Nevada Brewing Co., has taken a different supply tack. It now owns sizable brewing capacity of over 600,000 barrels per year. The Boston Beer Company also has integrated upstream and now brews its own output.

[5] The brands were Sparks and Steel Reserve.

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2000–2005, revealing that this segment was not immune to overall economic trends. Some of the initial enthusiasm for the specialty segment also was dampened when owner/brewers realized that viability meant not only brewing beer, but managing the executional side of the business. But since 2005, the specialty segment has expanded.

In 2005, the craft brewing segment was comprised of almost 1000 brewpubs (most of which produce less than 1000 barrels of beer annually), 380 microbreweries, and over 55 regional craft brewers. By 2010, each of these categories had grown: to 1033 brewpubs, 602 microbreweries, and 81 regional craft breweries. One of the most revealing statistics about the viability of craft brewing is the sales growth of these firms throughout the country in a year of economic recession. In 2010, of the top ten craft brewers located in each of six different regions that make up the United States, only four of the sixty did not have a positive growth rate that year. This was a year when the two largest brewers, ABI and MillerCoors, had negative growth rates of three percent (drawn from *The New Brewer*, 2011). The craft brewing segment will truly will have arrived when it has a 10 percent share of industry sales (by volume).

The craft segment held 4.5 percent of the market in 2009 but was over a 10 percent share in some states and over 20 in some metro areas (*Beer Marketer's Insights*, 2010a).[6] In 2010, the craft segment cracked the 5 percent share number (rounded off) for the first time. The top three craft brewers (Boston Beer, Sierra Nevada, and New Belgium) hold an estimated 35.4% of the segment (*Beer Marketer's Insights*, 2011a).

Meanwhile, Anheuser-Busch InBev and MillerCoors struggle to generate growth. In the first quarter of 2010, Anheuser-Busch announced its worst quarterly trend in over 30 years: the company was down −1.8 million barrels, or −6.8 percent. For the prior 12 months, Anheuser-Busch InBev was down an unprecedented 4 million barrels (*Beer Marketer's Insights*, May 2010). What some commentators call "MillCoorWeiser" continue to produce a river of beer; the craft segment is a babbling brook in comparison. But the brook cannot be ignored.

In recent years, U.S. consumers also have chosen imported beers in increasing numbers. In 2005, imports held over 12.5 percent of the U.S. beer market; craft brewers held 3.5 percent. In 2010, imports held 13.3 percent, craft brewers held 4.8 percent. The craft segment remains considerably smaller than the import segment but if present trends continue, the craft segment will approach imports. The current cultural mantra in the United States, "think globally, shop locally," favors the craft segment over both imports and the incumbent national brands of ABI and MillerCoors.

[6] The 2010 Craft Brewers Conference in Chicago was attended by over 3400 participants, including brewers from 27 countries. The craft beer movement is being copied in other countries such as Australia, Japan, Italy and the United Kingdom.

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IV. Food Complementarities of Beer and Wine

There is a saying that three variables explain the success or failure of a retail store. The first is location. The second also is location. And so is the third. Location also plays a major role in determining whether beer or wine is the more successful potable among consumers of alcoholic beverages. The role of location no doubt can be overdrawn. Whether one is a consumer of beer or wine no doubt is a function of the usual economic determinants of price, tastes, and income. But the difference in location (i.e., climate), and the consequences for grain production versus grape production, cannot be ignored. If the climate in parts of Europe had been different, more wine drinkers would be beer drinkers, and more beer drinkers would be wine drinkers.

Colen and Swinnen (2010) have explored in depth the effect of climate and other variables that explain what parts of the world are "beer drinking nations" and what parts are "wine drinking nations." They also develop a theory as to how and why nations *change* their demand for alcoholic beverages. In what follows, I focus only on the United States, only on beer and wine, and explain how the period of fragmentation in the U.S. beer industry (described earlier) has brought about an economic nexus with the wine industry. Unlike other observers, my attention is not given over to climate or geography. My focus is on meal time.

Wine has long been recognized as a complement to food for serious diners. Fine restaurants commend a particular wine to accompany a particular menu item. For many years, the wine consumer has had periodicals like *The Wine Spectator* and *Food & Wine* and *Wine Enthusiast* to inform the proper pairing of food with wine. To guide patrons in choosing the optimal wine with a particular meal, fine restaurants employ sommeliers as in-house experts on food-wine complementarity.

During the period of consolidation in the U.S. beer industry, only a few discerning beer drinkers took thought of matching a particular beer with a particular food. It would be a rare restaurant during that time frame if the waiter or waitress were to say, "the fish tonight goes very well with Bud Light" or "the OssoBuco goes well with Miller High Life." Beer drinkers who cared about complementarity with food usually consumed imported beer. Before the existence of the craft brewing segment, one rarely encountered articles that would commend a type or brand of beer to accompany a particular dinner entrée. This is no longer the case.

In 1977, Michael Jackson's book, *The World Guide to Beer*, appeared. Jackson wrote about beer consumption the way authors for years had written about wine consumption. Michael Jackson did for beer what Frank Schoonmaker did for wine.[7] Today, there is a cottage industry of those who write on beer tastes and there

[7] Also influential is Michael Jackson's television series, *The Beer Hunter*.

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is a cottage industry of putting on beer festivals. If all beer tasted like MillCoorWeiser, it would make little sense to have a beer festival, or to match particular brands of beer with particular foods. Many brewers in the craft sector no longer see their future growth in getting regular beer drinkers to "trade up." Rather, they look with expectation at converting the wine consumer to the beer consumer. This takes beer consumption out of the bar and into the restaurant.[8]

The new book, *Tasting Beer*, by Randy Mosher (2009) is a fruitful venue to describe the new competitive interface between beer and wine. With beer, the general principle is match delicate dishes with delicate beers; strongly flavored foods with assertive beers. For example, Mosher would pair a stout with smoked salmon, a pale ale with a grilled burger; bratwurst with a lager.

What is remarkable, and new to the beer industry, is the contention among beer writers that malt beverages can fill voids in the palette that are left unfulfilled by wine. For example, Mosher claims that wine has blind spots with regard to soup, mushrooms, cheese, and spicy foods that beer organoleptically fills. Beer purportedly works with desserts in a fashion that trumps wine: very sweet desserts match up with beers of robust hoppy bitterness. Mosher (2009, 123) argues that "chocolate loves a dark beer," such as a dark ale. The iconic beer ad has a bunch of guys and gals enjoying beer at the beach or a sporting event. But Pilsner Urquell now runs ads with a recipe for "Czech Peppered Duck Breast Salad." A Svyturys' ad is connected not to babes on a beach but rather food.

For readers of this journal who were raised on the eloquent and toney wine-tasting appraisals of authors like Robert Parker and Frank Prial, compare the words of Jeff Evans with regard to beer. Here is how he describes Fox Brewery's Drop of Real Norfolk: "Tart, fruity hops, with bitter orange and grapefruit flavors, fill the aroma, and sharp grapefruit then continues into the taste, which is mostly bitter and slightly perfumed, with background sweetness from silky pale malt. Sharp citrus hops feature in the drying finish, with bitterness building."[9]

Is there a general principle about beer and food that compares with the "red wine goes with meat" principle upon which novice wine drinkers rely? Writers about beer do not think so, though Mosher offers one general protocol: when in doubt select a Belgian beer (2009, 121). Michael Broadbent has been touted as "the most experienced taster alive" when it comes to wine. What beer writers are trying to accomplish is what Michael Broadbent (and others) have done for wine: to teach consumers that "tasting is not the same as drinking" (Anderson, 2010, 31).

[8] For a history of beer with food see Skilnik (2007).

[9] As quoted in the book review by R. Protzin *All About Beer* (2010a) of J. Evans' *Good Bottled Beer Guide* (2009).

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Another area of competitive similarity between beer (especially the craft segment) and wine is destination rivalry. While many tourists have visited the large breweries of Anheuser-Busch, Miller, and Coors, these visits are essentially plant tours, with an on-premise sample for adults at the end of the tour. Visitors usually do not show up to buy. But craft brewers who make their facility open to visitors have taken as their model, the winery, not the mega-brewery. Craft brewers recognize that visitors to their facilities are not there to be impressed by the speed of the packaging lines, but rather to learn about the brewer's product line and potentially to purchase for off-premise consumption. Beer festivals are now viewed by cities as positive tourist events that bring economic benefits to the community (*All About Beer*, 2011b). Brewery tours, festivals, beer weeks, charity pub crawls, and beer tourism supply craft brewers with prospective customers who are willing to pay for a tasting experience.

V. Current Distribution Controversies: Beer and Wine

The Twenty-first Amendment to the U.S. Constitution ended prohibition in the United States but delegated to individual states the authority to regulate the distribution of alcoholic beverages (there is no federal regulatory template). State regulations can include such variables as alcohol content, container size, promotional material, the licensing (or state ownership) of retail outlets, and many other distribution rules and requirements. Ostensibly to promote temperance after prohibition had ended, in most states brewers were required to distribute their product through independent distributors who then sold to independent (or state owned) retailers. State regulations also can affect the ability of a brewer to terminate a distributor or the ability of a brewer to influence the sale to a given distributor. Brewer to distributor to retailer is called the three-tier distribution system.

In the U.S. distribution of beer, challenges to the three-tier system have been bimodal: coming from the tiniest of brewers (the brewpub, with its emphasis on on-premise sales) and the largest of retailers (large chain operations, with their emphasis on off-premise sales).

When craft brewers entered the industry as brewpubs, in some states they faced the regulatory prohibition against vertical integration. Small as the establishment might be, a brewpub combines production, distribution, and sales to consumers usually under one roof. Many brewpubs had to navigate this restriction because their business model ran afoul of the "three tier" system that was the model for most state regulatory regimes.

Large retailers (notably Costco) have battled the regulatory authorities and the beer wholesalers because they seek to "buy direct" from the brewer and thereby "eliminate the middleman." Direct sales also are a direct challenge to the three-tier distribution system for the brewing industry and are fought by beer wholesalers.

The most contentious distribution issue facing the wine industry is the freedom to engage in Internet sales. The dispute in wine is similar to the dispute in brewing in that

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Internet sales also reduce the economic influence of the independent wine distributor. Independent wine distributors can restrain their enthusiasm for Internet sales that "eliminate the middleman." Also opposed to Internet sales are temperance advocates who have expressed concern about consumption by underage recipients of home-delivered wine. It is not clear how much of the putative concern about underage consumption via the Internet is promoted by the wine wholesalers' lobby.

Beer distributors support state regulations that mandate a three tier distribution system: brewer to wholesaler to retailer. Many large retailers, however, would welcome a change in this regulatory regime. For large retailers, there may be economies from shipping direct from brewer to retailer, cutting out the middleman. Most brewers lend their support to the three-tier system though their interests may be only partially aligned with their distributors. Exploiting potential economies of direct sales could be beneficial to brewers as well as retailers. On the other hand, beer distributors generally provide services that go beyond the logistics of moving beer to the retail shelf. Beer distributors can broker relations between the brewer and the retailer and the delivery of beer often is associated with shelf placement and rotation of product that are of value to retailers.

Beer distributors are accustomed to taking possession of their product physically, which protects their ability to capture the mark-up. Internet sales would eliminate or reduce the mark-up. The National Beer Wholesalers Association therefore warns about the danger of underage consumers getting access to alcoholic beverages by direct delivery channels (as though the traditional three tier system has provided a bulwark against underage consumption).

In the United States, the legislative focal point of this issue is H.R. 5034, a bill with the acronym CARE, which, if passed, would give wholesale distributors the ability to use state laws to stymie direct sales of alcoholic beverages. H.R. 5034 is offered as a temperance measure, purportedly rooted in the principle of states rights. But it is, as well, a protectionist measure largely supported by the National Beer Wholesalers Association and the Wine and Spirits Wholesalers of America. Economists schooled in the theory public choice "see through" these organizations' purported zeal to keep minors from gaining unfettered access to beer and wine.[10]

There is a clearer divergence between wine producers and wine distributors. Wine distributors are more aligned with beer distributors in opposing direct sales. For wineries, more so than breweries, there is greater untapped potential for Internet sales. But the Internet channel will reduce wine sales that would otherwise have gone through a wine wholesaler. For a thoughtful analysis of wine distribution and its regulation see Beliveau and Rouse (2010) and on the political economy of alcoholic beverage distribution generally, see Whitman (2003).

[10] To learn about regulatory restraints to the distribution of wine, see freethegrapes.org.

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VI. Conclusion

It is unclear whether beer or distilled spirits have a place in the Bible.[11] But wine certainly does.[12] The first miracle in the Bible attributed to Jesus took place in the village of Cana, in Galilee, where Jesus turned water into wine. For anyone involved in the production or consumption of wine, the account of this event is astonishing. The wine was *not* the consequence of a market transaction. It was more like a command economy in that Jesus' mother *told him* to make the wine. The production function that Jesus used (some urns, well water and maybe ten minutes of time) meant there was no need for grapes: planting them, pruning them, harvesting them, fermenting them, and aging the product.

The quality of the output at the wedding in Cana also merits attention. The wine was produced on the spot. Yet the Bible indirectly confirms that the wine Jesus made was excellent. The guests express surprise at a host so gracious as to not serve cheap wine when they might be tipsy enough not to notice. But as the Bible reports, the wedding guests believed the host had "kept the good wine until now."[13] If the wine Jesus made was not actually of high quality, the guests' reaction to it would violate the Law of Diminishing Utility.

There is no mention anywhere in the Bible of Jesus turning water into beer. This alone gives the wine industry an imprimatur among beverages that the beer industry will never have. Nonetheless, many craft brewers seek to turn wine into beer, or more accurately, turn wine consumers into beer consumers. Thus far, their aggregate numbers are small. But with the advent of the craft beer segment in the United States, beer is no longer just for "Joe six-pack." Beer has joined wine as a beverage for connoisseurs. Some domestic brewers today vie for the patronage of wine drinkers, as well as for the patronage of those who normally consume imported malt beverages. This may be the best reason that the malt beverage industry merits coverage in the *Journal of Wine Economics*.[14]

[11] Wine is often distinguished from "strong drink," hinting that "strong drink" is not another phrase for wine, but rather a different alcoholic beverage. In the book of 1 Samuel, Eli thinks Hannah is drunk because she is praying aloud with desperation, but she responds to him "No, my lord, I am a woman of a sorrowful spirit: I have drunk neither wine nor strong drink, but have poured out my soul before the LORD" (1:15). For other examples of this distinction, see Leviticus 10:9, Deuteronomy 29:6, Proverbs 20:1, and Luke 1:15. And though the word "beer" is not used in the Bible, it is likely that beer was developed by this time in history, as it seems to have had cultural prominence in Egypt – the place where the Hebrew people were enslaved, and later led out of bondage by Moses.

[12] By the word count in Strong's *Concordance*, the word "wine" and its variations are found over 240 times in the Bible.

[13] John 2:10, King James Version.

[14] It is unlikely that the beer industry will ever match the wine industry in attracting the attention of economists. Wine is not only a consumption good, it also is an investment good and this latter characteristic makes wine more engaging for economic analysis. In addition, beer from a particular brewery does not have "vintage years" the way wine does, giving wine a price-quality property that malt beverages do not have. See Storchmann (2011).

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