



Part II: The Marijuana Consumer

January, 2017

In Part II of our series exploring the developing industry of marijuana in America, we turn our focus to the consumer. In this installment, we will focus on identifying the population of consumers that will drive the growth of the cannabis industry. All of our future production and sales estimates will flow from the forthcoming analysis. At the moment, everyone believes that cannabis is going to be BIG business. The logical next question: How big is BIG?

The Vice Fund (Symbol: VICEX) from USA Mutuals has been investing in alcohol, tobacco, defense, and gaming industries since 2002. The emergence of a 'new' vice industry in cannabis has been, by far, the subject on which we receive the most questions from investors and advisors. Our goal with this series is to assist you in gaining a basic understanding of the financial, economic, political, and financial landscape of the developing marijuana industry. Along the way, these papers will also outline how USA Mutuals has positioned the Vice Fund to benefit potentially from these trends as the marketplace evolves over the next five to ten years. If you have not read our first paper on the legality of marijuana in America, please visit [here](#) to download a copy.

Summary

The alcohol and tobacco industries in the United States derive ninety percent or more of their sales from a relatively small group of 'core consumers'. For alcohol, there are 65.2 million of these core consumers, along with 36.8 million for tobacco. Our analysis indicates the cannabis market will have a similar consumer profile, with core consumers driving the vast majority of total sales. To that end, we have identified three groups of American cannabis consumers to watch as legalization and socialization proceeds. The first is the **current cannabis consumer**, totaling 20.5 million or 8.4% of adults. As legalization proceeds, we view the near-term **potential consumer** base with current social pressures at 34.9 million or 14.3% of adults (inclusive of the current cannabis consumer). Finally, we view the long-run, **socially normalized consumer** base driving cannabis in America to be a

staggering 58.8 million consumers, or 24.1% of adults. These numbers indicate that an extended growth trend is on the horizon for cannabis providers, and we intend to position the Vice Fund accordingly.

COMPARABLE AND CURRENT MARKETS

This paper will examine the structure of the alcohol and tobacco markets as a basis for estimating the potential consumer market for cannabis. We are dealing with three drugs that chemically reward users for consumption. This reward system biologically pressures heavy consumers to disproportionate levels of use relative to the average consumer. In alcohol and tobacco, the result is that relatively small groups of heavy users are almost exclusively responsible for the total sales of the industry, and we believe that cannabis will have a similar market structure. Given the disproportionate level of sales from heavy consumers, we will work to identify who is responsible for ninety percent or more of sales for an industry.

As a starting point, there is data about current cannabis consumption available from the Centers for Disease Control and Prevention (CDC) as well as the Substance Abuse and Mental Health Services Administration (SAMHSA). We will use this data to build our understanding of the demand potential of cannabis by comparing it to legal drugs in the form of alcohol and cigarettes.

Alcohol Consumption

After caffeine, alcohol is the most popular psychoactive drug in the United States. Outside of a failed 13-year experiment with prohibition from 1920-1933 (See the Teetotaling Years at right), the public has viewed alcohol as socially acceptable for decades. As a result, we see a much higher rate of alcohol consumption in the United States relative to other drugs we will be examining in this paper. Turning to the National Survey on Drug Use and

The Teetotaling Years

It is difficult to describe the far-ranging impacts that prohibition had on the United States. To this day, there is a nostalgia for Elliot Ness and his Untouchables versus Al Capone's Chicago Outfit. In terms of total actual consumption, prohibition was a success. Consumption dropped to as little as 30% of its pre-prohibition levels immediately after Congress passed the Volstead Act in 1920. When consumers adjusted with home brewing and distillation, and organized crime filled the void, consumption quickly climbed back to 70% of pre-18th Amendment levels. These are just estimates, and, generally speaking, that is all we have because, as everyone knows, Al Capone did not file taxes.

An interesting parallel between prohibition and cannabis today is what happened after repeal. The 21st amendment in 1933 did not cause a return to long term levels immediately. Americans kept to their temperance and consumption levels did not significantly rise until after World War II. Consumption did not catch the pre-prohibition levels until the 1970's. That analogy would indicate that legalization is only the first step of a decade plus period of growth for cannabis.



Health from 2015 published by SAMHSA, we focus on three types of alcohol use to evaluate the population of drinkers.

- Group One: Those who have consumed any alcohol in the past month. Here we find that 56% of Americans over the age of 18 fall into this category. That is 136 million adults. Based on data from Phillip Cook's book "Paying the Tab", we can estimate that these consumers account for 99.8% of the drinks consumed in the US, essentially the entire market.
- Group Two: "Binge Drinkers", or those who have consumed five or more drinks in one sitting in the past month (four for women). There are 65 million Americans who fall into this category, which is roughly 27% of adults.
- Group Three: "Heavy Drinkers" accounting for 7% of the adult population. These 17 million consumers have binged at least five times in the past month.

Taken together, these numbers mean that there are 70.7 million Americans who had a drink last month but did not binge. If we dig a little deeper to compare data from "Paying the Tab" with the SAMHSA report, we see that the top 30% of alcohol consumers are responsible for 97% of drinks consumed. In other words, unless you are the type of person who had multiple drinks in one sitting last month, you probably did not make a significant contribution to the total sales of the alcohol industry. Remember, we are trying to identify the population that drives the sales of the alcohol industry for comparison of to the developing cannabis industry. These 70.7 million consumers do not materially contribute to the sales of the alcohol industry so we are going to exclude them from our thought process.

Binge drinkers and heavy drinkers are essentially the market for alcohol in the United States. Within the context of this more socially acceptable drug, these 65.2 million consumers are willing to step a little further outside of social norms to consume large quantities of their drug of choice. Importantly, while the more regular heavy drinkers are less common at 26% (17 million), they accounted for about 74% of sales meaning that they dominate the sales of the alcohol industry, but we need both categories to reach our target 90%+ of sales which we will use to estimate the potential cannabis market.

Tobacco Consumption

Unlike the social acceptability of psychoactive drugs like caffeine and alcohol, nicotine's primary delivery method of cigarettes has been, with good reason, under a systematic marketing and tax system designed to discourage use. As a result, cigarette smoking rates have been falling for as long as there are records, back to the early 1960's. And after decades of reductions, the trend remains pointed downwards. A smoker, as defined from the CDC's perspective, is someone who has smoked over 100 cigarettes in their life and smokes every day, or almost every day. By this definition, the 2015 rate of adult smokers



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is 15.1%. Additionally, if we look SAMHSA's 2015 report, the number of adults who have smoked in the past month is higher at 20.9%. Taken together, we can say that about 36.8 million American adults (15.1%) are 'regular smokers' and estimate that a further 14.1 million Americans (5.8%) are less regular or 'social smokers'. As with the group we defined for alcohol consumption, these adults choose to step a little out of the social norm for their drug of choice. The difference compared to alcohol is that regular smokers are 72% of the smoking population meaning the majority of tobacco users in the past month were daily or almost daily consumers. The impact of the high percentage of daily smokers translates directly to our ninety percent of sales target for tobacco. If we are generous and assume that social smokers buy 1 pack a week, they would account for about 5% market share of the 267 billion cigarettes sold in the United States. The social and tax pressures on tobacco have driven usage towards core regular smokers (15.1%) who account for almost the entire market for cigarettes in the United States.

A Note on Medical Marijuana

Before we dive into current cannabis consumption, we would like to address medical marijuana briefly. While it is important in the transition to legalized marijuana, the medical marijuana market is relatively small compared to the total market potential. If we look at the medical marijuana market in the United States where it is legal at the state level, there are 1.2 million patients receiving licensed medical marijuana across the 21 states that have available data. That works out to an average of about eight patients per 1000 residents. If we use that as an estimate for the medical marijuana potential of the United States, that would be about 2.6 million patients nationwide. These patients are often the rallying call for the first steps towards normalization, yet you will see that that they are a small group even when compared to current consumers of cannabis.

Current Cannabis Consumption

The current market for cannabis can be identified with the detailed results in the SAMHSA 2015 report on marijuana. While it is probably inaccurate to assume that everyone who would consume legal marijuana in the United States currently does, it is a grounded starting point. With the current legal consequences and social stigmas in place, 10.2% of Americans 18 or older have consumed marijuana in the past month. That translates to 20.5 million adults and honestly prompts a question as to whether cannabis is even truly 'illegal' in the first place. Within that group of monthly cannabis users, 37% consumed marijuana on five or fewer days in the past month and 63% of monthly cannabis users consumed on 6 or more days in the past month. More importantly, 43% of monthly users consumed cannabis 20+ days in the past month indicating daily, or almost daily use. Please note that daily or near daily use is trending upwards among users. A study by the Journal of Drug Issues found that the proportion of marijuana users who smoke daily has grown. While one in nine marijuana users consumed daily in the early 1990's, it is now



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closer to one in three. Given the illegality of cannabis at the Federal level, this trend could be expected to accelerate in a legalized environment.

Overall, the consumer population of cannabis is trending towards more tobacco-style daily usage with total consumption more concentrated. For now, in comparison to the distribution of alcohol and tobacco consumers, it is reasonable to conclude that the population of 20.5 million monthly cannabis consumers is likely responsible for ninety percent of sales.

CANNABIS CONSUMER POPULATION POTENTIAL

In assessing the consumer population of cannabis, our goal is to identify the groups who we believe would drive ninety percent or more of sales under three different levels of social and legal acceptance. The cannabis consumers we are identifying would be the marijuana industry equivalent of the binge/heavy drinkers in the alcohol market and the daily/almost daily smokers in the tobacco market, and these cannabis consumers would be responsible for almost all sales in the marijuana industry.

1. Current user base – we have already identified this number as 20.5 million adults who have consumed cannabis in the past month. These consumers drive both legal and illegal sales now.
2. Near-term potential user base – the population of users who we could reasonably expect to enter the market within three years of legalization. We view this as the users who would consume cannabis with the same social stigmas and pressures but no legal ban.
3. Long-term potential user base – the population who we can reasonably expect ten years after legalization after a period of normalization of social views on cannabis. These consumers would face relatively few social stigmas and no legal risk.

Retention Rates

To identify the near and long-term potential consumer base of cannabis, we need to find a way to compare cannabis to drugs that face different levels of social stigmas and pressures. We will analyze the potential marijuana market in terms of *retention rate* of consumers who have ever tried alcohol, tobacco, or marijuana. Within each drug category, the retention rate is the number of users who have consumed a drug in the past month relative to the users who have tried that drug in their lifetime. In the United States, 86% of adults have tried alcohol at some point in their lives and the retention rate was 65% (those who consumed last month) demonstrating the great social acceptance of alcohol. For tobacco, the social stigmas and health concerns have pushed many to quit. As a result of



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these pressures, 63% of adults have tried a cigarette in their lifetime, yet only 33% of those adults had a cigarette last month. The difference in social pressures for these two legal drugs mean that if you have had alcohol in your life, you likely had a drink in the past month, yet if you have had a cigarette in your life you probably did not smoke last month.

When we look at marijuana currently, you add significant legal and acquisition hurdles to the social stigmas associated with it, which has had an understandable impact on the retention rate of cannabis. While 47% of Americans have tried marijuana in their life, only 18% of those adults have consumed in the past month. The greater difficulty in acquisition of marijuana is likely a large contributor to this as 28% of those adults have had it in the past year, a much higher yearly retention rate relative to the numbers that we see in alcohol and tobacco.

The SAMHSA report gives us good estimates for people who are willing to try these drugs at some point in their lives, and we will define this group as the *potential consumer population*. We view the different social pressures on alcohol and tobacco as a major factor in the different *retention rates* between the two. Applying different retention rates to the potential consumer population will allow us to estimate the size of the cannabis *consumer base* under different social pressures. We view the consumer base as our target group that could account for ninety percent or more of sales.

Near-Term Potential Cannabis Base

If Congress legalized marijuana across the United States tomorrow, there would still be stigmas associated with it. The prejudices are too well established and too ingrained in segments of the population to change without significant time under normalized regulation and social use. As we noted with alcohol in 'The Teetotaling Years' above, the alcohol industry felt prohibition's impact on consumption until the 1970's. It takes time for consumer attitudes to change. Additionally, we would expect there to be a significant push by national and state health organizations to discourage smoking cannabis.

Under these assumptions, our estimate of the near-term potential population of regular cannabis users who would drive ninety percent or more of total demand is based on two estimates. First, we look at the 28% of American adults or 31.8 million citizens who have consumed cannabis in the past year. These users have consumed marijuana despite whatever social stigmas may exist and whatever legal consequences that could follow. Second, we look at cannabis usage based on tobacco's profile. We would view the 47% of Americans who have tried marijuana in their lifetime as a good estimate of the potential consumer population at this time. We would apply the 33% retention rate of tobacco smokers, as it captures a user base associated with social stigmas yet no legal restrictions. This results in an estimate of 38.0 million or 15.5% of adults. Blending these estimates gives us a potential consumer base of 34.9 million or 14.3% of adults who would account for the vast majority of cannabis sales in a recently legalized industry.



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Long-Term Potential Cannabis Base

To estimate a long-term, steady-state population of cannabis users we will have to make a few assumptions. We anticipate that within five or ten years of legalized use, the public will change how it views and consumes cannabis in these areas:

1. The potential medical benefits of cannabis will become more scientifically proven, widely known, and accepted. This development could make cannabis more acceptable to try or regularly use than cigarettes.
2. We will assume that development of vaping and heat-not-burn will allow more socially acceptable use of these rapid onset alternatives to smoking. This is important because it allows rapid onset consumption without the large number of carcinogens involved with burning as well as avoiding the lingering aromas clinging to their skin and clothes as one gets with burn methods, a common complaint about cigarettes. (See Changes in Youth Smoking)
3. We will assume that other products enter the market to deliver cannabis in ways that are not supported by the small market that exists now. An example can be seen in Constellation Brands proposing to manufacture ready to drink marijuana beverages for the Canadian market.

Estimating this long-term steady state potential, we must start by adjusting the potential consumer population. The 47% of adults who have tried cannabis in their lifetime does not make as much sense, as the social norms we described will change and logically push that percentage upwards. If we look at

Changes in Youth Smoking Habits

Underage smokers may pick up the habit for a variety of reasons but they arguably have one common goal: don't get caught. And the easiest way to be caught is to smell like an ash tray.

The trend for high school students has been moving away from cigarettes. From 2011 to 2015, underage cigarette use dropped from 15.8% to 9.3%. A big win for health advocacy. This reduction has been offset by an astonishing increase in e-cigarette usage from 1.5% to 16.0% over the same period. These e-cigarettes are likely the most controversial development in tobacco in years. These products do not leave an odor on users because there is no tar associated with using the product. Perfect for youth smokers who do not want to be caught. They also do not produce the carcinogens associated with smoking as there is no burned tobacco, though there is limited data on whether they are safer or not at this point. The biggest concern is that that they may make users more likely to start smoking.

Whatever the outcome of this debate, the technology can, and has, been transferred to cannabis and will likely be popular with those who would prefer to keep their use more anonymous as high school smokers have in recent years.

younger groups of users who generally do not have the same social concerns with cannabis as do older consumers, we see that those who try marijuana do so at a rate comparable to tobacco. In the group of 18-to-25 year-old adults, 52.7% of have tried marijuana and 53.3% have tried tobacco. Given the similar rate, we would view the population of individuals willing to try cannabis in the long-term to be closer to the 63% of tobacco than the current 47% of cannabis. A blend of these two number gives us a conservative potential consumer population estimate at 55% of adults, very similar to the 53% observed in the group aged 18-to-25.

If we look at the retention rate of marijuana in the overall population, it is low at 18%, which is not surprising given its illegality and the fact that it is more difficult to obtain than alcohol or tobacco. Under our long-term legal and socially normalized scenario, the retention rate of marijuana in the overall population should also rise. We return to a younger population set to see what the potential retention rate would look like. In the 18-to-25 age group, the retention rate of marijuana users is 37.6%. We would view this as the low end of retention for two reasons. First, the retention rate is even higher at 44.6% in underage cannabis users, indicating possibly greater social acceptance to come. Second, the tobacco retention rate in the 18-to-25 year-old group is 50.1%. We view this age group as more willing to ignore the social stigmas and pressures to quit smoking, and we would view the retention rate of tobacco in 18-to-25 year-old adults to be a conservative estimate of the high end of retention rate in marijuana with reduced social stigmas. A blend of these retention estimates in the 18-to-25 year-old age group results in an estimated retention rate for social accepted marijuana of 43.8%. If we use that estimated retention rate with our 55% potential consumer population estimate, we find the long-term consumer base driving 90%+ of sales to be 58.8 million or 24.1%. 58.8 million cannabis consumers in the United States would represent an 84% increase over the number of users in the past year and would be about 7.8 million more users than cigarettes.

Conclusion

When we look at the alcohol and tobacco market, we see that sales of these drugs are concentrated in particular groups. For alcohol, binge drinkers represent 26.8% of the adult population and represent well over 95% of sales. For tobacco, regular smokers are 15.1% of the population and we estimate them to be responsible for 95% of sales. Understanding who drives the sales of these vices is key to evaluating the market potential of cannabis. The data indicates that 10.2% of the population is responsible for sales today. In the event of legalization that should grow rapidly to 14.3% of adults. Long term, we would expect usage to grow to 24.1%.

Please be on the lookout for our next installment: The Sales Potential of Marijuana in America



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If you would like to know more about how we invest or if you have any questions about the Vice Fund or USA Mutuals, please contact us at 1.800.MUTUALS, email at FA.sales@usamutuals.com, or visit us at www.usamutuals.com.

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