MERCATUS CENTER
GEORGE MASON UNIVERSITY

Working Paper 68

Legislative Action and Market Responses: Results of Virginia's Natural Experiment with Direct Wine Shipment

ALAN E. WISEMAN AND JERRY ELLIG*

Abstract

We investigate the impact of the commerce clause of the U.S. Constitution on market competition by focusing on recent changes in state laws governing interstate direct shipment of alcohol. In 2003, Virginia legalized direct wine shipping to consumers from out-of-state sellers. By 2004, the average price difference between online sellers and bricks-and-mortar stores in Northern Virginia was approximately 26-40 percent lower than in 2002. These findings are consistent with the hypothesis that removal of the interstate shipping ban increased competition in the bricks and mortar world, contributing to lower prices. More broadly, they illustrate how the elimination of interstate trade barriers, consistent with the intent of the commerce clause, facilitates efficient markets. Our findings serve as a guidepost to policymakers in various states who need to make their laws conform to the Supreme Court's 2005 ruling striking down discriminatory direct shipment bans. (JEL classifications: 6120, 6333, L110, LO330, L220, L510, L810, L860)

* An earlier version of this paper was presented at the 2005 Meetings of the Southern Economic Association. The authors thank Larry Baum, Thomas Borcherding, Greg Caldeira, Michael Munger, Paul Pautler, David Primo, Kira Sanbonmatsu, Fiona Scott-Morton, Peter Shane, Craig Volden, Clifford Winston, Jack Wright and participants at the Ohio State University Economics Department micro-lunch seminar for helpful comments on earlier drafts of this manuscript. Roman Ivanchenko, Kathryn Kelly, Marco Malimban, Johnny Shoaf, James N. Taylor, and Young Eun Yoo provided capable and valuable research assistance. Please send any comments Alan E. Wiseman (corresponding author): Department of Political Science, The Ohio State University, 2140 Derby Hall, 154 N. Oval Mall, Columbus, OH 43210-1373; wiseman.69@osu.edu.

Introduction

The commerce clause of the U.S. Constitution (Article I, Section 8) is considered to be a primary contributor towards the development America's unified national economy.[1] While scholars have consistently accepted the characterization of the commerce clause as "one of the Constitution's central pillars in the protection of markets" (Weingast 1995, 8), there has been little scholarship that systematically analyzes the contemporary political and market effects of its existence. To the extent that scholars (e.g., Carrubba and Rogers 2003, 545-547) point to clear evidence of the impacts of the commerce clause, they typically identify the distant historical characteristics of interstate commerce in the absence of the commerce clause (i.e., under the Articles of Confederation).

This lack of attention to the empirical effects of the commerce clause is unsurprising. After all, the constitutional requirement that restricts states from enacting interstate trade barriers has been in existence since constitutional ratification and ostensibly pertains to virtually all commodities. One exception to this rule, however, is alcohol. Due to its unique status under the 21st Amendment, alcohol historically has been viewed as being outside of the scope of the commerce clause. Recent litigation and legislation, however, has effectively redefined the scope of the commerce clause vis-à-vis alcohol and state regulatory power. Hence, we now have a novel opportunity to investigate the effects of variations in state regulatory frameworks, and in doing so, to understand the political and market impacts of the commerce clause.

We address these topics by considering the recent debate over interstate direct-to-consumer wine shipment. Similar to earlier debates over prohibition, the "wine wars" of recent years have featured extensive political activity by a myriad of interests with various competing and complementary economic and social goals. Furthermore, recent changes in some state laws create a "natural experiment" that facilitates a relatively clean identification of the effects of direct shipment bans on alcohol markets. By analyzing how the market reacts when states remove their interstate trade barriers, we can provide some insight on how this market would function if it were generally covered by the commerce clause; and we can also glean some broader lessons about the politics and economics of regulation.

Our work also stands as a novel contribution to the scholarship on alcohol policy. The regulation of alcohol is one policy area for which politics and economics are intimately connected. No other commodity has been the focus of not one, but two, constitutional amendments that have been ratified in the past 100 years with the intention of regulating its role in the American economy and society. The passage of the 18th and 21st Amendments, as well as numerous alcohol-related laws and regulations, have been consistently marked by intense political maneuverings by various interest groups, that pursued their goals through legislative and regulatory means. That said, even when these interests have succeeded in having various laws promulgated, it is questionable whether such laws actually accomplished their aims.

[1] The scholarly work on the development and plausible impacts of the commerce clause is voluminous. For a seminal legal perspective, see Chemerinsky (1997, chs. 3, 5).

History demonstrates that the economic and social consequences of alcohol regulations are notoriously difficult to predict accurately. For example, contrary to the intentions of temperance advocates, recent research contends that the 18th amendment was not overwhelmingly successful at reducing general alcohol consumption, as indicators such as cirrhosis of the liver (Dills and Miron 2004; Miron and Zwiebel 1991) and rates of drunkenness arrests (Dills, Jacobson, and Miron forthcoming) did not consistently decrease in the advent of prohibition.[2] Even more ironic, (Pinney 1989, 437-438) is that prohibition actually led to a substantial increase in the planting of vineyards in California to respond to the increased demand for juice for home fermentation.

While existing studies have demonstrated how various interests such as wholesalers and distributors have influenced direct wine shipment policy (Britton, Ford, and Gay 2001; Reikof and Sykuta 2005), they do not empirically demonstrate whether these efforts had any substantial consequences on state wine markets. We fill this gap by examining the actual effects of legalizing direct wine shipment to Virginia consumers from out-of-state sellers. Prior to 2003, Virginia prohibited out-of-state direct shipment of alcohol to Virginia consumers. In July 2003 Virginia changed its law to permit direct shipment of wine from out-of-state sellers that register with the state and remit sales and excise taxes. By comparing online and bricks-and-mortar price and variety data that were collected in the summers of 2002 and 2004, one year before and after the statutory repeal of the ban, respectively, we can assess the impact of changes in the direct shipment law.

Our findings indicate that, while average bricks-and-mortar prices still exceeded average online prices in 2004, the size of the price difference decreased by nearly 40 percent compared to 2002, when direct shipment was illegal. These findings are consistent with the hypothesis that removal of the ban increased competition and benefited consumers. More broadly, these findings are consistent with economic theories that predict how restrictions on market competition can inflate price beyond what the market would otherwise attain, and they also point to the broader potential for the Internet to enhance the efficiency of markets. In addition, these findings also offer empirical support to the claim that the commerce clause, by reducing interstate trade barriers, enhances the efficiency of markets.

Finally, our research has practical value for policymakers. In light of the Supreme Court's recent ruling in *Heald v. Engler* (2005) that the 21st Amendment does not condone the discriminatory treatment of intra-and interstate direct shipment of alcohol, several states now find themselves in the position of having to reevaluate their laws. Our results suggest that "leveling the playing field" by banning all direct shipment would lead prices in bricks-and-mortar stores to be higher than they would be if direct shipment were legal.

[2] The gap between anticipated and realized policy consequences of alcohol laws is not confined to the U.S. As Slade (1998) notes, contrary to the intentions of the United Kingdom's Monopolies and Mergers Commission (MMC) in 1989, requiring brewers to divest themselves of interests in pubs corresponded to a subsequent increase, not decrease, in retail alcohol prices.

I. History and Background

Questions surrounding states' rights in alcohol policy have been widely debated for more than one hundred years.[3] In 1913, the U.S. Congress passed the Webb-Kenyon Act, which made it a federal offense to ship any alcoholic beverage from one state to another, if it was in violation of either state's laws. The 18th amendment, ratified in 1919, temporarily rendered questions over states' rights in alcohol policy moot, by ushering in prohibition. With the repeal of prohibition in 1933, however, Section 2 of the 21st Amendment set the stage for a contentious political debate by effectively granting the earlier Webb-Kenyon Act constitutional standing by barring the "transportation or importation into any State… of intoxicating liquors, in violation of the laws thereof." Hence, Section 2 potentially gives states a great deal of latitude to interfere with interstate commerce in alcohol.

Following the ratification of the 21st Amendment, Congress passed the Federal Alcohol Act (FAA) in 1935, to manage alcohol policy following prohibition. In an attempt to ensure that the social problems that accompanied alcohol in the pre-prohibition era did not re-emerge, the FAA established explicit legal barriers between the production and retail side of the alcohol industry, such as the banning of "tied" houses.[4] Such measures would presumably reduce the market and political power of brewers and distillers, which had arguably contributed to alcohol abuse and political corruption in the pre-prohibition era (O'Neil 1940, 571-572).

While the FAA and complementary state laws established barriers between alcohol production and sales, the ratification of the 21st Amendment led to wildly diverse regulatory standards for alcohol distribution across states. Contrary to the arguments of temperance advocates, these laws were likely passed because of economic and distributive, rather than social, considerations. By 1940, forty-three states had some form of alcohol trade barriers, and contemporary scholarship (Green 1940, 718) likened the situation to trade among the states under the Articles of Confederation. Twenty-one states required out-of-state producers to obtain a license, some of where were extremely costly, to sell to an in-state wholesaler or state monopoly. Eight states had excise tax differentials between in-state and out-of-state products, and thirteen states charged different licensing fees based on whether the wine was made from in-state fruit. Besides raising state revenues, these discriminatory regulations obviously insulated in-state industries from out-of-state competition.[5] While such laws seemed to be a blatant violation of the commerce clause, the Supreme Court consistently refused to hear cases on these matters due to the prevailing

[3] For more detailed discussions of the history of direct shipment and alcohol distribution, see Anderson (2005), Riekhof and Sykuta (2005), Whitman (2003), and Wiseman and Ellig (2004).

[4] A "tied" house is a retail establishment that is either owned directly by a producer (e.g., brewer), or one that has an arrangement with a producer to sell that producer's products, exclusively.

[5] Between 1937 and 1938, Green (1940, 725) argues that these interstate trade barriers led to a 3 million gallon net decrease of California wine consumed, and a corresponding 2.7 million gallon increase in the consumption of other states' wine.

interpretation of Section 2 of the 21st Amendment, which afforded great latitude to states (Lukacs 2000, 256-258). [6]

Variations in trade barriers aside, one common thread that emerged across states was the establishment of the "three tier" system under which all alcohol sold in a state came from a producer (tier one) to a distributor (tier two) and finally to a retailer (tier three). Vertical integration between the tiers was generally prohibited, meaning that it was often illegal for wineries or retailers to ship wine directly to consumers. Many states, however, made exceptions for in-state wineries, allowing them to sell directly to consumers at the winery or via home delivery.

By the 1980s, almost every state in the U.S. had adopted some variant of the three-tier distribution system. With the exception of Alaska, California, and Rhode Island, interstate direct shipments of wine to consumers were generally illegal. In 1986, however, the state legislature of California enacted legislation that led to the emergence of "reciprocity" agreements between states, whereby states would recognize two-way direct shipping rights between each other. As of 2004, 13 states allowed relatively unrestricted direct shipment of wine through such reciprocity agreements. At the same time, 13 other states and the District of Columbia allowed limited quantities of wine to be imported without going through the three-tier distribution system, and 24 states completely banned interstate direct shipment.

Of those 24 states that banned interstate direct shipment, a handful passed laws that became the focus of legal challenges in the early 2000s. Claiming that Section 2 of the 21st Amendment gave them complete autonomy over alcohol within their borders, these states allowed in-state wineries (and sometimes retailers) to ship directly to in-state consumers, while prohibiting out-of-state sellers from engaging in similar activities. Proponents of these laws argued that they were necessary and appropriate, given that in-state wine sellers were easier to monitor for taxation and other law-compliance purposes. Unsurprisingly, shipping ban opponent argued that they were a clear violation of the commerce clause.

These competing views met in court with mixed results. In 2002 and 2003, federal courts found that such laws in Michigan, Texas, North Carolina, and Virginia were unconstitutional violations of the commerce clause.[7] In contrast, the 2nd circuit decided in 2003 to uphold New York's discriminatory direct shipment ban.[8] Texas, North Carolina, and Virginia subsequently legalized interstate direct shipping to comply with the federal court decisions. Michigan, on the other hand, petitioned the Supreme Court for certiori, as did the plaintiffs in the New York case.

[6] Fellman (1948, 162-163) notes that the Court is "firmly committed" to the principle that states' rights to regulate the distribution of liquor into their borders "is not limited by the commerce clause", which effectively endows the states with the right to develop a wide range of alcohol regulations that will not be challenged by the Court.

[7] See *Heald v. Engler*, No. 00-CV-71438-DT (E.D. Mich. Sept. 28, 2001); *Dickerson v. Bailey*, 336 F.3d 388 (5th Cir. 2003); *Beskind v. Easley*, 325 F.3d 506 (4th Cir. 2003), *Bolick v. Danielson*, 330 F.3d 274 (4th Cir. 2003).

[8] *Swedenburg v. Kelly*, 358 F.3d 223 (2nd Cir. 2003).

These contradictory federal circuit decisions were resolved in May 2005, when the U.S. Supreme Court ruled in a 5-4 vote that such discriminatory laws were, indeed, an unconstitutional violation of the commerce clause. In its decision, the Court stated that "Section 2 [of the 21st Amendment] does not allow States to regulate direct shipment of wine on terms that discriminate in favor of in-state producers" (544 US 12 2005).[9] The decision placed the onus on those states with discriminatory laws to re-evaluate them and decide how best to synchronize their practices across in-state and out-of-state sellers.

II. Anticipating the Consequences of Repealing Direct Shipment Bans

What are the likely effects of states repealing existing direct shipment bans? Consideration of the interest group environment and economic theory provides us with some insight on this question.

Over the past several years, lawsuits challenging interstate direct shipping bans have been filed by various parties, including out-of-state wineries, consumers, and wine journalists.[10] Amicus briefs supporting these plaintiffs came from parties who would presumably benefit from the expanded market that would accompany legalized direct shipment, such as wineries, winery and vineyard trade associations, the Cargo Airline Association, and a variety of firms interested in promoting electronic commerce. Responding to constituency concerns, the congressional wine caucus and attorneys general of five reciprocity states, including California, likewise supported the plaintiffs with amicus briefs. The primary argument in favor of removing the bans is that repeal will contribute to a more competitive wine market, enhancing selection and reducing retail prices for consumers.[11]

The primary defendants in these cases have been state governments, but parties who stood to incur losses if direct shipment bans were overturned intervened as additional defendants. These parties were primarily wholesalers, such as the Michigan Beer and Wine Wholesalers Association, and several New York wholesalers, as well as parties that have financial ties to wholesalers, such as the (New York) Local 2D of the Allied Food and Commercial Workers Union, and the (New York) Metropolitan Package Store Association. Amicus briefs supporting their cause came from the (national) Wine and Spirits Wholesalers Association, the Beer Institute, the National Beer Wholesalers Association, state alcoholic beverage regulators, and 31 state attorneys general. Proponents of existing bans have consistently argued that they do not inhibit competition or inflate retail prices, and that they should be maintained to facilitate tax collection and limit the potential for underage drinking or alcohol abuse.

Reminiscent of earlier debates over prohibition, the composition of the coalition that emerged to defend the direct shipping ban is consistent with Yandle's (1983, 1999) theory of "Bootleggers and Baptists," which describes how coalitions of public-interest advocates

[9] Unlike Michigan, New York allowed out-of-state wineries to ship to New York consumers if they opened an in-state branch office and warehouse, but this policy was still considered discriminatory because it forced out-of-state firms to bear additional costs in comparison to in-state firms.

[10] Wine journalists have contended that the existing bans hampered their ability to make a living.

[11] A complete list of briefs, together with links to text, can be found at http://www.wswa.org/public/legal/supremecourt.html.

and private industry support social regulation that curbs competition.[12] Consistent with Yandle's theory, various public health advocates intervened in the cases on the side of the wholesalers because they explicitly endorsed higher prices to curb alcohol consumption.[13] A broader "public interest" coalition that included the National Association of Evangelicals, Phyllis Schlafly's Eagle Forum, Gary Bauer's American Values, and Concerned Women for America (a conservative Christian women's group) also emerged in an amicus brief headlined by the Michigan Association of Secondary School Principals (2004) on the side of the wholesalers.[14] These groups contended that direct shipment made it impossible for states to enforce the minimum drinking age.[15]

With respect to private interests, Yandle's formulation of the Bootlegger-Baptist theory is consistent with broader "rent-seeking" theories of regulation (Stigler 1971, Posner 1974) in that it assumes that the private interests favoring regulation do so because they benefit from the resulting constraints on competition. Whether direct shipment bans actually protect wholesalers from competition, however, is an open question. If direct shipment is a small, niche market phenomenon that has little or no effect on the wholesalers' sales or profits, wholesaler support for the bans may legitimately be part of a public relations campaign to promote "responsible" access to, and consumption of, alcohol.[16] That said, certain structural features of alcohol distribution networks might lead us to believe that wholesalers have significant economic incentives to support barriers to direct shipment, and that the legalization of direct shipment could reduce retail prices.

To illustrate this point, consider Virginia's three-tier system. Virginia's laws establish wineries, wholesalers, and retailers as separate entities, and require any bottle of wine sold in a retail store to be handled by a wholesaler before it reaches the retailer.[17] If the wine

[12] The alignment of "public-interest" advocates and private industry over the direct shipping question is not unique to recent litigation. Britton, Ford, and Gay (2001) have demonstrated that states with the most restrictive direct wine shipping laws were also the states with the highest percentages of conservative Protestants. While Reikhof and Sykuta (2005) do not control for religious affiliations due to data limitations, Johnson and Meier (1990) do find that concentrations of religious affiliations have significant influences on state alcohol policies in interesting ways.

[13] An amicus brief submitted by the Illinois Alcohol and Drug Dependence Association (2004: 4), for example, charged, "The parties opposing direct shipping laws make no attempt to hide the fact that they seek to promote and protect their ability to make liquor as widely and cheaply available as possible." Internet alcohol sales would "make a high tax/lower consumption strategy for liquor control virtually a dead letter," according to the brief (15).

[14] The principal "public interest" amicus briefs supporting the plaintiffs came from an assortment of free market think tanks, along with one signed by several Nobel Laureates and other prominent economists that was sponsored by the Henry Wine Group.

[15] Their activities arguably influenced the White House's perspective on these matters, as evangelicals were credited (or blamed) for the Bush administration's silence on these cases (Milbank 2004: A04).

[16] Such moves can be viewed as part of a political compromise with groups that seek to make alcohol less available for moral or social reasons. For wholesalers, a direct shipment ban may simply be a costless means of letting erstwhile opponents enjoy a victory. See, for example, the Wine and Spirits Wholesalers' Point-Click-Drink campaign at www.pointclickdrink.com.

[17] The law contains strong statements indicating that vertical dis-integration is in the public interest, and it extensively regulates the types of services and promotional items that wineries and wholesalers can furnish to retailers.

comes from outside the state, it must pass through an importer, and only Virginia wholesalers can hold an importer's license (VA Code Sec. 4.1-207).

In addition to requiring all out-of-state wineries to utilize a Virginia wholesaler, Virginia imposes a number of requirements that limit wineries' freedom to contract or to switch wholesalers. While Virginia law bans exclusive territories, it requires the winery to designate a "primary area of responsibility" for each wholesaler, and the winery can have only one distributor in each territory for a single brand (VA Code Sec. 4.1-404). Hence, Virginia's law may have the same effect as exclusive territories if wholesalers refrain from selling to retailers outside of their primary area of responsibility, leading to inflated retail prices (Jordan and Jaffee 1987, Culbertson and Bradford 1991, Sass and Saurman 1996).

Wholesaler market power creates an obvious conflict of interests between the wholesaler and the producer, because the wholesale price that maximizes the wholesaler's profits is higher than the wholesale price that maximizes the producer's profits (Klein 1995: 13). Ordinarily, a producer utilizing exclusive territories can prevent wholesalers from exploiting their market power by simply terminating and replacing the wholesaler if he charges an excessive markup. In Virginia, however (similar to 19 other states), a winery cannot terminate its agreement with a wholesaler in the absence of "good cause," such as state revocation of the wholesaler's license, bankruptcy of the wholesaler, or other factors. Furthermore, in the case of a dispute, the wholesaler must be given 60 days to cure any deficiency, and the state's Department of Alcoholic Beverage Control ultimately determines good cause after a hearing (VA Code Sec. 4.1-406).

Allowing one party to terminate a contract "at will" can be an efficient deterrent to cheating by the other party (Beales and Muris 1995: 161), yet the good cause requirement for contract termination effectively precludes termination if the wholesaler is in compliance with all contract terms (FTC 1999). Hence, a winery selling to Virginia wholesalers could effectively find itself powerless to terminate wholesalers who exploit market power created by the "primary area of responsibility" requirement. Furthermore, as Brickley (2002: 513) notes in his analysis of good cause restrictions on franchise termination, a franchisor (analogous to a winery) must engage in costly activities such as extensive recordkeeping "to correct performance deficiencies" with franchisees (analogous to a wholesaler), which can also lead to higher retail prices.

Economic theory thus suggests that Virginia's three-tier system could raise prices or have other deleterious effects on consumers. But could direct shipping provide an effective remedy? A growing body of research considers whether consumers can benefit by shopping online in place of, or in addition to, bricks-and-mortar outlets. Some scholars (e.g., Smith, Bailey, and Brynjolfsson 1999) have suggested several reasons why online prices generally might be lower than offline prices, including the presence of many more sellers, and lower search costs, which can diminish the market power of potential sellers. Alternatively, other scholars (e.g., Lynch and Ariely 2000) have argued that online prices could also be higher than offline prices, due to the value of consumers' time and reduced

search costs for quality attributes.[18] In discriminating between these competing hypotheses, empirical findings have been mixed.[19] Existing scholarship has limited relevance to our current enterprise, however, as it has generally focused on products that can be legally purchased online. Such is not always the case for wine.

One exception to this rule is Wiseman and Ellig (2004), who found that prices for premium wines (including shipping costs) were lower online than in Northern Virginia bricks-and-mortar stores. Their analysis drew on data generated before Virginia's repeal of its interstate direct shipment ban, and hence online shopping from other states was not a viable consumer option.[20] By analyzing how prices compare in electronic and bricks-and-mortar markets when direct shipping is legal, we can assess whether online competition provides a viable alternative to a state's three-tier system and whether legalized direct shipment might be more beneficial to consumers than the current regime(s).

III. Empirical Method, Data Sources and Calculations

To develop the clearest picture of the effects of direct shipment laws, we focus on one specific market (Northern Virginia) within a limited time frame when no obvious economic shocks occurred. We analyze market data from the summers of 2002 and 2004, one year before and after Virginia legalized direct shipment (in July 2003), which provides us with a reasonably "clean" picture of how the removal of regulatory barriers affected the market. Our empirical method thus embraces the "natural experiments" literature in economics and political science, wherein scholars analyze how changes in one variable of interest (e.g., regulations) holding all else constant influences their dependent variable of interest (e.g., market price competitiveness).[21]

Milyo and Waldfogel (1999) employ such an approach to studying alcohol markets in their analysis of the effects of the Supreme Court's *44 Liquormart* decision, which legalized product advertising for alcoholic beverages in Rhode Island. Chief among their findings was that while product advertising was related to more competitive pricing, the legalization of advertising did not generally influence several other conventional indicators of market competition. Their conclusions are based on analysis of the change in price differentials between Rhode Island, where the advertising policy changed as a result of the court decision, and Massachusetts, where policy did not change because advertising was already legal. Similarly, by examining the difference in online and offline prices in 2002 and 2004

[18] Smith, Bailey, and Brynjolffson (1999: 109) also cite consumers' valuation of time as a plausible reason for the incidence higher online prices.

[19] Scott-Morton et al (2001) and Zettlemeyer et al (2001) found that users of an online referral site (autobytel.com) pay lower prices than they otherwise would have paid. Cooper (2005) found that consumers can reap substantial savings purchasing disposable contacts online. Some studies of online auto auctions, CDs, books, and software, in contrast, have found that prices are higher online (Lee 1997, Bailey 1998), although a more recent study of books and CDs found that online prices are generally lower (Brynjolfsson and Smith 2000). Wiseman (2000) provides a detailed discussion of this literature.

[20] In a separate analysis, Ellig and Wiseman (2004) demonstrate that the lowest-priced bottles online are generally located at California retailers. Given that California has the most lenient regulatory structure regarding alcohol, their findings suggest how the Internet might facilitate regulatory competition between the states if trade impediments, such as direct shipment bans, are removed.

[21] See Meyer (1995) for a description of the method.

in the same region of the same state, we implicitly control for other major factors that might affect wine price fluctuations, which allows us to draw conclusions about the market reaction to changes in the regulatory environment.

In conducting our study, the wine sample, data collection and coding protocol, and analytical procedures we employed are identical to those used in Wiseman and Ellig's (2004) earlier study of Virginia's direct shipment ban that employed 2002 data. More specifically, we focus on price and availability of bottles in a pre-selected sample in bricks-and-mortar wine retailers in Northern Virginia in comparison to online markets. For 2002, we use the same data set described in Wiseman and Ellig (2004).

To generate a comparable wine sample for 2004, we draw data from the 15th Annual Restaurant Poll conducted by *Wine and Spirits* magazine that was published in the April 2004 issue, focusing on the "Top 50 Most Popular Wines" in America's restaurants.[22] The survey consisted of questionnaires mailed to 2,112 restaurants in the United States which asked (among other questions) what each restaurant's top ten selling wines were in the last quarter of 2003.[23] For each of the ten wines listed on a restaurant's response, *Wine and Spirits* assigned a value ranging from ten (for the best selling wine) to one (for the tenth best selling wine), which contributed towards its list of most popular wines (which were arranged by varietal). For example, if Winery X held spots 1, 2, and 3 on Restaurant Y's wine list for its Cabernet Sauvignon, Chardonnay, and Zinfandel, respectively, then its Cabernet, Chardonnay and Zinfandel would receive 10, 9, and 8 points, respectively. The ranking of each wine was determined by summing the scores across all respondents.[24]

Given the list of most popular wines arranged by varietal, the 50 highest point recipients were selected for online and bricks and mortar comparisons from the collection of Cabernet Sauvignons, Chardonnays, Merlots, Pinot Noirs, Sauvignon Blancs and Zinfandels produced by American winemakers.[25] Focusing on the top 50 point recipients actually identifies more than 50 bottles—in this case, 78. The difference between the ordinal rankings and the sample size follows from the fact that *Wine and Spirits* recognizes all relevant bottles that fall under a given winery's varietal when it identifies the most popular Chardonnays, Merlots, and so forth.[26] That being said, six of the bottles were found to be either unavailable for retail sale to consumers (i.e., they were only available directly to restaurants), or had been misnamed by *Wine and Spirits* and analogous bottlings

[22] Wiseman and Ellig (2004) drew data from the 13th annual restaurant poll, published in April 2002.

[23] 350 restaurants responded with completed polls by the requested deadline.

[24] *Wine and Spirits*' "Top 50" list is not determined primarily by these point totals, but rather by how many mentions per 100 responses a winery receives from restaurants in the polls (where points only come into play in case of ties).

[25] The highest ranked wine in the 2004 sample is the Sonoma-Cutrer Vineyards Chardonnay, with 360 points. The 50th-most popular wine was a six-way tie between Pinot Noirs produced by Byron and Chehalem Wineries, Chardonnays produced by Chateau St. Michelle and Ferrari-Carano Wineries, and Merlots produced by Chateau St. Michelle and Frog's Leap Wineries, with 34 points each.

[26] For example, Kendall-Jackson Vineyards' Chardonnay received 226 points, making it the second most popular wine overall, but Wine and Spirits recognized two bottles, the "California Grand Reserve" and the "California Vintners Reserve," and hence both were included in our sample.

could not be identified. Hence, the current vintages of the remaining 72 bottles were used for price comparisons between offline and online retail channels.[27]

Data on price and variety from offline retailers were collected by first consulting "Yahoo! Yellow Pages" and identifying every store identifying itself as a "wine retailer" located in Virginia within a ten-mile radius of McLean, a wealthy suburb approximately ten miles from Washington, DC. The list that emerged was slightly larger than the Wiseman and Ellig's (2004) list, with a total of 15 wine stores identified by Yahoo.[28] After identifying the relevant offline retailers, actual price data were collected during on-site visits during late summer and early fall of 2004.

Prices from online outlets were acquired from two sources. First, in our initial inquiry to wineries, we collected price information on the most recent vintages that were available for sale. To collect price data from other retail stores that had an online presence, we engaged the shopbot Winesearcher.com, which had access to price and inventory data from more than 2500 wine stores and wineries with online inventories at the time of data collection.[29] For each bottle in the sample, Winesearcher.com produced a list of all retailers in its database that offered bottles and their respective prices (including the lowest price). The "best online price" was determined by selecting the lower of the two prices presented by Winesearcher.com and the winery, respectively, at the time of data collection.

All online and offline price data for 2004 were collected between late July and early October. Table 1 presents summary statistics on the prices of the lowest-priced bottles found online and in bricks-and-mortar Virginia stores.

Table 1: Summary Statistics for 2004 Price Data

Variable	Mean	Std. Dev.	Min	Max	N
Lowest Offline Price	24.214	15.882	7.99	89.99	63
Lowest Online Price	21.996	15.115	7.69	99.99	72

[27] As a sidenote, none of the top-selling bottles in either 2002 or 2004 was from a Virginia winery.

[28] All of the wine retailers identified in 2002 are included in this sample, with the exception of Sutton Place Gourmet, which is no longer listed in Yahoo as a "wine retailer."

[29] This is a considerable increase from the 2002 capabilities of Winesearcher.com, which was employed by Wiseman and Ellig (2004), and had access to less than 800 retail outlets. The figures on the number of wine sellers were provided by a Winesearcher.com representative in May 2005. The large increase in the number of online stores searched might bias our results in favor of finding larger online-offline price differentials in 2004 than in 2002, if the larger sample size increases our odds of finding some better prices online. The possibility of this bias increases our confidence that the results we report below are, if anything, conservative estimates of the effect of Virginia's law.

IV. Findings

While our sample is limited in size, we are still able to address the following questions. First, is there a nontrivial difference in product availability in online and offline markets? Second, is there a nontrivial price difference for identical products offered in both bricks and mortar retailers and online wine shops? Finally, how do the product and price differences in the 2004 sample compare to the 2002 sample? Are any differences consistent with the hypothesis that removal of the ban fostered a more competitive market environment by giving consumers an alternative to Virginia's three-tier distribution system?

On the question of product availability, at first glance our exercise might seem trivial. After all, it should be no surprise that a search of 2500 (online) stores should find greater product variety than a search of 15 (offline) stores. That being said, the sample being analyzed makes this inquiry somewhat more interesting. We focus on a highly popular sample of wines—bottles that have been identified, due to actual consumption patterns, as the top sellers in restaurants (some of which were located in the Washington, DC metropolitan area). Throughout the debate over the legalization of direct shipment, advocates for wholesaler interests have consistently argued that any highly desirable wine can easily find its way into the distribution network (Gray 2002).[30] Hence, we are taking such claims at face value, and analyzing whether highly desirable wines are truly found as easily offline as they are online, following a reasonable search.[31]

Of the 72 bottles in our sample that were available for retail sale in the most recent vintage, all of them were available for sale from online wine sellers willing to ship to Virginia. In contrast, nine of the 72 bottlings (12.5 percent) were not available in bricks-and-mortar stores within 10 miles of McLean, Virginia at the time of data collection. Prior to the repeal of Virginia's direct shipment ban, Wiseman and Ellig (2004) found that for their 2002 sample, 15 percent of the wines that were available online could not be found in offline stores. Hence, contrary to the claims of wholesellers and related interests, even with the legalization of direct shipment, some of the highly desirable wines still cannot be found easily in bricks-and-mortar outlets. Furthermore, while there has been some increase in the percentage of wines available both online and offline following the legalization of direct shipment, the increase has not been substantial.[32]

Due to the small sample size, however, one might consider taking these results with a grain of salt. Moreover, because shelf space may be constrained in the bricks-and-mortar world, it is unclear whether we should expect any nontrivial differences between bricks-and-

[30] Representing the Wine and Spirits Wholesalers of America (WSWA) at a 2002 FTC workshop on potential barriers to electronic commerce, Boyden Gray argued that "no wholesaler worth his salt would fail to market any quality product for which a demand can be demonstrated."

[31] Of course, one might question whether searching 15 bricks and mortar stores constitutes a "reasonable" search; it obviously takes much more time and effort than an Internet search of 2500 stores. We disregard this point for the moment.

[32] Probit analysis reveals that the probability of finding a bottle in a bricks-and-mortar store in Northern Virginia has not changed, statistically speaking, between 2002 and 2004.

mortar availability in the 2002 and 2004 samples. If retailers were stocking their shelves with as many highly-desirable wines as possible in 2002, then there's no reason to expect that the legalization of direct shipment should lead to better variety offline.[33] Even if retailers wanted to expand their selections, such expansions may be infeasible.[34]

Prices, however, may tell a different story. There are fewer obvious constraints preventing price changes in response to increased competition, and hence, we might expect more interesting comparisons to emerge. Prices for the same wine are consistently lower online than in bricks-and-mortar outlets. Table 2 presents the average price-per-bottle savings from purchasing wines from the least-costly online retailer over the least-costly bricks-and-mortar store for all bottles in our 2004 sample.

Table 2: 2004 Lowest Online and Lowest Offline Price Differences

Category	Mean	Std. Dev.	Min.	Max.	N
All Bottles	3.048**	5.608	-11.00	25.99	63
Avg. Price < $20.00	1.183**	2.150	-3.00	6.00	29
Avg. Price ≥ $20.00	4.639**	7.035	-11.00	25.99	34
Avg. Price ≥ $40.00	12.260**	6.290	5.00	25.99	8

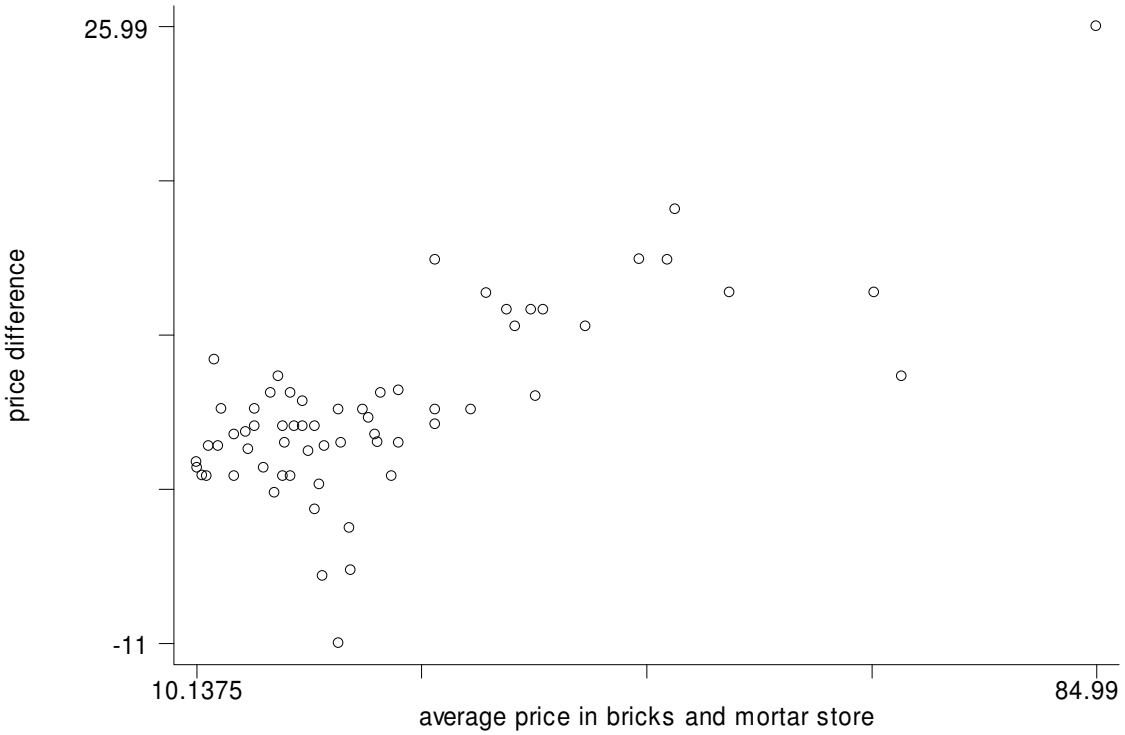
**Indicates p-value < .05 (two-tailed test).

For the entire sample of bottles that could be found both online and offline in 2004 (N=63), the average per-bottle savings is approximately $3.05. Furthermore, as demonstrated by rows 2-4 of Table 2, these per-bottle savings are increasing in the average offline price of the bottle, with those bottles that have an average retail price of $40.00 or more in bricks-and-mortar stores being an average of $12.26 less expensive online. Figure 1 presents a scatterplot of the per-bottle price savings from purchasing online as a function of the average offline price. The correlation between these variables is strongly positive, with a correlation coefficient of 0.73 (p-value < .01).

[33] Similarly, if retailers have long-term multi-year contract arrangements with wholesalers, they might be limited in changing their product selections in response to online competition immediately following the legalization of direct shipment.

[34] Within the "Top 50," however, it is not evident that product availability is related to bottle popularity. A simple bivariate probit reveals that a bottle's *Wine and Sprits* ranking is entirely unrelated to whether it was found in a bricks-and-mortar Virginia store in either 2002 or 2004.

Figure 1: 2004 Price Differences (lowest offline – lowest online) Compared to Average Bricks and Mortar Price



Note that all price differences in Table 2 are statistically significant, regardless of the retail price of the bottle.

Because the retail prices of bottles in our sample vary greatly, it is more instructive to actually consider average percentage differences between online and offline sales—that is, the percentage discount associated with purchasing the bottle online. Table 3 presents such percentage differences where the difference is defined as:

$$\frac{(\text{cheapest bricks and mortar price for bottle } i) - (\text{cheapest online price for bottle } i)}{(\text{cheapest bricks and mortar price for bottle } i)}.$$

Table 3: 2004 Lowest Online and Lowest Offline Percentage Differences

Category	Mean	Std. Dev.	Min.	Max.	N
All Bottles	8.97**	17.34	-50.02	40.02	63
Avg. Price < $20.00	7.60**	14.16	-15.01	40.02	29
Avg. Price ≥ $20.00	10.15**	19.80	-50.02	40.02	34
Avg. Price ≥ $40.00	21.00**	6.84	10.02	32.49	8

**Indicates p-value < .05 (two-tailed test).

For the entire sample, the online price averages approximately 8.9 percent lower than the offline price. Similar to Table 2, we also see that the percentage difference is increasing in the offline retail price of the bottle. Less expensive bottles (those with an average price less than $20.00) are approximately 7.6 percent less expensive online than offline, and the most expensive bottles cost an average of 21 percent less online compared to offline.

Qualitatively, these results are consistent with Wiseman and Ellig's earlier findings, as well as more general findings about the market competitiveness of online versus offline retail outlets (e.g., Brynjolfsson and Smith 2000). Similar to our variety comparisons, however, the interesting question to address is whether these online and offline price differences are statistically different from those that existed in 2002, when out-of-state direct shipment to Virginia consumers was illegal.

To address this question, Table 4 presents the results from ordinary least squares analysis where the dependent variable is the percentage price difference between offline and online retail channels. The data included in the analysis are those collected in 2002 and 2004, one year before and after the legalization of direct shipment in Virginia, respectively. Tests indicate that the data suffer from heteroskedasticity, and hence Huber-White standard errors are employed for the purposes of statistical inference.[35]

[35] Cook-Weisberg χ^2 test-statistic = 19.84 (p-value < .001).

Table 4: Determinants of Percentage Differences in Lowest Online and Lowest Offline Prices

Variable	(1)	(2)	(3)	(4)
2004 Data	-0.069	-0.057	-0.106	-0.107
	(2.55)	(2.27)	(2.42)	(2.42)
Avg. Bottle Price (offline)		0.003	0.002	0.002
		(5.21)	(4.00)	(4.01)
2004 Data x Avg. Bottle Price			0.002	0.002
			(1.68)	(1.70)
Bottle Popularity				0.000
				(0.40)
Constant	0.158	0.080	0.093	0.083
	(10.00)	(3.78)	(4.08)	(2.49)
N	130	130	130	130
Adjusted-R^2	0.04	0.16	0.16	0.16

Ordinary Least Squares coefficients with t-statistics in parentheses, based on Huber-White standard errors.

In estimating all models, the coefficient for the 2004 dummy is of crucial interest; this dummy indicates data collected one year following the legalization of direct shipment. If the Virginia wine market became more price competitive following direct shipment, one would expect that the lowest-pricing bricks and mortar wine stores would price their offerings more closely to Internet posted prices than before the legalization of direct shipment. Such behavior would manifest itself in a negative and statistically significant coefficient on the 2004 dummy, indicating that the online percentage discount was significantly less in 2004 than in 2002.

Model 1 presents a bare-bones analysis that regresses the online percentage discount against the 2004 dummy. The constant is positive and significant, indicating that when pooling the 2002 and 2004 data together, the average bottle purchased offline is nearly 16 percent more expensive than its online counterpart. The coefficient on the 2004 dummy is negative and statistically significant, indicating that the online percentage discount is significantly less in 2004 (6.9 percentage points), in comparison to 2002. This result is consistent with the argument that the market was indeed more competitive in 2004 than in 2002, following the legalization of direct shipment.

Model 2 controls for the average offline retail price of the bottle, to investigate whether the results of model (1) are being generated by differences in the price distributions of the bottles in the 2002 and 2004 samples. Suppose that the 2002 sample had generally more expensive bottles, and these more expensive bottles were priced much higher in bricks-

and-mortar stores than in online outlets. Under such circumstances, our result for the 2004 dummy might simply be an artifact of the 2004 sample being slightly less expensive and having smaller online discounts in the right-hand tail of the price distribution. Model 2 shows, however, that while the coefficient on average retail bottle price is positive and statistically significant, the coefficient on *2004 Data* is still negative and statistically significant. Even controlling for average offline retail bottle price, the average online percentage discount is still positive (it is more expensive to purchase bottles offline), and was about 6 percentage points lower in 2004 than in 2002. In terms of magnitude, this result implies that the offline-online price differential was reduced by nearly 40 percent following the legalization of direct shipment in Virginia.

Model 3 investigates whether the decrease in percentage discount in 2004 is generally uniform across the entire sample, or related to bottle price. Given that analysis of the 2002 and 2004 data indicated that the largest discounts occur on the more expensive bottles, it seems plausible that the most-expensive bottles have the most slack to cut if retailers are becoming more competitive with online prices. Hence, one might expect that not only should the average percentage discount in 2004 be less than in 2004, but the discount on the most expensive bottles should be relatively lower in 2004 than in 2002, in comparison to the rest of the sample. If the online discount fell disproportionately on the more expensive bottles, the coefficient on the interaction term *2004 Data x Average Bottle Price* should be negative and significant. As can be seen from the analysis of Model 3, however, the coefficient on *2004 Data x Average Bottle Price* is positive, and achieves marginal statistical significance. In contrast with our expectations, it appears that online percentage discounts fell disproportionately for less-expensive bottles in 2004, in contrast to the more expensive bottles in our sample. The results in model 3 imply that for a bottle that had an average offline price of $22.07 (the median offline price in our sample), Virginia's law reduced the percentage price spread from 13.7 points in 2002 to 7.5 points in 2004—nearly a 44 percent drop.

Finally, Model 4 investigates whether online discounts are related to bottle popularity, where our measure of bottle popularity is the bottle's rank in our "top 50" list based on the *Wine and Spirits* restaurant poll. To the extent that consumers perceive quality differences between bottles, retailers might leverage such information in charging higher markups (Lynch and Ariely 2000). While most consumers might not have explicit information about the restaurant poll results, a bottle's ranking might be correlated with other perceived product qualities (such as expert reviews) that retailers might advertise to consumers where bottles are being sold. Hence, one might expect that the more popular bottles would have lower online percentage discounts, leading to a negative coefficient on *Bottle Popularity* in our model.[36] As can be seen in the analysis of Model 4, however, such a result does not hold—a bottle's ranking in the *Wine and Spirits* poll is unrelated to the percentage discount available online.[37]

Finally, Table 5 presents an alternative perspective on how the elimination of Virginia's direct shipment ban influenced market competition. While the results of Table 4 clearly

[36] Bottle rank ranges from one to 50, with one being the most popular bottle.

[37] Separate analysis indicates that this result holds when analyzing the 2002 and 2004 data separately.

demonstrate that the gap between the lowest online and offline prices diminished following the repeal of the ban, such results are not necessarily indicative of a more competitive market. For example, if the lowest-pricing bricks-and-mortar retailers posted prices that were closer to the lowest online prices, but all other bricks-and-mortar retailers held their prices constant (or even increased them), it would be difficult to say that the repeal of the ban generally enhanced market competition. While the results in Tables 1-4 provide evidence that a very price-conscious consumer could have benefited from the repeal of the ban, but they provide little insight as to how the average retailer changed his pricing policies following the change in the law. Table 5 investigates this question further by analyzing how average offline prices varied in response to the lowest online prices for bottles in our sample, before and after the ban's repeal.[38] The analysis in Table 4 is replicated, except the dependent variable is the percentage difference between the *average* offline price and the lowest online price:

$$\frac{(\text{average bricks and mortar price for bottle } i) - (\text{cheapest online price for bottle } i)}{(\text{average bricks and mortar price for bottle } i)}.$$

Consistent with our earlier analysis, the independent variable of interest is the 2004 dummy, which indicates whether the percentage difference between the average offline bottle price and the lowest online price decreased in 2004 in comparison to 2002.[39]

[38] Analyzing changes in the percentage difference between the average offline price and lowest online price is arguably a more realistic assessment of how the market has changed for the average consumer following the repeal of the direct shipment ban. The typical consumer who engages in comparison shopping might plausibly use an online search engine, but likely does not visit all stores within a ten-mile search radius of his residence.

[39] Huber-White standard errors are employed for inference purposes in Models 1-4 to account for heteroskedasticity in the data.

Table 5: Determinants of Percentage Differences in Lowest Online and Average Offline Prices

Variable	(5)	(6)	(7)	(8)
2004 Data	-0.058	-0.049	-0.063	-0.064
	(1.83)	(1.55)	(1.30)	(1.30)
Average Bottle Price (offline)		0.002	0.002	0.002
		(4.15)	(4.26)	(4.12)
2004 Data x Average Bottle Price			0.001	0.001
			(0.33)	(0.38)
Bottle Popularity				0.001
				(0.51)
Constant	0.219	0.153	0.157	0.141
	(13.06)	(6.64)	(6.94)	(3.98)
N	130	130	130	130
Adjusted-R^2	0.02	0.07	0.07	0.06

Ordinary Least Squares coefficients with t-statistics in parentheses, based on Huber-White standard errors.

Similar to our results regarding the lowest bricks-and-mortar prices, Table 5 indicates that there is a statistically significant percentage difference in the prices posted by the average bricks-and-mortar wine seller and the lowest-pricing online merchant. The positive constant in Model 5 indicates that the average bottle purchased from the average offline wine seller is about 22 percent more expensive than the lowest-pricing online winestore. The negative and statistically significant 2004 dummy, however, indicates that the online discount is 5-6 percentage points less in 2004 than in 2002—a 26 percent decrease. Hence, the average retailer, and not just the lowest-pricing bricks-and-mortar retailer, was lowering its prices to meet the online competition following the repeal of the direct shipment ban. This result is robust to the inclusion of controls for the average offline bottle price (Model 6), though the statistical significance of the finding decreases modestly.[40]

Models 7 and 8 test for whether these percentage price differences are generally uniform across the entire sample, regardless of bottle price, and whether they are responsive to a bottle's popularity, respectively. The coefficients on *2004 Data x Average Bottle Price* and *Bottle Popularity* are both statistically indistinguishable from zero. Hence, it appears that online percentage discounts fell regardless of the bottle's average bricks-and-mortar price, and the reduction in the discount was also unrelated to a bottle's popularity.[41] Taken together, the results of Tables 4 and 5 offer further support to the hypothesis that the

[40] p-value < .10 (one-sided test).

[41] While the inclusion of average offline bottle price on the right-hand side in models (6-8) introduces the potential for bias due to its relationship with the dependent variable (average percentage discount), the robustness of our results in Table 4 and model 5 gives us confidence that our estimate of *2004 Data* is substantively appropriate.

removal of Virginia's direct shipment ban increased competition in the bricks-and-mortar world.

V. Conclusion

While scholars have generally accepted that the commerce clause has facilitated an efficient national economy, little systematic evidence has been amassed to support this argument. Until recently, state alcohol policy was in the unique position of apparently being immune from the commerce clause. As a result, for the past 70 years states found themselves engaging in practices that resembled trade wars among foreign nations. Recent legal developments provide us with an opportunity to identify how reductions in these trade barriers, which would be consistent with the intention of the commerce clause, affect the alcohol market. While our method of focusing on one market in a particular timeframe is consistent with a "natural experiments" approach to studying regulation, certain caveats regarding the size and scope of our sample are worth considering.

First, concerns might be raised that our results are specific to the relatively wealthy and cosmopolitan Northern Virginia suburbs of Washington, DC, and hence not reflective of the market dynamics in other wine-consuming states subject to direct shipment bans. While we are sympathetic to this concern, we would argue that Northern Virginia is similar to many affluent suburban areas in the United States, with respect to income, demographics and consumer tastes. Furthermore, Virginia's wine consumption is not disproportionate to its population size, as it was ranked 12th among states in both categories in 2003.[42] To the extent that wine consumption pervasively corresponds to population size, we contend that the implications of our findings should not be limited to this one community.

Second, while our relatively small sample size might limit this study's applicability to the broader market, we offer two defenses to our approach. First, Wiseman and Ellig's (2004) study confined its analysis to an analogous sample of wines, and hence, we must consider a similar sample if we seek to identify how changes in the law corresponded to changes in the market. In addition, because we seek to analyze a sample of popular products, the *Wine and Spirits* sample is particularly attractive for our purposes in that it is generated by surveying actual consumption patterns.[43]

Having noted these caveats, our analysis indicates that even for a highly popular sample of wines, consumers in Northern Virginia can find greater product selection and more competitive prices online than in their neighborhood stores. These results hold both for 2002, when interstate direct shipping of wine into Virginia was illegal, and for 2004, after interstate direct shipping became legal. The principal difference between the two years is that online and offline prices have significantly converged. On average, the lowest online prices were about 9 percent lower than the lowest offline prices in 2004. Our econometric results show that legalization of interstate direct shipping in Virginia reduced the price

[42] Source: Adams Beverage Group, Adams Handbook Advance. 2004.

[43] Hence, the sample is likely more reflective of genuine market demand that what would follow from consideration of "expert" reviews.

differential by approximately 7 percentage points, meaning that the average price differential fell by nearly 40 percent between 2002 and 2004. Legalization also reduced the spread between lowest online and average offline prices by approximately 6 percentage points, which translates into a 26 percent decrease in the differential between 2002 and 2004. The difference, therefore, is not just statistically significant, but also substantial.

These results are consistent with the hypothesis that direct shipment bans are indeed barriers to market competition, and the removal of these bans will have nontrivial redistributive effects between consumers, wholesalers and retailers. Contrary to the advocates of the status quo in many states, the three-tier system by itself does not offer consumers the widest possible selection or lowest possible prices. Virginia's direct shipment ban, though possibly evaded in some cases, was effective enough to have a measurable influence on competition. Repeal of the ban benefited Virginia consumers—not just by facilitating entry by out-of-state sellers, but also by placing competitive pressure on the in-state sellers. More broadly speaking, this result clearly supports theories that predict how government mandated market restrictions inhibit competition and facilitate higher prices, and how the removals of those bans will facilitate more efficient market outcomes.

Our findings raise several interesting questions for further research. For example, is the price convergence we observe between online and offline retailers full or partial? Wiseman and Ellig's (2004) earlier findings demonstrated that after accounting for shipping and travel costs, consumers could save substantial amounts of money buying the more expensive wines online. That being said, shipping costs consumed considerable portions of the potential online savings (and completely outweighed the price savings for certain bottles). If price convergence is complete, we would expect online prices plus shipping costs following the repeal of the direct shipment ban to be equivalent to bricks-and-mortar prices plus travel and time costs.

Furthermore, our results highlight the salience of political decisions for market outcomes. As such, it is worth considering how the interest group environment will react to these market outcomes to bring about regulatory changes in the states. Our results indicate that wine-buying consumers have much to gain from the repeal of direct shipment bans, while wholesalers have much to lose. The extent to which change actually occurs will presumably depend on how competing interests organize themselves (Teske 1991, 2003; Wilson 1980), and the level of resources each side brings to bear for the lobbying battle that will likely influence legislative decisionmaking (Baron 1999, Groseclose and Snyder 1996).

With the Supreme Court's 2005 ruling, policymakers must now decide how best to harmonize their interstate and intrastate shipping and distribution policies to comport with both the court's ruling, and domestic (state) political pressures. This paper has shown what kind of market response state governments might expect if they remove direct shipment bans. Policymakers might be able to learn from Virginia's experiment, and apply its results to their own states, as would be expected in the "laboratory of democracy" that is the American states.

References

Anderson, Lloyd C. 2005. "Direct Shipment of Wine, the Commerce Clause, and the Twenty-First Amendment: A Call for Legislative Reform." *Akron Law Review*. 37:1.

Bailey, Joseph P. 1998. "Electronic Commerce: Prices and Consumer Issues for Three Products: Books, Compact Disks, and Software," *Organization for Economic Cooperation and Development*, OECD/GD(98)4.

Baron, David P. 1999. "Integrated Market and Nonmarket Strategies in Client and Interest Group Politics." *Business and Politics*. 1 (April): 7-34.

Beales, J. Howard III, and Timothy J. Muris. 1995. "The Foundations of Franchise Regulation: Issues and Evidence," *Journal of Corporate Finance* 2: 157-97.

Brickley, James A. 2002. "Royalty Rates and Upfront Fees in Share Contracts: Evidence from Franchising," *Journal of Law, Economics, & Organization* 18(2): 511-35.

Britton, Charles R., Richard K. Ford, and David E. R. Gay. 2001. "The United States Wine Industry: Restraint of Trade and the Religious Right." *International Journal of Wine Marketing*. 13(2) :43-58

Brynjolffson, Erik, and Michael Smith. 2000. "Frictionless Commerce? A Comparison of Internet and Conventional Retailers." *Management Science*. 46 (4): 563-585.

Carrubba, Clifford, and James R. Rogers. 2003. "National Judicial Power and the Dormant Commerce Clause." *Journal of Law, Economics, and Organization*. 19 (2): 543-570.

Chemerinsky, Erwin. 1997. *Constitutional Law: Principles and Policies*. New York (NY): Aspen Publishers, Inc.

Cooper, James C. 2005. "Prices and Price Dispersion in Online and Offline Markets for Contact Lenses." Paper Presented at the 2005 Meetings of the Southern Economic Association.

Culbertson, W. Patton, and David Bradford. 1991. "The Price of Beer: Some Evidence from Interstate Comparisons," *International Journal of Industrial Organization* 9:2: 275-89.

Dills, Angela K., Mireille Jacoson, and Jeffrey A. Miron. Forthcoming. "The Effect of Alcohol Prohibition on Alcohol Consumption: Evidence from Drunkenness Arrests." *Economics Letters*.

Dills, Angela K., and Jeffrey A. Miron. 2004. "Alcohol Prohibition and Cirrhosis." *American Law and Economics Review*. 6(2): 285-318.

Ellig, Jerry and Alan E. Wiseman. 2004. "Interstate Trade Barriers and Potential Regulatory Competition: The Case of Direct Wine Shipping," *Journal of Private Enterprise*. 19(2): 26-42.

Fellman, David. 1948. "Federalism and the Commerce Clause, 1937-1947." *Journal of Politics*. 10 (1): 155-167.

FTC. 1999. Letter from C. Stephen Baker, Director, Chicago Regional Office, Federal Trade Commission, to The Honorable Dan Cronin (March 31) at http://www.ftc.gov/be/v990005.htm

Gray, C. Boyden. 2002. "Wine and Spirits Wholesalers of America Summary Position Paper." Presented to the Federal Trade Commission Workshop on Possible Anti-Competitive Efforts to Restrict Competition on the Internet (October 8.)

Green, Thomas S., Jr. 1940. "Interstate Barriers in the Alcoholic Beverage Field." *Law and Contemporary Problems*. 7(4): 717-27.

Groseclose, Tim and James M. Snyder. 1996. "Buying Supermajorities." *American Political Science Review*. 90(2): 303-12.

Illinois Alcoholism and Drug Dependence Association. 2004. *Brief of the Illinois Alcoholism and Drug Dependence Association as Amici Curiae in Support of Petitioners*, Granholm et al. v. Heald et al.

Johnson, Cathy M. and Kenneth J. Meier. 1990. "The Wages of Sin: Taxing America's Legal Vices." *American Journal of Political Science*. 43 (3): 577-595.

Jordan, W. John, and Bruce L. Jaffee. 1987. "The Use of Exclusive Territories in the Distribution of Beer: Theoretical and Empirical Observations," *Antitrust Bulletin* 32:1 (Spring): 137-64.

Klein, Benjamin. 1995. "The Economics of Franchise Contracts," *Journal of Corporate Finance* (2): 9-37.

Lee, Ho Geun. 1997. "Do Electronic Marketplaces Lower the Price of Goods?," *Communications of the ACM* 41:12.

Lukacs, Paul. 2000. *American Vintage: The Rise of American Wine*. New York, NY: Houghton Mifflin Company.

Lynch, John G., and Dan Ariely. 2000. "Wine Online: Search Costs Affect Competition on Price, Quality, and Distribution." *Marketing Science*. 19: (1): 83-103.

Meyer, Bruce D. 1995. "Natural and Quasi-Experiments in Economics," *Journal of Business & Economic Statistics* 13:2 (April): 151-61.

Michigan Association of Secondary School Principals. 2004. *Brief of the Michigan Association of Secondary School Principals et al. as Amici Curiae in Support of Petitioners*, Granholm et al. v. Heald et al.

Milbank, Dana. 2004. "White House Considers Role in Wine Case," *Washington Post* (July 29): A04.

Milyo, Jeffrey, and Joel Waldfogel. 1999. "The Effect of Price Advertising on Prices: Evidence in the Wake of 44 Liquormart." *American Economic Review*. 89 (5): 1981-1096.

Miron, Jeffrey A. and Jeffrey Zwiebel. 1991. "Alcohol Consumption During Prohibition." *American Economic Review*. 81 (2): 242-247.

O'Neill, John E. 1940. "Federal Activity in Alcoholic Beverage Control." *Law and Contemporary Problems*. 7(4): 570-99.

Pinney, Thomas. 1989. *A History of Wine in America from the Beginnings to Prohibition*. Berkeley: University of California Press.

Posner, Richard A. 1974. "Theories of Economic Regulation." *Bell Journal of Economics and Management Strategy*. 5(2): 335-58.

Riekhof, Gina, and Michael Sykuta. 2005. "Politics, Economics, and the Regulation of Direct Interstate Shipment in the Wine Industry." *American Journal of Agricultural Economics* 87 (2): 439-452.

Sass, Tim R., and David S. Saurman. 1996. "Efficiency Effects of Exclusive Territories: Evidence from the Indiana Beer Market," *Economic Inquiry* 34:3 (July): 597-615.

Scott Morton, Fiona, Florian Zettelmeyer and Jorge Silva-Risso. 2001. "Internet Car Retailing," *Journal of Industrial Economics* 49:4 (December): 501-19.

Slade, Margaret E. 1998. "Beer and the Tie: Did Divestiture of Brewer-Owned Public Houses Lead to Higher Beer Prices?" *The Economic Journal*. 108(May): 565-602.

Smith, Michael D., Joseph Bailey, and Erik Brynjolfsson. 2000. "Understanding Digital Markets: Review and Assessment," in E. Brynjolfsson and B. Kahin, eds. *Understanding the Digital Economy: Data, Tools, and Research*. Cambridge: MIT Press: 99-136

Stigler, George J. 1971. "The Theory of Economic Regulation." *Bell Journal of Economics and Management Science*. 2(1): 3-21.

Teske, Paul. 1991. "Interests and Institutions in State Regulation." *American Journal of Political Science*. 35 (2): 139-54.

_____. 2003. "State Regulation: Captured Victorian-Era Anachronism or "Re-enforcing" Autonomous Structrue?" *Perspectives on Politics*. 1 (2): 291-306.

Weingast, Barry R. 1995. "The Economic Role of Political Institutions: Market-Preserving Federalism and Economic Development." *Journal of Law, Economics, and Organization*. 11 (1): 1-31.

Whitman, Douglas. 2003. *Strange Brew: Alcohol and Government Monopoly*. Oakland, CA: The Independent Institute.

Wiseman, Alan E. 2000. *The Internet Economy: Access, Taxes and Market Structure*. Washington, DC: Brookings Institution Press.

Wiseman, Alan E., and Jerry Ellig. 2004. "Market and Nonmarket Barriers to Internet Wine Sales: The Case of Virginia," *Business and Politics* 6:2: Article 4.

Wilson, James Q. 1980. *The Politics of Regulation*. New York: Basic Books.

Yandle, Bruce. 1999. "Bootleggers and Baptists in Retrospect," *Regulation* 22 (3): 5-7.

_____. 1983. "Bootleggers and Baptists: The Education of a Regulatory Economist," *Regulation* (May/June): 12-16.

Zettelmeyer, Florian, Fiona Scott Morton, and Jorge Silva-Risso. 2001. "Cowboys or Cowards? Why are Internet Car Prices Lower?," National Bureau of Economic Research Working Paper No. 86.