The Impact of Alcohol Taxes and Liquor Licenses in New Mexico

David S. Dixon (corresponding author)
Senior Lecturer Emeritus, Department of Economics
University of New Mexico

Ana Paula Milan Hinostroza
Ph.D. Student, Department of Economics
University of New Mexico

Taran Cooley
Undergraduate Student, Department of Economics
University of New Mexico

Brady P. Horn
Professor, Department of Economics, and the Center on Alcohol, Substance use, and Addictions
University of New Mexico

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Executive Summary

Alcohol is a complex good with both economic benefits and considerable societal costs. Moderate alcohol consumption has been found to have some health benefits, but heavy alcohol consumption is associated with a number of health and societal harms. This is particularly acute in New Mexico, which leads the nation in alcohol related harm per capita. Alcohol is a heavily regulated good, with many laws and policies implemented with the goal of reducing alcohol related harms. Market-based mechanisms can also be used to reduce alcohol-related harms, including liquor licenses and alcohol taxes. The New Mexico Legislature has recently considered changes to both New Mexico liquor license and alcohol tax policies, but the effects of these changes are not well understood.

In this report we study alcohol policy with particular emphasis on alcohol taxes and liquor licenses. First, we review the existing literature on the relative effectiveness of different alcohol policies. Second, we evaluate the impact that an increase in alcohol taxes would have in New Mexico on both alcohol consumption and tax revenue. Third, we conduct an analysis of how effective beer taxes can be in reducing alcohol-related fatalities. Fourth, we collect novel geospatial liquor license data and examine the impact of changes in limits on the numbers, locations, and kinds of licenses have had in New Mexico.

We find that

- In addition to the relationship between alcohol and traffic fatalities, alcohol has a close association with crime, domestic violence, and reduced work performance.
- The proposed 25-cent per-drink alcohol tax could reduce alcohol use by up to 1.77% and increase tax revenue by $132 million. In terms of fiscal and social impacts, the per-drink tax is no different from an equivalent increase in alcohol excise tax.
- A hypothetical ten-cent per-gallon increase in beer excise taxes could reduce 2.84 alcohol-related traffic fatalities in New Mexico each year.
- Despite recent increases in the total number of liquor licenses, there has not been a statistically significant increase in alcohol-related traffic fatalities at the state-wide level.
- Migration of liquor licenses within the state has not had a statistically significant effect on alcohol-related fatalities at the local level.

1. Introduction

Alcohol is a complex good with both economic benefits and considerable societal costs. Alcoholic beverages are enjoyed around the world for both their taste and intoxicating effects. Moderate alcohol consumption has been found to provide health benefits including reducing the risk of heart disease, strokes and dementia (Foster & Marriott, 2006; Standridge et al., 2004). Also, it is estimated that in 2022 the beer industry contributed more than $409.2 billion to the U.S. economy, created over 2.4 million jobs and generated over $63.8 billion in tax revenue (John Dunham & Associates, 2023).

The benefits of moderate alcohol consumption must be contrasted with the substantial societal costs. Excessive alcohol consumption is associated with many types of cancers and heart and liver diseases. Also, heavy alcohol consumption is associated with many types of crime. While in the US alcohol-impaired driving fatalities have gone down over the last 30 years, in 2021 there was more than thirteen thousand alcohol-impaired traffic fatalities. Alcohol has also been found to be also associated with aggravated assaults, homicides, sexual assaults, as well as a number of other types of crime (Abbey et al., 1998, 2004; Corman & Mocan, 2015; Kuhns et al., 2014; Zhang et al., 1997). Overall, it is estimated that alcohol causes more than 140,000 deaths per year in the US, with an expected cost of at least $249 billion (CDC, 2022a)

The effects of excessive alcohol consumption are particularly pronounced in New Mexico. Historically, New Mexico has had one of the highest per capita rates of alcohol-related fatalities, but this has improved considerably over the last decade. Also, while binge drinking rates in New Mexico are lower than national averages, the state continues to have the highest per capita alcohol-related deaths in the nation (CDC, 2022b; NMDOH, 2023).

This report is intended to provide information to policy makers to help guide them with decisions surrounding alcohol policy. First, we review the literature on the historical impact that laws and policies have had on alcohol related harms. We pay specific attention to market-based mechanisms, including liquor licenses and alcohol taxes. Next, we consider the impact that an increase in alcohol taxes would have in New Mexico. Alcohol taxes have recently been considered in by the New Mexico Legislative session. For instance, HB 230 in the 2023 New Mexico Legislative session proposed a 25 cent per-drink tax. We present analysis of the impact a 25 cent per-drink tax would have on both the quantity of alcohol that would be consumed and the tax revenue that would be generated. Also, we conduct our own analysis on how beer taxes have impacted alcohol-related fatalities nationally. Finally, we collect novel geospatial liquor license data in New Mexico. We examine the impact of changes in limits on the numbers, locations, and kinds of licenses.

2. The Impact of Alcohol on Societal Outcomes

Nationwide, spending on advertisements for alcoholic beverages neared $1.7 billion in 2022[1]. In the US alcohol is very common at social gatherings, holidays, sporting venues, and so on. It has numerous societal benefits; however, it is also well known that alcohol can have grave and persistent consequences. In this section we review the health effects, injury and death as a consequence of drinking and driving, the correlation of alcohol use with crime, and how alcohol can impair the workforce.

[1] https://mediaradar.com/blog/alcohol-advertisers-shift-approach/ (accessed 31 July 2023)

2.1. The impact of alcohol on health

Alcohol consumption is associated with both positive and negative health outcomes. There is evidence that moderate alcohol intake can improve health in certain ways. Moderate alcohol consumption has been found to reduce the risk of ischemic strokes, dementia, diabetes and osteoporosis (Standridge et al., 2004). Also, moderate alcohol consumption can reduce the risk of developing diseases like myocardial infarction and heart failure (Standridge et al., 2004) and can also reduce the risk of coronary heart disease (CHD) for men over 55 years old (Foster & Marriott, 2006).

However, excessive alcohol consumption is associated with many negative health outcomes. Globally, alcohol contributes to 20% of injuries and 11.5% non-injury emergency room cases (Stockwell et al., 2021). Overall 5.3% of all deaths are attributed to alcohol and for people aged 20-39 years 13.5% of all deaths are attributable to alcohol consumption (World Health Organization, 2022). In the US alcohol-related deaths are the fourth leading preventable cause of death (Carter, 2021). Binge drinking is associated with an increase in the risk of many types of cancer, hypertension, heart, and liver diseases (Becker et al., 1996; CDC, 2022b). Petri et al. (2004) found that people who consume 5-10 drinks per day are 10 to 15 times more likely to develop oropharyngeal, esophageal, and hepatic cancers. Pedersen et al. (2003) found that excessive drinking increases the risk of colon cancer and Tjønneland et al. (2003) found that excessive drinking doubles the risk of breast cancer in women.

In addition, alcohol consumption has also been associated with high frequency of hypertension (Beilin & Puddey, 2006) and binge drinkers face higher risks of suffering major coronary events (McElduff & Dobson, 1997).[2] Also, alcohol has been found to be associated with suicide (Jennings et al., 2014). The negative effects of alcohol on health were exacerbated by the COVID-19 pandemic. During the first five months of the COVID-19 pandemic, there were almost 10 times the number of alcohol-related hospitalizations and deaths than COVID hospitalizations (Stockwell et al., 2021).

2.2. Alcohol-related motor vehicle accidents and fatalities

Every year in the US there are tremendous societal costs caused by alcohol-impaired motor vehicle accidents. In 2021 there were 13,384 traffic fatalities attributed to alcohol-impaired driving in the US. For context, every 39 minutes a person is killed in the US in a motor vehicle accident involving a drunk driver.[3]

Figure 1 uses data from the Fatality Analysis and Reporting System (FARS) to present trends in alcohol-related and alcohol-impaired traffic fatalities in the US and New Mexico from 1990 to 2020. Over the last 30 years there has been a considerable drop in both alcohol-related and alcohol-impaired fatalities. In 1990, the national average was almost 8 alcohol-impaired and 10 alcohol-related traffic fatalities per 100,00 population. In 2019, the US recorded its lowest rates of alcohol-impaired and alcohol-related traffic fatalities, with an average of 3.30 and 4.5 alcohol-impaired and alcohol-related fatalities per 100,000 population respectively. In 2020 there was a slight increase in the fatality rates; however, since the 1990s there has been a 50% reduction of the average alcohol-impaired and alcohol-related traffic fatality rates.

[2] Binge drinkers are defined as women who consume 5+ drinks on a given occasion, or men who consume 9+ drinks on a given occasion (McElduff & Dobson, 1997).
[3] Information retrieved from the National Highway Traffic Safety Administration (NHTSA): https://www.nhtsa.gov/risky-driving/drunk-driving

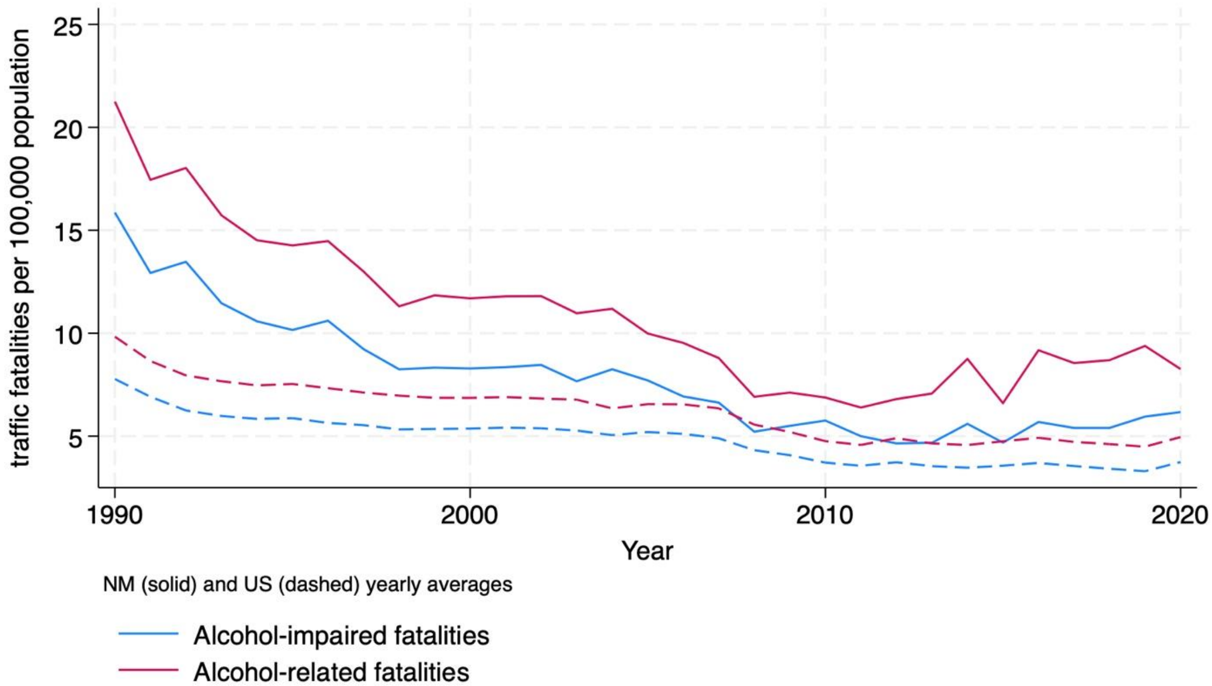

Figure 1. Average alcohol-related and alcohol-impaired traffic fatalities in the United States and New Mexico per 100,000 population from 1990-2020.

In addition, Figure 1 also presents alcohol-related and alcohol-impaired fatalities for New Mexico. The first thing to note is that the average alcohol fatality rates are higher than national averages, particularly in the early years of the figure. In 1990, there were 15.86 alcohol-impaired fatalities per 100,000 population and 21.25 alcohol-related traffic fatalities per 100,000 population. This was twice the national average. Over time, alcohol fatality rates in New Mexico have dropped considerably, even in respect to national averages. In 2010, the state average of alcohol-related fatalities was 6.87 fatalities per 100,000 population and the average of alcohol-impaired fatalities was 5.76 fatalities per 100,000 population. This was about 40% and 20% higher than the national average.

2.3. The impact of alcohol on crime

Alcohol consumption also has a considerable impact on crime. Kuhns et al., (2014) reports that every year over seven thousand homicide reports indicated alcohol as a contributing factor. The authors also found that 48% of individuals convicted for homicide admit to consuming alcohol before the homicide and 37% of offenders were intoxicated at the time of the murder (Kuhns et al., 2014). Alcohol consumption is also associated with violent crime. Zhang et al. (1997) found alcohol consumption increases the likelihood of youth committing aggravated assault. Also, Greenfeld & Henneberg (2001) found that approximately 60% of state prisoners reported drinking on a regular basis in the year before their offence.

Alcohol is associated with numerous other types of crime including grand larcenies (Corman & Mocan, 2015), sexual assaults (Benson & Zimmerman, 2007), rapes (Abbey et al., 1998, 2004; Corman & Mocan, 2015), and intimate partner violence (IPV) (Coker et al., 2000; Foran & O'Leary, 2008). In addition, the National Center for Drug Abuse Statistics (2023) reports that there are approximately 316,032 arrests per year in the US for public intoxication. Physical and sexual abuse have been found to be moderately associated with alcohol consumption (Miller et al., 1997); however, not all studies have found a strong relationship between these variables (Widom & Hiller-Sturmhöfel, 2001).

2.4. The impact of alcohol on labor outcomes

Excessive alcohol consumption has also been found to be associated with reduced employment and worsened labor market outcome (Mullahy & Sindelar, 1996; Pidd et al., 2006). Renna (2008) found that alcoholism is associated with lower hours worked and lower hourly wages. Additionally, an increase in alcohol consumption has been found to be associated with higher rates of workplace absenteeism (Bockerman et al., 2017; Green & Navarro Paniagua, 2016;

Johansson et al., 2014). However, the relationship between alcohol and worker productivity is complicated (Berger & Leigh, 1988; Terza, 2002). For instance, Dave & Kaestner (2002) found only a weak relationship between alcohol consumption and poor labor market outcomes.

3. Policies Used to Mitigate Alcohol Related Harms

Given the substantial societal costs associated with alcohol, there have been quite a few laws and policies passed over time to try to mitigate alcohol related harms, with differing levels of effectiveness. In this section we discuss alcohol policies and their relative effectiveness.

3.1. Per se blood alcohol laws

One of the most significant law changes in the US related to alcohol was the establishment, and then subsequent decrease in, the legal blood alcohol content (BAC) limit for operating a motor vehicle across states. Historically, the per se legal definition for impaired driving varied by state. However, in the late 1990s legislative initiatives to establish a uniform limit across states gained popularity. As a growing literature documented impairment at a BAC of 0.08, the Department of Transportation's 2001 Appropriations Act (HR4475) was passed, which mandated that states establish a 0.08 BAC law, or risk losing federal highway construction funds (Moskowitz et al., 1988, 2000; Moskowitz & Florentino, 2000). Today, all states now consider the 0.08 BAC or lower as the standard limit.[4]

Overall, establishing a 0.08 BAC limit has resulted in reduced alcohol-related crashes (Apsler et al., 1999; Fell & Voas, 2006a) and alcohol-attributable injuries (Fell & Voas, 2006b). A meta-analysis found that the alcohol-related crashes and injuries were reduced by 5-16% (Fell & Voas, 2006b). Furthermore, BAC laws are more effective when there are other administrative

[4] Utah uses a 0.05 BAC limit, as discussed in a following paragraph. Some states set lower limits for commercial drivers or young drivers.

measures to address excessive alcohol consumption. Winter et al. (2000) found BAC laws made a significant difference in states that already had administrative license revocation and/or license suspension laws in place.

Although the majority of the literature finds BAC laws to be successful in reducing fatal crashes (Voas et al., 2000, 2003), there is still mixed evidence (Freeman, 2007). Studies in both North Carolina and California found that the implementation of a 0.08 BAC limit had no effect on alcohol-related fatal crashes (Foss et al., 2001; Rogers, 1995).

There has been some discussion about reducing the per se BAC limit to 0.05. Research has suggested that drivers with a BAC of 0.05 have an increased risk of being involved in fatal and non-fatal alcohol-related crashes, especially for younger and inexperienced drivers (Fell & Scherer, 2017; Fell & Voas, 2014; Howat et al., 1991). For instance, Zador et al. (2000) found that drivers with a BAC between 0.05 and 0.07 were associated with 4 to 10 times higher relative risk of being involved in a fatal crash In 2017, Utah became the first and only state to implement a per se BAC limit of 0.05. Thomas et al. (2022) found that after the establishment of a 0.05 limit in Utah there were fewer crashes and lower alcohol involvement in accidents.

Wagenaar et al. (2007) estimated that reducing the BAC limit to 0.05 in the US could prevent 538 alcohol-related deaths per year, and Fell and Scherer (2017) estimated that a reduced BAC limit could save 1,790 lives. However, there is mixed evidence of the impact of reduced BAC limits internationally. In 1988, Austria decreased its BAC limit to 0.05 and this reduction has been found to be associated with a 9.4% decrease in alcohol-related crashes (Bartl & Esberger, 2000), but a similar reduction in the BAC limit in Scotland was not found to have a significant effect (Haghpanahan et al., 2019).

3.2. Minimum legal drinking and zero tolerance laws

Another important alcohol-related policy is the minimum legal drinking age (MLDA). While the legal drinking age in the US has varied by state, and changed over time, since 1988 all states have had a MLDA of 21 years of age. Overall, MLDA laws have been found to be one of the most effective efforts to reduce drinking and driving (Wagenaar and Toomey 2002). Wagenaar et al., (2010) find that increasing the MLDA from 18 to 21 was associated with a 16% reduction in alcohol-related traffic fatalities in younger populations. Quite a few other studies have also find that increasing MLDAs reduced alcohol consumption and traffic crashes (Carpenter, 2007; Carpenter & Dobkin, 2015; Voas et al., 2003; Wagenaar & Toomey, 2002).

There is also a compelling set of studies evaluating the impact of MLDAs on other societal outcomes. Joksch and Jones (1993) find that increases in MLDAs were associated with a decrease in vandalism and disorderly conduct. Carpenter and Dobkin (2009) use a regression discontinuity design and find that there is a large increase in drinking and alcohol related mortality shortly after a subject's 21^{st} birthday. Also, Carpenter & Dobkin (2011) estimate that reducing the MLDA in the US to 18 could be associated with three additional deaths per 100,000 population for 18-20 year olds.

Another related alcohol policy is zero tolerance (ZT) laws, which set very low BAC limits for drivers under 21 years old. In most states, ZT laws are set at 0.02 BAC for drivers under 21. A large literature found ZT laws to be associated with a significant reduction in motor vehicle crashes for teenage drivers (Blomberg & Dunlap and Associates, 1992; Carpenter, 2007; Hingson et al., 1989, 1994). Liang and Huang (2008) find the implementation of ZT laws was associated with a 7% reduction in the likelihood of drinking away from home and also reduce drinking and driving among college students. Also, Voas et al. (2003) find ZT laws contributed to a 24.4% reduction in drivers with positive levels of BAC younger than 21 who were involved in fatal crashes.

Recent studies have highlighted other societal benefits. ZT laws have been associated with a reduction of property crimes and an increase in the fraction of 18-20 year old males arrested for drinking and driving (Carpenter, 2005, 2007). Additionally, ZT laws have effectively reduced nuisance crimes like disorderly conduct and public drunkenness (Carpenter, 2005). Of note, the majority of reductions in binge drinking were for young males and the evidence of the effect for females is more mixed (Carpenter, 2004).

3.3. Dram shop laws, overservice laws and restricted sales on Sundays

Dram shop laws assess servers with some of the liability of damages caused by an intoxicated person. Overservice laws prohibit alcoholic beverage sales to an intoxicated person. As policies to mitigate alcohol related harms, these laws are designed as incentives for alcohol outlets (e.g., bars, restaurants, and taverns) and their employees to prevent alcohol-related harms. Dram shop laws have been found to be associated with reduced alcohol consumption per capita (Scherer et al., 2015) and reduced fatal crashes (Eisenberg, 2003; Scherer et al., 2015; Young & Likens, 2000). Rammohan et al. (2011) examined eleven studies looking at associations between dram shop liability laws and several outcomes and found a 6.4% median reduction of alcohol-related motor vehicle fatalities occurred in jurisdictions with these laws.

Alternately, the Task Force on Community Preventive Services (2011) found inconclusive evidence of the effectiveness of overservice laws on mitigating the negative consequences of excessive drinking. Similarly, Romano et al. (2015) found that dram shop laws do not have a significant effect on alcohol-related crashes for teens.

Sunday sales restrictions have also been used as a policy to reduce alcohol consumption. However, the evidence of their success is mixed. Dee and Evans (2003) found restricting alcohol sales on Sunday lowered alcohol-related traffic fatalities. Carpenter and Eisenberg (2009) found the repeal of restrictions on Sunday sales were associated with a 7 to 15 percent increase in drinking on Sundays, but not an overall increase in drinking. Lovenheim and Steefel (2011) found that restricting Sunday sales had no significant effect on fatal accidents.

4. Market-Based Mechanisms to Reduce Alcohol Related Harms

Another important method that can be used to reduce alcohol-related harms is government intervention in alcohol markets. From an economic perspective, the motivation for intervention in alcohol markets is that alcohol causes negative externalities which is to say that when alcohol is consumed by an individual, costs to a third-party may be incurred that were not a part of the consumption decision. For instance, an impaired driver may not consider the expected costs of their alcohol consumption (and driving) decisions on other drivers on the road. In unregulated markets, these extra costs that are not incorporated into alcohol markets, nor the price of alcohol, which results in a market failure, or a situation where a market allocates resources inefficiently.

4.1. Liquor licenses and the impact of alcohol outlet density on societal outcomes

One market mechanism that can be used to reduce alcohol-related harms is limiting the number of establishments that can sell alcohol. This often takes the form of establishing a limited number (or quota) of transferable retail licenses. Economic theory suggests that limiting the number of liquor licenses will impact societal outcomes in multiple, and sometimes unintended, ways. On one hand decreasing the number of outlets will increase the average distance to an alcohol outlet. This increase in transportation costs should decrease the number of individuals who go to alcohol outlets and thus reduce overall alcohol consumption and related harms. However, average driving distance to an alcohol outlet will increase, which could increase the probability of alcohol related traffic accidents for the individuals that continue to go to alcohol outlets.

Overall, studies have found that there is a positive association between alcohol outlet density and alcohol consumption (Blake & Nied, 1997; Gruenewald et al., 2022; Hoadley et al., 1984; McCornac & Filante, 1984; Xie et al., 2000). A number of studies have found that increased on-site alcohol outlet density increased the number of alcohol-related motor vehicle accidents in California (McCarthy, 2003; Ponicki et al., 2013; Scribner et al., 1994; Treno et al., 2007). Escobedo & Ortiz (2002) found that an increase in alcohol outlet density has been associated with higher alcohol-related motor vehicle accidents in New Mexico. Some studies found that increases in off-site liquor license density were also associated with reduced alcohol-related traffic fatalities (McCarthy, 2003; Ponicki et al., 2013).

There is also a positive relationship between alcohol outlet density and crime (Chamberlain, 2014). Alcohol outlet density has been found to be positively associated with both nonviolent (Toomey et al., 2012) and violent crime (Anderson et al., 2018; Mair et al., 2013; Zhu et al., 2004). An increase in alcohol outlet density has been found to increase homicides (Scribner et al., 1999) and in disorderly conduct (Twinam, 2017). Alcohol outlet density has been found to increase domestic violence (Livingston, 2011) and sexual assault (Anderson et al., 2018), particularly male-to-female partner violence (McKinney et al., 2009).

There is also a positive relationship between alcohol outlet density on health. Higher alcohol density rates have been shown to be associated with an increase in gonorrhea infection rates (Theall et al., 2009). Alcohol outlet density is also positively associated with suicide rates, especially among American Indian/Alaska Natives (Chatterji et al., 2003; Giesbrecht et al., 2015; Jennings et al., 2014; Johnson et al., 2009; Xuan et al., 2016). Escobedo & Ortiz (2002) found that increases in liquor license outlet rates in New Mexico were also associated with increased suicide rates.

4.2. Alcohol excise taxes

Another policy approach that can be used to reduce the negative consequences of alcohol consumption is alcohol taxes. The most common form of alcohol taxes are excise taxes, which are imposed on wholesalers of alcoholic beverages. In theory excise taxes will increase the price of alcohol, and thus should result in a reduction in the quantity of alcohol that is consumed. Also, an excise tax will bring revenue to the state and federal government.

Numerous authors have found that alcohol taxes reduce alcohol consumption. Esser et al. (2016) found Maryland's 50% increase to their alcohol sales tax resulted in a reduction of wine, spirits and beer sales the following year by 2.5%, 5.1% and 3.2% respectively. However, previous literature also suggests that demand for alcohol is price inelastic and consumers are not as responsive to price changes (Ayyagari et al., 2013). This is particularly true for certain groups, like heavy drinkers, whose alcohol demand is less likely to be affected by price.

A number of studies have evaluated the impact of alcohol taxes on crime, particularly with respect to drinking and driving, yet the evidence remains mixed. For instance, some studies found increasing beer excise taxes leads to a reduction of alcohol-related traffic fatalities (Cook & Durrance, 2013; Ruhm, 1996). However, others have reported insignificant outcomes, especially in the long-run (Dee, 1999; Eisenberg, 2003; McClelland & Iselin, 2019). In terms of other types of crime, a number of other authors have found that alcohol taxes have reduced assaults (Cook & Durrance, 2013; Markowitz, 2005). Increasing excise taxes has had a small but significant effect on sexual assaults and homicides (Son & Topyan, 2011).

The impact of excise taxes on alcohol-related morbidity and mortality, violence, drug use, risky sex behavior, and suicide has also been studied. Overall, the literature consistently demonstrates that higher alcohol taxes are associated with a reduction in various alcohol-related morbidity and mortality rates, particularly the cirrhosis death rate (Herttua et al., 2008; Koski et al., 2007; Nelson & Young, 2001; Rush et al., 1986; Sloan et al., 1994; Smart & Mann, 1998; Wagenaar, Maldonado-Molina, et al., 2009), as well as a decrease in suicide rates (Markowitz et al., 2003; Sloan et al., 1994; Yamasaki et al., 2005). However, the evidence is more mixed for violence, risky sex behavior, and other drug use. While some studies suggest increasing alcohol taxes reduces certain types of violence (Grossman & Markowitz, 1999; Markowitz, 2000a, 2001; Markowitz & Grossman, 1998, 2000; Matthews et al., 2006), others report insignificant results (Herttua et al., 2008; Markowitz, 2000b, 2005). The impact of alcohol taxes on risky sex behavior appear to be contingent on the age and gender of the individual involved (Chesson et al., 2000; Grossman & Markowitz, 2002; Markowitz et al., 2005). Finally, alcohol taxes do not seem to have a significant influence on other drug use, such as tobacco and marijuana consumption (Jimenez & Labeaga, 1994; Pacula, 1998).

Besides reducing crime and negative health outcomes, one consistent benefit of alcohol taxes is the increase in government revenue. The funds generated from these taxes can be allocated to programs to address alcohol addiction, supporting educational campaigns, and bolstering DUI initiatives. Receipts from these taxes can play a crucial role in tackling alcohol-related issues and promoting public safety (Marron & Morris, 2016).

5. The Impact of a Change in New Mexico's Alcohol Tax on Alcohol Consumption and Tax Revenue

Recently the New Mexico legislature has considered changing alcohol tax rates in New Mexico. In the 2023 legislative session, New Mexico House of Representatives bill HB 230 would have imposed a per-drink tax on all alcoholic beverages. There were multiple proposals leading up to HB 230, including rates of five cents per drink and 25 cents per drink. This bill also would have directed all alcohol tax revenue to alcohol misuse prevention and mitigation programs. In this section we consider the impact that an increased tax would have on alcohol consumption in New Mexico and how much additional tax revenue would be collected.

5.1. Current alcohol taxes in New Mexico

The State of New Mexico taxes the production or importation of alcoholic beverages with the reporting requirements falling on distributors. The following figures are from 2018, the most recent year of complete data from the New Mexico Taxation and Revenue Department[5]. There are different excise tax rates for each type of alcoholic beverage, including rates applied only to products from small New Mexico breweries, wineries, and distilleries. Importers, distributors, and producers are assessed excise taxes based on volumes.

Excise tax rates for beer are $0.08 per gallon for very small New Mexico breweries, $0.28 per gallon for somewhat larger New Mexico breweries, and $0.41 per gallon for all other brewers, importers and distributors. The effective excise tax rate for all beer in 2018 was $0.39 per gallon.[6] Excise tax rates for wine are $0.10 per liter for small New Mexico wineries, $0.20 per liter for medium New Mexico wineries, $0.30 per liter for large New Mexico wineries, and

[5] https://www.tax.newmexico.gov/all-nm-taxes/other-reports-overview/monthly-alcohol-beverage-excise-tax-report/ Accessed 31 July 2023.

[6] The 2018 distribution of quantities and taxes at each rate are shown in the appendix.

$0.45 per liter for all other wine. The effective excise tax rate for all wine in 2018 was $0.42 per liter[6]. There are additional categories for cider, taxed at the same rates as beer. All 389,447 gallons of cider in 2018 were taxed at the highest rate, $0.41 per gallon, for total taxes of $159,673.

Fortified wines are wines to which distilled spirits have been added, increasing the level of alcohol per liter. Typical fortified wines are port, sherry, Madeira, and Marsala. The excise tax rate on fortified wines is $1.50 per liter. There were 97,526 liters of fortified wine taxed in 2018, for total taxes of $146,289. There are also multiple categories for distilled spirits, legally classified as spiritous liquor. There are lower rates for New Mexico distillers, but only the highest rate of $1.50 per liter was applied to all 14,059,923 liters taxed in 2018, for a total of $22,491,077 in taxes.

Table 1 presents the alcohol categories, taxable units and drinks per unit. The definition of a drink for each category has an interesting consequence: a standard drink of beer, cider, wine, fortified, or distilled spirits contains an average six tenths of an ounce of ethanol by volume.

Table 1 Alcoholic beverage categories and defined drink size.

Category	Typical alcohol by volume	Units	Drink size (fluid ounces)	Ethanol per drink (fluid ounces)	Drinks per unit
Beer/cider	5%	gallons	12	0.6	10.67
Wine	12%	liters	5	0.6	5.07
Fortified wine	20%	liters	3	0.6	8.45
Distilled spirits	40%	liters	1.5	0.6	16.91

Table 2 presents equivalent per-drink tax rates in 2023. Also included in Table 2 is the effective tax per ounce of ethanol. This is presented to show how much tax is for an equivalent level of alcohol consumption.

Table 2. Alcoholic beverage categories and effective tax per drink in 2023.

Category	Drinks per unit	Effective tax per unit	Effective tax per drink	Effective tax per ounce of ethanol
Beer	10.67	$0.39	$0.0366	$0.0609
Cider	10.67	$0.41	$0.0384	$0.0641
Wine	6.76	$0.42	$0.0621	$0.1035
Fortified wine	11.27	$1.50	$0.1331	$0.2218
Distilled spirits	22.54	$1.60	$0.0710	$0.1183

It is clear from Table 2 that there is heterogeneity in the effective tax per drink and effective tax per ounce of ethanol consumed. While the nominal tax rates for beer and cider are identical, the effective tax rate for beer is slightly lower due to lower tax rates on New Mexico-produced beer. The effective tax rates per drink for wine and distilled spirits are about double beer and cider. Fortified wine is taxed at a much higher level per drink than other types of alcohol, with an effective per-drink tax rate about double the tax rates on wine and spirits. See Section 6 for a discussion of excise tax rates nationwide.

5.2. Proposed tax

In its initial form, HB 230 proposed eliminating existing excise taxes on alcohol and replacing them with a $0.25 per-drink tax. The tax rate is indexed to inflation with no provision for periods of deflation. The bill does not specify how and when the per-drink tax is assessed or collected. The Legislative Finance Committee (LFC) report on HB 230[7] includes recommendations from

[7] https://www.nmlegis.gov/Legislation/Legislation?Chamber=H&LegType=B&LegNo=230&year=23

New Mexico Taxation and Revenue Department (NMTRD) that the new tax be assessed and collected in the same way as current excise taxes in order to reduce the cost and confusion of implementing the new tax[7]. As such, the per-drink tax would then be equivalent to an increase in the excise tax rates.

Any assessment of the impact of this proposal must first address changes in consumer and supplier behavior. In the next few sections we discuss how this tax will change consumer and producer behavior and how this will impact alcohol markets and tax revenue.

5.3. The elasticity of alcohol

Price elasticity is an economic measure of the extent to how much any variable of interest will change when the price of a good changes. The price elasticity of demand is an estimate of how much consumers will reduce their consumption of a good when its price is increased. Price elasticities of demand are expressed as a percentage change. It is well known in economics that as the price of a good increases the demand (purchasing preferences of consumers) will decrease. This is known as the Law of Demand. Thus, price elasticities of demand and will always be negative. For example, if a good has a price elasticity of demand of -0.33, it would mean that a one percent increase in price will result in a 0.33 percent decrease in the quantity demanded. An elasticity low in magnitude (as presented here) is referred to as inelastic and would mean that an increase in price has a relatively low impact on the quantity purchased. Thus, if the demand for a good is price inelastic, a tax would have a relatively small impact on the quantity that is consumed.

NIH reports alcohol price elasticities of demand that range from -0.30 to -0.55[8]. For comparison, NIH reports tobacco price elasticity of demand as -0.62[9]. There is also a price elasticity of supply - how much more of a good or service suppliers are willing to provide if the price goes up. This is always positive. If a good has a price elasticity of supply of 1.5, a one percent increase in price will result in a 1.5 percent increase in the quantity supplied. The relationship of price elasticity of demand to price elasticity of supply is important to understanding the market effects of taxation.

The low estimated price elasticity of demand for alcohol suggests that, as long as supply is not price inelastic, taxes will not affect the quantity of goods and services by very much. For example, using the NIH price elasticity of demand, a new tax that caused a 10 percent increase in the price of beer would result in a 3 percent reduction in quantity bought and sold, and nearly all the tax is paid by the consumer in the form of a nearly 10 percent higher price. From the policy point of view, this means that higher taxes can reduce alcohol consumption, but by less than most other goods.

The relationship of price to supply is difficult to assess but supply is known to be highly elastic for a commodity like beer because of economies of scale. This means that the cost of producing one more beer (the marginal cost, as it is known in economics) is near zero for a major brand brewer. There is also market-based evidence of variable elasticity of supply in the form of data on taxation pass-throughs (Ally et al., 2014). Pass-through refers to the ability of suppliers to pass tax increases through to the consumer, which is a consequence of a low price elasticity of supply and high price elasticity of demand. Research has found that, while suppliers do pass

[8] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3722038/ (accessed 14 August 2023)
[9] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7205055/ (accessed 14 August 2023)

alcohol tax increases to consumers, they do so by increasing the prices on expensive drinks by more than the tax increase, and increasing the price of cheap drinks by less than the tax increase (Alley et al, 2014). From the policy perspective, this means that efforts to reduce alcohol consumption through taxation are less effective for cheaper alcoholic beverages. This is further complicated by the effect of substitution.

When prices increase, consumers reduce the quantity they purchase and/or they buy a cheaper substitute. Substitution is a common consumer behavior and happens almost automatically in many cases. Big discount stores sell only a few brands, and will switch to different brands when relative prices change. In economics terms, this means that we cannot treat all goods as a single market but, rather, as a number of adjacent markets. The market for $200+ vintage wines is far away from the market for 24-pack canned beer, and there are many other markets for alcoholic beverages somewhere between them. The market for drinks served in bars is different from the market for alcoholic beverages sold retail, but some consumers will substitute from bar drinking to home drinking when prices increase[10]. Vintage wine buyers may or may not reduce consumption when prices increase (which depends on yet another thing, income elasticity of demand) but they are unlikely to shift to supermarket label wines. Consumers of inexpensive wines, however, are very likely to shift to a cheaper brand of wines.

5.4. The impact of alcohol taxes on consumption

All of the factors in the preceding sections contribute to the complexity associated with estimating the effect of tax increases on consumption. What can be said with some certainty is that:

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[10] https://partner.drizly.com/rs/802-UZD-868/images/Consumer%20Trend%20Report%202022.pdf (accessed 14 Aug 2023)

• Any percent reduction in consumption will be considerably less than the percent increase in prices due to taxes because demand is price inelastic and because consumers substitute to cheaper brands.

• Any reduction in consumption will have the smallest effect on cheaper alcohol because suppliers share more of a tax increase on lower-priced alcoholic beverages (less pass-through).

Research methods for determining price elasticity also capture some substitution effect, but how much is due to substitution is impossible to know. Substitution is related to the price elasticities of demand for similar goods.

The price elasticity of demand for a specific type of alcoholic beverage will be higher than the price elasticity of demand for all alcoholic beverages. This is because the specific alcoholic beverage will have close substitutes – similar brands – and more general substitutes – such as switching from distilled spirits to beer. The price elasticity of demand for all alcohol is low because there is no close substitute for an alcoholic beverage that is not another alcoholic beverage, although there is some recent research into the substitution of cannabis for alcohol with mixed results (Gunn et al., 2022).

5.5. Estimated price elasticity of demand for alcohol

There have been numerous studies over time evaluating the price elasticity of demand for alcohol in many different locations. We will be using elasticities from a meta-study of alcohol price elasticities of demand for alcohol by Wagenaar, Salois, and Komro (2009). A meta-study is a survey of many other studies, and the studies in this paper vary in scope, time, and locality. From this study, we will be using three types of measures of price elasticity of demand for each of beer, wine, and spirits, using the terminology of Wagenaar and authors.

The first measure is an average elasticity over all the studies identified by the paper, and will be referred to as the aggregate price elasticity of demand. This is a more general but less precise measure. The second measure is an average of only the studies in the paper that had strong statistical power, and these will be referred to as individual price elasticity of demand. For each of these – aggregate and individual – there are elasticities specific to beer, to wine, and to distilled spirits. The third measure from the meta-study is an average elasticity of demand from studies of heavy drinkers only. This measure is the same for beer, wine, or distilled spirits. Each of these measures may be appropriate to different markets, different populations, or over different time periods. The point of including them all is to illustrate the broad range over which actual price elasticities of demand could range.

The first thing to note from Table 3 is that alcohol is price inelastic in demand, meaning that alcohol consumption is not very responsive to changes in price. The second important thing to notice from Table 3 is that alcohol consumption for heavy drinkers is almost completely unresponsive to changes in price.

Table 3. Alcohol Price Elasticity of Demand Estimates.

Estimate type	Beer	Wine	Spirits
aggregate	-0.17	-0.30	-0.29
individual	-0.12	-0.14	-0.10
heavy drinker	-0.01	-0.01	-0.01

5.6. Current Alcohol Prices and Alcohol Pass Through Rates.

Another important component in understanding how alcohol taxes will impact alcohol consumption is current alcohol prices. These prices can be very different depending on whether an individual consumes alcohol at home or in bars and restaurants. In this section we collect alcohol price estimates that will be imputed into our future alcohol consumption change estimates. Price estimates are a bit informal, as there is no formal source for these estimates. We use price estimates for alcoholic beverages purchased for consumption off-site (package sales) which we call home price, and alcoholic beverages purchased for consumption on-site (bar or restaurant) which we call away price.

The retail price estimates in Table 4 are taken from informal online sources, as discussed in the following paragraphs. More formal price estimates, while difficult to obtain, could be included in future research on this topic.

Table 4. Alcohol Price Per Drink Estimates.

Place consumed	Beer	Wine	Spirits
home	$0.74	$2.29	$1.19
away	$7.00	$9.30	$10.60

The average price for a case of beer in Albuquerque is $17.66 (Martin, 2019), corresponding to a per-drink price $0.74. This is our estimate for the home price of beer. The average per-drink price for a beer in a bar in Albuquerque is $7[11]. This is our estimate for the away price of beer.

The average price for a bottle of wine in New Mexico is $11.43 per 750 ml bottle (Beauchamp, 2020). For five drinks per bottle, that represents $2.29 per drink. This is the home price for wine. The average price for a glass of wine at a bar or restaurant in New Mexico is $9.30 (Koebert, 2022). This is the away price for wine.

The price at Total Wine for a bottle of Jack Daniels whiskey in New Mexico is $18.99 for a 750 ml bottle[12]. For 16 drinks per bottle, that represents $1.19 per drink. This is the home price.

[11] https://www.expatistan.com/price/beer/albuquerque
[12] https://www.credello.com/financial-resources/trending/best-and-worst-states-to-buy-whiskey-in-us/

The average price for a Margarita at a bar or restaurant in New Mexico is $10.60 (Wright, 2022). A typical margarita has 3 ounces of distilled spirits, corresponding to two standard drinks, for $5.30 per drink. This is the away price. Pass-throughs are introduced in Section 5.3. They are a measure of how much of a tax increase the supplier is able to pass through to the consumer. We will also consider the cheap-drink pass-through rate of 85 percent as well as a 100% pass-through rate[13].

5.7. Estimating the impact of the proposed per-drink tax.

In this section, we estimate the impact that an alcohol tax will have on the alcohol that is consumed in New Mexico and the tax revenue that will be obtained. As discussed in the preceding sections, it is only possible to estimate changes based on somewhat national alcohol price elasticities of demand and general average alcohol prices.

Table 5 presents estimates for the percent change in beer consumption due to an increase in beer taxes. Using the current effective tax per drink from Table 2, the tax increase is $0.25 - $0.0621 = $0.1879. Estimates are presented for the price elasticities of demand in Table 3, the price estimates in Table 4, and both 85 percent and 100 percent pass-through.

Table 6 presents estimates for the percent change in wine consumption due to an increase in wine taxes. Using the current effective tax per drink from Table 2, the tax increase is $0.25 - $0.0621 = $0.1879. Estimates are presented for the price elasticities of demand in Table 3, the price estimates in Table 4, and both 85 percent and 100 percent pass-through.

Table 7 presents estimates for the percent change in wine consumption due to an increase in distilled spirits taxes. Using the current effective tax per drink from Table 2, the tax increase is

[13] Ally et al. (2014) find an 85 percent pass-through on the cheapest alcoholic beverages. They also find that pass-throughs on more expensive alcoholic beverages can exceed 100 percent.

$0.25 - $0.0710 = $0.1790. Estimates are presented for the price elasticities of demand in Table 3, the price estimates in Table 4, and both 85 percent and 100 percent pass-through.

Table 5. The quantity effects of a $0.2134 increase in per-drink tax on beer.

Price		Pass-through		Percent price change	Price elasticity of demand		Percent change in quantity
home	$0.74	high	100%	28.84%	aggregate	-0.17	-4.90%
					individual	-0.12	-3.46%
					heavy drinker	-0.01	-0.29%
		low	85%	24.51%	aggregate	-0.17	-4.17%
					individual	-0.12	-2.94%
					heavy drinker	-0.01	-0.5 %
away	$7.00	high	100%	3.05%	aggregate	-0.17	-0.52%
					individual	-0.12	-0.37%
					heavy drinker	-0.01	-0.03%
		low	85%	2.59%	aggregate	-0.17	-0.44%
					individual	-0.12	-0.31%
					heavy drinker	-0.01	-0.03%

Table 6. The quantity effects of a $0.1879 increase in per-drink tax on wine.

Price		Pass-through		Percent price change	Price elasticity of demand		Percent change in quantity
home	$2.29	high	100%	8.22%	aggregate	-0.30	-2.47%
					individual	-0.14	-1.15%
					heavy drinker	-0.01	-0.08%
		low	85%	6.99%	aggregate	-0.30	-2.10%
					individual	-0.14	-0.98%
					heavy drinker	-0.01	-0.07%
away	$7.00	high	100%	2.68%	aggregate	-0.30	-0.81%
					individual	-0.14	-0.38%
					heavy drinker	-0.01	-0.03%
		low	85%	2.28%	aggregate	-0.30	-0.68%
					individual	-0.14	-0.32%
					heavy drinker	-0.01	-0.02%

As Tables 5, 6, and 7 illustrate, the quantity reductions vary widely from 0.02 percent to 4.90 percent. This reduction applies to both forecast revenue and anticipated benefits from imposing a $0.25 per-drink tax. Because consumers and markets are adaptive, any initial effect will diminish over time.

Table 7. The quantity effects of a $0.1790 increase in per-drink tax on spirits.

Price		Pass-through		Percent price change	Price elasticity of demand		Percent change in quantity
home	$1.19	high	100%	15.08%	aggregate	-0.29	-4.37%
					individual	-0.10	-1.51%
					heavy drinker	-0.01	-0.15%
		low	85%	12.82%	aggregate	-0.29	-3.72%
					individual	-0.10	-1.28%
					heavy drinker	-0.01	-0.13%
away	$5.30	high	100%	3.38%	aggregate	-0.29	-0.98%
					individual	-0.10	-0.34%
					heavy drinker	-0.01	-0.03%
		low	85%	2.87%	aggregate	-0.29	-0.83%
					individual	-0.10	-0.29%
					heavy drinker	-0.01	-0.03%

Research finds that excessive alcohol consumption[14] costs New Mexicans $2.77 per drink (Sacks et al, 2015). These costs include deaths, other health costs, underage drinking, and drinking while pregnant. There are other social costs: crime, domestic violence, traffic accidents, etc. as discussed in Sections 2.2 and 2.3 of this report. So, while the $2.77 estimate is high – it is the highest among the U.S. states – the total social cost is much higher.

[14] Excessive alcohol consumption includes binge drinking (four or more drinks per occasion for women, five or more drinks per occasion for men); heavy drinking (more than eight drinks per week for women, more than 15 drinks per week for men); any alcohol consumption under 21 years of age; and any alcohol consumption by pregnant women.

According to Sacks, et al, the portion of the social cost that is borne directly by taxpayers is $1.13 per drink[15], noting that much of the other social costs are also born by taxpayers. In Table 2 we show that the current per-drink tax on beer is less than $0.03 per drink. Taking into consideration that tax revenue must also pay enforcement and prosecution of alcohol laws, it is clear that at either $0.03 per-drink or the proposed $0.25 per drink, alcohol tax revenue will fall far short of social costs by any measure. The question of what level of taxation would cover total social costs warrants a study focused on that question.

5.8. Summarizing the per-drink tax.

It is evident from preceding discussion that there are many unknowns when estimating the impact of the proposed tax change. Alcohol demand is price inelastic, with estimates of price elasticity of demand ranging from zero to -0.30, most of the estimates falling in the low end of that range. Alcohol consumption occurs both at home and away from home, with a substantial shift to at-home consumption since 2020[16]. Sellers can choose how much of a tax to pass on to consumers, tending to pass on as little as 85 percent of a tax increase for the cheapest beverages (Ally et al, 2014). Any effort to reach a conclusion must include this disclaimer: consumer responses to price changes in alcohol range from a very small reduction in consumption to no change at all.

The weighted price elasticities of demand in **Error! Reference source not found.** are computed using the individual price elasticities of demand from Wegenaar et al (2007) and assumptions of the pass-through and the ratio of home to away drinking. Ally et al (2014) find that the cheap pass-through of 85 percent applies to the lowest 15 percent of the price

[15] Of the total cost of excessive drinking, this is the share borne by the public that is then divided by the number of drinks sold in the state. In other words, the costs distributed across all drinks, excessive or not.
[16] https://www.statista.com/chart/27875/drinking-beer-at-home-vs-out/ (accessed 13 Aug 2023).

distribution. That represents 38 percent of all beer sales, 28 percent of all wine sales, and 31 percent of all sales of spirits. In 2022, 65 percent of alcohol was consumed at home, while 35 percent was consumed away[16]. The individual price elasticities are chosen because of their statistical power and because they near the middle of each range.

Table 8. Effective reduction in alcohol demand with 25-cent per-drink tax.

	Price elasticity of demand	2018 units sold (millions)	Drinks per unit	2018 drinks sold (millions)	Possible reduction in drinks sold (millions)	Percent possible reduction in drinks sold
Beer	-2.24%	43.18	10.67	460.7	10.33	
Wine	-0.84%	15.9	6.76	107.5	0.91	
Spirits	-1.05%	14.06	11.27	158.4	1.66	
Total				726.57	12.89	1.77%

The possible reduction in alcohol consumption shown in **Error! Reference source not found.** may result in a reduction in alcohol-caused harms. The impact is expected to be less than 1.77 percent because of the prevalence of heavy drinkers among the populations contributing to traffic fatalities, crime, and adverse health outcomes.

Any discussion of increased revenue for a tax increase must also address this 1.77 percent reduction in consumption. Increased tax revenue after accounting for reduced consumption is shown in Table 9.

6. Analysis on the Impact of Alcohol Taxes on Traffic Fatalities

As depicted in Figure 1, New Mexico exhibits higher rates of alcohol-related and alcohol-impaired[17] traffic fatalities compared to the national average. In 2021, the number of fatal

[17] See Section 2.2 for definitions of terms.

crashes with alcohol involvement rose to 157, marking the highest toll in at least a decade. The overall alcohol-involvement fatal crash rate (based on vehicles miles traveled) has increased four years in a row in the state (University of New Mexico, Geospatial and Population Studies, 2023). These statistics underscore the persistent issue of drinking and driving, as evidenced by the prevalence of alcohol-related and alcohol-impaired traffic fatalities. Therefore, in this section we analyze the impact an increase in excise taxes could have on traffic fatalities.

Table 9. Tax revenue from a 25-cent per-drink tax.

	Reduction in sales (thousands of taxation units)	Sales after tax is increased (millions of taxation units)	Number of drinks after tax is increased (millions)	Per-drink tax revenue ($millions)	2018 tax revenue ($millions)	Tax revenue increase
Beer	968	42.209	450.37	$112.593	$16.927	$95.666
Wine	133.9	15.761	106.544	$26.636	$6.676	$19.960
Spirits	147.2	13.91	156.766	$39.192	$22.491	$16.701
Total				$178.421	$46.094	$132.327

6.1. Alcohol-related and alcohol-impaired traffic fatalities

While there are a number of historic studies that have evaluated the impact of alcohol taxes on traffic fatalities, this literature is dated. Since most of this literature has been published there have been data improvements and empirical innovations that allow for a more careful evaluation of the impact that alcohol taxes have on alcohol-related fatalities. In this section we use state-level changes in alcohol taxes over time to analyze their relationship to alcohol-attributable traffic fatalities. We look specifically at beer excise taxes rather than taxes on wine and spirits, as beer consumption accounts for more than half of ethanol consumed in the US (LaVallee, 2012). In addition, beer taxes are more uniform and comparable across states (Xuan et al., 2015)

6.2. Data

To study the effect of state beer excise taxes on alcohol-related fatalities, data were collected from Fatality Analysis Reporting System (FARS), the Bureau of Economic Analysis (BEA), the Bureau of Labor Statistics (BLS), the Department of Transportation and the Census Bureau.

Data on alcohol-related and alcohol-impaired traffic fatalities from 1990-2020 were collected from FARS. The FARS provides comprehensive data on fatal automobile accidents in the US, it offers detailed accident-level and person-level information which includes alcohol-involvement, time and location of the accident, and the driver's BAC. As a result, we construct four different outcome variables: alcohol-related and alcohol-impaired traffic fatalities per 100,000 population and alcohol-related and alcohol-impaired traffic fatalities per 100 million vehicles miles traveled (VMT). We complement our fatality data with beer excise tax data was from the Urban-Bookings Tax Policy Center[18.] These data have been adjusted for inflation and are presented in 2020 dollars[19]. Data on income per capita, unemployment rates, gasoline tax rates and population by age distributions were obtained from the BEA BLS, and the Department of Transportation and the Census Bureau respectively.

Summary statistics for the constructed dataset are presented in Table 10. On average, state excise taxes were 38 cents per gallon for beer. Tennessee had the highest beer tax at $1.29 per gallon[20], and Wyoming had the lowest beer tax in our sample with $0.20 per gallon. Overall, beer taxes have been decreasing since 1990 and so have alcohol-attributable traffic fatalities.

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[18] The full alcohol excise tax data set and its description was created by the Urban-Bookings Tax Policy Center, see Alcohol Excise Tax Rates http://www.taxpolicycenter.org/ statistics/state-alcohol-excise-taxes.

[19] Excise taxes were adjusted for inflation using the U.S Bureau of Labor Statistics Consumer Price Index (CPI), to find U.S historical CPI data, see: https://data.bls.gov/timeseries/CUUR0000SA0

[20] In 2020, Tennessee had the highest beer tax at $1.29 without adjusting for inflation but Alabama has the highest beer tax per gallon adjusted for inflation at $2.08 (in 1990).

Both alcohol-related and alcohol-impaired traffic fatalities per 100,000 population and per 100 million VMT have a decreasing trend. However, the decrease in beer excise taxes has been minimal. On average, beer excise taxes have only decreased by about 16-cents per gallon through the 30-year sample period across states.

Table 10. Summary Statistics

Variable	Obs	Mean	SD	Min	Max
Outcome variables					
Alcohol-impaired fatalities per 100,000 population	1,581	4.84	2.37	0.47	15.86
Alcohol-impaired fatalities per 100 million VMT	1,581	0.48	0.21	0.08	1.55
Alcohol-related fatalities per 100,000 population	1,581	6.23	2.85	0.79	21.25
Alcohol-related fatalities per 100 million VMT	1,581	0.62	0.25	0.14	2.00
Outcome variables constructed by the authors					
LN alcohol-related fatalities	1,581	4.82	1.04	0	7.55
LN Fatal alcohol-related motor vehicle crashes (FARMVC)	1,581	4.58	1.00	0	7.30
Explanatory variables					
Beer excise tax	1,581	0.38	0.35	0.02	2.08
Unemployment rate	1,581	5.56	1.90	2.10	13.80
Share of population 15-24	1,579	0.14	0.01	0.11	0.20
Share of population 65 and older	1,579	0.14	0.02	0.04	0.22
LN Income per capita	1,581	3.51	0.36	2.60	4.45
Gasoline tax rate	1,580	30.23	10.17	2.30	96.19
LN population	1,581	15.06	1.03	13.02	17.49
LN vehicles miles traveled (VMT)	1,581	10.45	1.03	8.02	12.76

Note. We took the natural log of alcohol-related fatalities, FARMVC, income per capita per thousand, state population and VMT.

6.3. Methodology

Our empirical strategy is to employ a two-way fixed-effect (TWFE) ordinary least squares (OLS) model specified by

$$fat_{it} = \beta_0 + \beta_1 X_{it} + \gamma Z_{it} + \alpha_i + \lambda_t + \epsilon_{it} \quad (1)$$

where

fat_{it}	=	fatalities (see text) in state i and year t
X_{it}	=	beer excise tax rate (per gallon)in state i and year t
Z_{it}	=	vector control variables for state i and year t
α_i	=	fixed effects for state i
λ_t	=	fixed effects for year t

The dependent variable fat_{it} represents different measures for alcohol-related or alcohol-impaired fatalities: (1) alcohol-related traffic fatalities per 100,000 population, (2) alcohol-related traffic fatalities per 100 million VMT, (3) alcohol-impaired traffic fatalities per 100,000 population and (4) alcohol-impaired traffic fatalities per 100 million VMT. Following past work from Ruhm (1996) and McClelland and Iselin (2019), Z_{it} is a vector of control variables, including share of population ages 15 to 24, share of population ages 65 and older, personal income per capita, gasoline tax rates and unemployment rate. The inclusion of fixed effects allows us to control for state specific time-invariant characteristics and year specific state-invariant characteristics. In all models, standard errors are clustered at the state level.

6.4. Results

Table 11 presents the results of four models estimated using equation (1), which differ by outcome variable, and are as follows: (1) alcohol-impaired traffic fatalities per 100,000 population, (2) alcohol-impaired traffic fatalities per 100 million vehicles miles traveled, (3) alcohol-related traffic fatalities per 100,000 population, and (4) alcohol-impaired traffic fatalities per 100 million vehicles miles traveled. Our outcome variables for all models are rates and our beer excise tax variable is in dollars. Thus columns 1 and 3 can be interpreted as the impact of a $1 increase in beer excise taxes on alcohol-impaired and alcohol-related fatalities per 100,000 population and columns 2 and 4 can be interpreted as the impact of a $1 increase in beer excise taxes on alcohol-impaired and alcohol-related fatalities per 100,000 vehicle miles traveled.

Table 11. State level TWFE estimates for alcohol-impaired (AI) and alcohol-related (AR) traffic fatalities.

	(1) AI per pop	(2) AI per VMT	(3) AR per pop	(4) AR per VMT
Beer excise tax	-1.347***	-0.149**	-1.657***	-0.181**
	(0.475)	(0.0621)	(0.545)	(0.0702)
State FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
R-squared	0.871	0.839	0.875	0.847
N	1,579	1,579	1,579	1,579

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Note. See the text for descriptions of the dependent variables.

The first important finding from this analysis is that in all empirical models an increase in beer taxes is found to have significantly reduced alcohol-related fatalities. Thus, alcohol taxes can be used as a mechanism to reduce alcohol-related accidents and fatalities. To contextualize our results, we analyze the effect a $0.10 increase in per gallon beer excise taxes would have on alcohol-attributable traffic fatalities. On average, states impose a $0.38 tax per gallon of beer which makes $0.10 tax a feasible increase.

Using our parameter estimates from our empirical models, a $0.10 increase is associated with a reduction of 0.1347 alcohol-impaired fatalities and a reduction of 0.1657 alcohol-related fatalities per 100,000 population. The same tax increase is associated with a reduction of 0.0149 and 0.0181 alcohol-impaired and alcohol-related traffic fatalities per 100 million VMT. In 2020, this represents a reduction of approximately 1.1% alcohol-impaired and 1.4% alcohol-related traffic fatalities in the US. In New Mexico, the estimates suggest there would be 0.71% and 0.87% fewer alcohol-impaired and alcohol-related deaths[21]. To put this into perspective, even a

[21] In 2020, the fatality rate in NM was 18.90 deaths per 100,000 and in the US it was 11.78 deaths per 100,000 population. The fatality rate per 100 million VMT was 1.68 deaths in NM and 1.34 deaths in the US. Death rates were given to authors by the National Center for Statistics and Analysis (NCSA) via email (NCSARequests@dot.gov).

small increase in the per gallon beer excise tax can save lives. A $0.10 increase in the beer tax could have saved 2.84 lives in the state and 545 lives in the US in 2020.

Multiple robustness checks were implemented which confirmed our estimates. Notably, our main model assumes that excise taxes are an exogenous variable. This assumption that may not hold considering beer excise taxes can be correlated with time or state variant characteristic. Robustness checks included time trends and two other outcome variables commonly seen in the literature[22]. The first robustness variable represents the annual number of fatalities for which a driver's blood alcohol content (BAC) exceeds 0.01. The second robustness variable recreates a fatal alcohol-related motor vehicle crash (FARMVC) measure similar to what McClelland and Iselin (2019) constructed. Overall, we can see that, on average, an increase in beer excise tax reduces both alcohol-related and alcohol-impaired driving fatalities across all our specifications.

6.5. Discussion and conclusion

Overall, in this section we find robust evidence that beer excise taxes reduce both alcohol-related and alcohol-impaired traffic fatalities. Our estimates suggest that a 10-cent per gallon increase in beer excise tax would be associated with a reduction in 0.71% of alcohol-impaired and 0.87% of alcohol-related fatalities in New Mexico in 2020. Implementing this tax could have saved 2.84 lives in New Mexico and 545 lives in the US in 2020.

Common arguments against increases in beer taxes are that alcohol is an inelastic good or that when beer prices increase, consumers substitute beer with wine or spirits. Ayyagari et al. (2013) found demand for alcohol is inelastic, i.e. consumers are not responsive to changes in its prices. However, the results we estimate portray a different picture. Our estimates suggest that

[22] Robustness checks included in appendix.

when beer prices increase consumers are responsive to these changes as reflected by their drinking and driving behavior, resulting in a decrease in both alcohol-related and alcohol-impaired traffic fatalities. Were the demand for beer completely price inelastic, or if consumers were substituting beer with other types of alcohol like wine and spirits, that in itself would not change alcohol-attributable fatalities. The empirical result implies a change in behavior that reduces alcohol-attributable fatalities, whether or not that is due to reduced consumption.

Furthermore, it is important to note these estimates reflect the behavioral responses of the aggregate beer consumer. The behavioral response to a tax increase might be different for heavy drinkers or binge drinkers who might not change their behavior regardless of an increase in price. This is a topic for another study if the data become available.

Finally, since we are using an OLS model with TWFE, we are assuming beer excise taxes are an exogenous treatment which is a strong assumption. In addition, TWFE models assume homogenous effects across states and time. In other words, we are assuming beer excise taxes have the same effects in different states and in different years. These are two strong assumptions that might not hold. Additionally, FARS data are often missing information of whether alcohol was involved in an accident. Therefore, it is likely we are underestimating the effect of beer excise taxes on both alcohol-related and alcohol-impaired traffic fatalities. For these reasons, our estimates should be interpreted with caution.

Regardless of the empirical limitations, an increase in excise taxes is associated with a reduction of both alcohol-impaired and alcohol-related traffic fatalities across all our specifications, and these results withstand our robustness checks which are further discussed in the appendix. Excise taxes can be an effective policy to reduce the negative externalities that arise from excessive alcohol consumption like drinking and driving. In addition, a 10-cent increase in this tax would contribute to the state revenue and the funding that goes to DUI prevention and recovery programs would increase.

7. The Geographic Impact of Changes in Licensing Laws

State-wide, the increases in the number of alcohol retailers over the past 20 years has not, statistically, contributed to the number of DUI-related traffic fatalities. None of the variation in New Mexico fatalities shown in Figure 1 can be attributed to changes in the number of licenses during that time. One of the consequences of changes, however, has been the geographic redistribution of alcohol retailers. It is the goal of this section to assess any geographic correlations between the locations of alcohol retailers and the geographic distribution of DUI-related traffic fatalities.

New Mexico has a complex set of laws regulating licensing for the sales of alcoholic beverages. This began when the 21st Amendment U.S. Constitutional granted states control over alcoholic beverages. The various New Mexico regulations were consolidated and clarified in the omnibus Liquor Control Act of 1978 (60-3A-1 NMSA 1978). The preamble to the 1981 revision of the Liquor Control Act begins:

“It is the policy of the Liquor Control Act that the sale, service and public consumption of alcoholic beverages in the state shall be licensed, regulated and controlled so as to protect the public health, safety and morals of every community in the state”

The 1981 revisions implemented these mandates by prohibiting sales on Sundays or within 300 feet of a church or school. Population-based quotas that were imposed prior to NMSA 1978, in most cases, have been exceeded since their inception. For incorporated municipalities, the quota is not more than one dispenser’s or retailer’s license per 2000 inhabitants or major fraction thereof. For unincorporated areas of each county, not more than one dispenser's or retailer's license per 2000 inhabitants excluding incorporated municipalities within the county. This binding quota enabled licenses, known as dispenser licenses, to increase in value as population increased through what is termed quota rents in economics.

The number of dispenser-like licenses was increased on three occasions by the creation of canopy, lottery, and rural licenses. Prior to 1981, multiple businesses could sell alcoholic beverages using a single license provided they were all under the same roof (canopy). When that was rescinded, any unlicensed business operating under the old regulations was issued a new canopy license. Legislation enacted in early 1980s allowed for a small increase in the number of dispenser-like licenses to be distributed by lottery. New lottery licenses were only issued briefly, however, as the original laws imposing quotas were never amended so nearly all new licenses further exceeded quotas. Rural licenses are discussed below.

Three license types – dispenser, canopy, and lottery – allow for the sales of both packaged alcoholic beverages (package sales) and alcoholic beverage services (by-drink sales). They may be relocated within a local option district (a designated incorporated area or the surrounding unincorporated county) but may not be transferred between local option districts. Legislation enacted in 1981 provided for transfer between local option districts, but at the cost of losing the package sales component, losing some of their quota rents value. These inter-local licenses are primarily dispenser licenses in rural and small metropolitan areas acquired by restaurant chains operating full bar service in larger metropolitan areas or along major highways. Inter-local licenses are not subject to quotas in their destination local option district, but are counted in the determination of quota availability for future applicants. In effect, they always increased the extent to which the destination local option district was over quota.

To address the flight of licenses from rural areas, prior to NMSA 1978, legislation provided for rural dispenser (package and by-drink) and rural retailer (package only) licenses in rural areas that were under quota. These licenses are transferrable, but only within the unincorporated area of the same county, and not within ten miles of another licensed premises.

On 29 March 2023 there were 2,920 active liquor licenses in New Mexico. In this context, active means not expired. Some of those licenses were not in use at that time, either through voluntary suspension (change of ownership or location, damage or remodel, etc.), involuntary suspension (infractions, non-payment of taxes, etc.), or they were restaurants in transition (not yet opened, permanently closed but license had not expired, etc.). Table 12 shows the breakdown of current licenses by authors' classification. A table in the appendix gives specific State-assigned license types for each classification.

The number of active licenses since 2005 has been as high as 3,030 and as low as 2,766. Most of the fluctuation has been due to the coming and going of restaurants and their licenses. To this are added the new license types, discussed above, and one dispenser license was revoked in 2009.

Most of the inter-local licenses have moved from rural areas to urban areas. On average, the movement in inter-local licenses has resulted in a decrease of 0.122 licenses per 100,000 people in their origin local option districts, and an increase of 0.023 licenses per 100,000 people in their destination local option districts.

Table 12. Number of licenses by classifications on 29 March 2023.

License Classification	Number
Full license (package and by-drink)	919
Package only	75
By-drink only	414
Restaurant (beer and wine only)	653
Restaurant (beer, wine, and spirits)	100
Brewer	179
Distiller	50
Winegrower	128
Club	140
Delivery	41
Government	87
Manufacturer/blender	7
Travel (airlines, railroads, B&Bs)	17
Wholesale	110
Total	2920

Regressing alcohol-related traffic fatalities on liquor license density and population density, liquor license density does not contribute significant additional fatalities after accounting for population density. Regressing by local option district there is no local option district for which liquor license density contributes significant changes to fatalities.

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Appendix A

The full regression results corresponding to Table 11, including control variables, are shown in Table 1A. Among the State control variables, share of people 15-24 is positive and significant at the five percent level, and this is consistent with the literature. The State control variable income per capita is positive and significant at the one percent level. This is, as yet, unexplained.

Table 1A. State level TWFE estimates for alcohol-impaired (AI) and alcohol-related (AR) traffic fatalities.

	(1) AI per pop	(2) AI per VMT	(3) AR per pop	(4) AR per VMT
Beer excise tax	-1.347***	-0.149**	-1.657***	-0.181**
	(0.475)	(0.0621)	(0.545)	(0.0702)
Unemployment rate	-0.0358	0.000210	-0.0560	-0.00102
	(0.0635)	(0.00643)	(0.0822)	(0.00798)
Share of people 15-24	26.22**	1.908*	32.66**	2.374*
	(10.86)	(1.027)	(13.73)	(1.231)
Share of people 65+	-7.864	-0.314	-8.803	-0.189
	(11.30)	(1.240)	(13.41)	(1.466)
Income per capita	0.0936***	0.00842***	0.104**	0.00955***
	(0.0312)	(0.00272)	(0.0396)	(0.00355)
Gasoline tax rate	0.00139	0.000290	0.00250	0.000574
	(0.00632)	(0.000659)	(0.00726)	(0.000760)
N	1579	1579	1579	1579

Note. This data set contains FARS data from 1990-2020. The data set was complemented with data from the National Highway Traffic and Safety Administration, Urban-Bookings Tax Policy Center, and the U.S Bureau of Labor Statistics. The outcome variables are: (1) Alcohol-impaired traffic fatalities per 100,000 population; (2) Alcohol-impaired traffic fatalities per 100 million vehicles miles traveled; (3) Alcohol-related traffic fatalities per 100,000 population; and (4) Alcohol-impaired traffic fatalities per 100 million vehicles miles traveled. Standard errors clustered at the state level in parentheses.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Robustness checks

To test the robustness of our specifications we run two different models. For the first model, we test the main specification with the inclusion of time trends and for the second model we construct two other outcome variables that are commonly seen in the literature. An alternative to probe the robustness of TWFE estimators is to include state specific time trends (Pischke, 2005). We include time trends to our main specification shown in Table 11 and the estimates are shown in Table 2A. An increase in beer excise taxes appears to reduce alcohol-impaired and alcohol-related traffic fatalities per 100,000 population and 100 million VMT. The magnitudes of the reduction of alcohol-impaired and alcohol-related traffic fatalities are slightly smaller than those presented in Table 11 but they are overall similar. Nationally, a 10-cent increase in beer excise taxes could have saved between 408.56 to 485.66 lives involved in alcohol-attributable accident in 2020. In New Mexico, this robustness checks suggest this tax increase saved approximately between 2.62 to 3.11 lives involved in alcohol-attributable accident in 2020.

Even though the results and the magnitudes of the effect remain consistent, the model did lose some significance after the inclusion of time trends. All the estimates remain significant besides the one presented in column (2) of Table 2A. This suggests the changes of beer excise taxes might correlate with other trends in state-level traffic fatalities and it would not be possible to disentangle the causal effect of the tax policy by itself from the other underlying trends. However, controlling for state-specific time trends can actually be detrimental, especially when there is not sufficient sample period before the treatment started (Pischke, 2005). Since excise taxes have been continuously changing even at the start of our sample period, we might not have enough time before treatment for the state-specific time trends to yield useful estimates.

We create two other alcohol-related fatality measures using the person and accident level data from the FARS as robustness checks. For the description of the variables we created, see Section 6.4 of the report. The estimates using these outcome variables yield consistent yet more conservative results. Using equation (1), we estimate the same model using the natural log of alcohol-related traffic fatalities and the natural log of FARMVC as our outcome variables but we added the natural log of population and the natural log of VMT as controls. Table 3A presents these estimates and suggests an increase in beer excise taxes is associated with a decrease of alcohol-related traffic fatalities and alcohol-related fatal crashes. Throughout all the different specifications, an increase in beer excise taxes is associated with a decrease in all of our different measures of traffic fatalities and fatal crashes.

Table 2A. State level TWFE estimates for alcohol-impaired (AI) and alcohol-related (AR) traffic fatalities with time trends.

	(1) AI per pop	(2) AI per VMT	(3) AR per pop	(4) AR per VMT
Beer excise tax	-1.240*	-0.121	-1.474*	-0.148*
	(0.705)	(0.0738)	(0.843)	(0.0881)
Unemployment rate	-0.0678	-0.00474	-0.0769	-0.00511
	(0.0537)	(0.00514)	(0.0693)	(0.00621)
Share of people 15-24	12.87	0.374	17.68	0.577
	(11.31)	(1.220)	(13.62)	(1.395)
Share of people 65+	39.37**	3.182	49.37**	3.883*
	(18.43)	(1.918)	(22.70)	(2.195)
Income per capita	0.0819	0.00474	0.0957	0.00583
	(0.0533)	(0.00355)	(0.0666)	(0.00441)
Gasoline tax rate	-0.00214	-0.000593	-0.00151	-0.000533
	(0.00695)	(0.000726)	(0.00829)	(0.000842)
N	1579	1579	1579	1579

Standard errors in parentheses

Note. This data set contains FARS data from 1990-2020. The data set was complemented with data from the National Highway Traffic and Safety Administration, Urban-Bookings Tax Policy Center, and the U.S Bureau of Labor Statistics. State controls include unemployment rate, share of population 15-24 and 65+ and income per capita. The outcome variables are as follows: (1) Alcohol-impaired traffic fatalities per 100,000 population (2) Alcohol-impaired traffic fatalities per 100 million vehicles miles traveled (3) Alcohol-related traffic fatalities per 100,000 population (4) Alcohol-impaired traffic fatalities per 100 million vehicles miles traveled. All the specifications include time trends and state and year fixed effects.

* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3A. State level TWFE estimates for alcohol-impaired alcohol-related (AR) traffic fatalities and the natural log of FARMVCs.

	(1) LN Alcohol-related	(2) LN FARMVC
Beer excise tax	-0.372**	-0.302**
	(0.165)	(0.124)
Unemployment rate	-0.0326*	-0.0166
	(0.0170)	(0.0113)
Share of people 65+	-4.064	-1.461
	(2.956)	(2.044)
Share of people 15-24	4.850	4.682**
	(3.299)	(2.215)
Income per capita	0.0198**	0.0176***
	(0.00870)	(0.00529)
Gasoline tax rate	-0.00292	-0.00241
	(0.00222)	(0.00233)
LN population	0.790	0.416
	(0.538)	(0.348)
LN VMT	0.195	0.502*
	(0.444)	(0.271)
N	1579	1579

Standard errors in parentheses
Note. This data set contains FARS data from 1990-2020. The data set was complemented with data from the National Highway Traffic and Safety Administration, Urban-Bookings Tax Policy Center, and the U.S Bureau of Labor Statistics. State controls include unemployment rate, share of population 15-24 and 65+ and income per capita. The outcome variables are as follows: (1) Natural log of alcohol-related traffic fatalities (author'' calculations) (2) Natural log of fatal alcohol-related motor vehicle crashes (author'' calculations)
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Appendix B

Table 1B. Excise taxes on beer in 2018

Category	Excise tax rate	Gallons reported	Taxes collected	Effective tax rate
Beer	$0.41	40,827,154	$16,739,133	
Small NM breweries	$0.08	2,349,710	$187,977	
Medium NM breweries	$0.28			
Large NM breweries	$0.41			
Total		43,176,864	$16,927,110	$0.39

Table 2B. Excise taxes on wine in 2018.

Category	Excise tax rate	Liters reported	Taxes collected	Effective tax rate
Wine	$0.45	14,461,766	$6,507,795	
Small NM wineries	$0.10	1,188,799	$118,880	
Medium NM wineries	$0.20	244,861	$48,972	
Large NM wineries	$0.30			
Total		15,895,426	$6,675,647	$0.42

.

Appendix C

Table 1C. New Mexico state-assigned liquor license types (Part 1). See notes in Part 2.

Full license (package and by-drink)	
CANOPY	A permanent license*#(1)
DISPENSER	The original permanent license*#
LOTTERY	A permanent license*#(2)
RURAL DISPENSER	A permanent license*%
Package only	
RETAILER	A permanent license*
RURAL RETAILER	A permanent license*
By-drink only	
INTER-LOCAL DISPENSER	A permanent license*(3)
Restaurant (beer and wine only)	
RESTAURANT	Superseded by RESTAURANT A
RESTAURANT A	Restricted to owner/location@
RESTAURANT BEER & WINE	Superseded by RESTAURANT A
Restaurant (beer, wine, and spirits)	
RESTAURANT B	Restricted to owner/location @
Brewer	
SMALL BREWER	Can be relocated subject to size constraint @
SMALL BREWER OFF-SITE	Restricted to owner/location
Distiller	
CRAFT DISTILLER	Restricted to owner/location and size constraint
CRAFT DISTILLER OFF-SITE	Restricted to owner/location and limit of 3 per distiller
Winegrower	
WINE GROWER	Can be relocated
WINE GROWER OFF-SITE	Restricted to owner/location and limit of 3 per winegrower
Club	
CLUB	By-drink sales, restricted to owner
Delivery	
3rd PARTY ALCOHOL DELIVERY LICENSE	
DELIVERY PERMIT	

Table 2C. New Mexico state-assigned liquor license types (Part 2)

Government	
GOVERNMENTAL	By-drink sales by lessees in government facilities
Manufacturer/blender	
MANUFACTURER	Preceded some brewer, distiller, and winery licenses
RECTIFIER	
Travel (airlines, railroads, B&Bs)	
BED & BREAKFAST	By-drink sales with meals to guests only. Not transferable.
PUBLIC SERVICE	Airlines and railroads
Wholesale	
SMALL BREWER	
LIMITED WHOLESALER	No retail sales
SMALL WINE GROWER	
LIMITED WHOLESALER	None currently issued
WHOLESALER	No retail sales
WHOLESALER (BEER, WINE, SPIRITS)	No retail sales
WHOLESALER (BEER)	No retail sales
WINE WHOLESALER	No retail sales
Bottlers	
BEER BOTTLER	None currently issued
WINE BOTTLER	None currently issued

Notes

* Subject to quotas (see text). New licenses not being issued currently.
# Relocatable
% Relocatable to unincorporated areas not within 10 miles of another licensee
@ Subject to local option district restrictions on Sunday sales and/or relocation
(1) A relic of changes to laws that once permitted multiple businesses under one roof (canopy)
(2) A brief expansion of dispenser licenses awarded by lottery.
(3) A dispenser license allowed to move to another local option district, subject to regulations within the destination local option district. On transfer, the license loses the package sales provision. These are typically used by chain restaurants that also provide a full bar.