GreenWave
ADVISORS

The GreenWave Report

Executive Summary

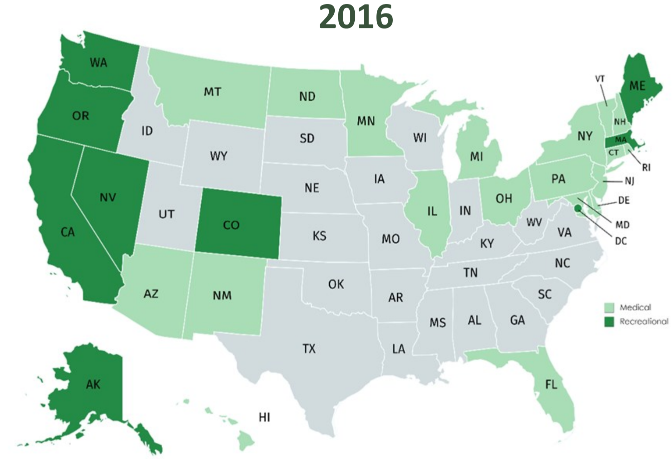
State of the Emerging Cannabis Industry

Current Trends and Projections

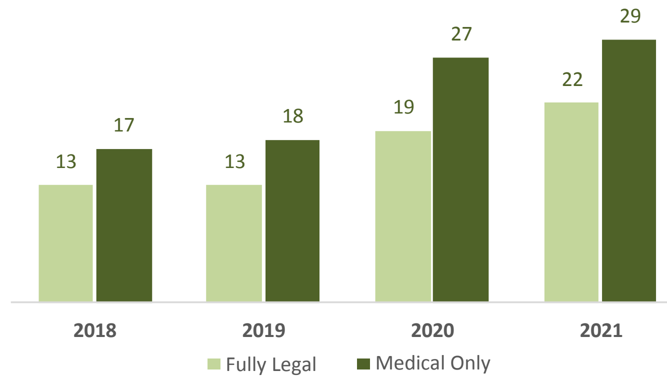
April 2017

Industry at a Glance

2016



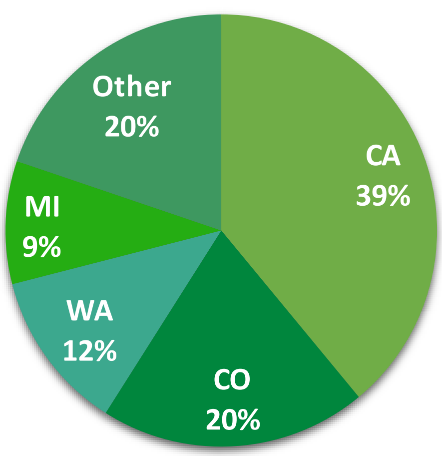
Projected State Counts of Legal Marijuana Markets (Incl. DC)



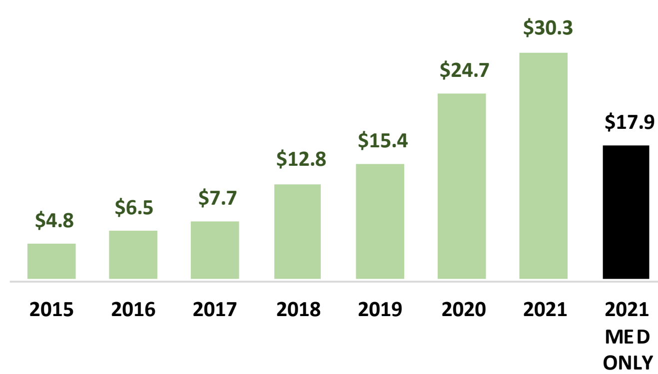
$6.5B
From 20 jurisdictions in 2016

$30B
All jurisdictions by 2021

2016 State Market Share



U.S. Retail Marijuana Sales Projections
($ Billions)



~26.3M	$3,200	~30M	$1,500
Potential Patients (Medical)	Average Patient Spend/Year	Active Users (Recreational)	Average Consumer Spend/Year

Source: GreenWave Advisors, LLC Estimates

Executive Summary

The cannabis industry made great strides in 2016 in progressing legislative reform. Ohio and Pennsylvania passed legislation to legalize medical marijuana and voters in 8 other states passed ballot measures (4 medical, 4 adult use) to modify existing marijuana laws. Most significantly, California, the nation's largest consumer market, will now permit recreational use in addition to its existing medical use permissions. Many other states have also moved forward in introducing legislation to modify existing laws.

Donald Trump's election as president has brought mixed messages to the cannabis investment community as his professed support for states rights and the concept of medical marijuana provides some encouragement, while his interest in federal acquiescence of recreational use remains lackluster. The appointment of marijuana foe Jeff Sessions as Attorney General has raised genuine concerns and fostered debate as to how policy will play out, although he has recently admitted that it will be difficult to implement a national crackdown on marijuana.

While the Trump administration ponders its marijuana policy, an overhang will persist that will likely relax capital deployment into the industry. Nevertheless, we remain optimistic that the cannabis industry will continue its upward trajectory, fueled by overwhelming public support and the inherent economic benefits in terms of jobs and tax revenues (including those derived from exporting product) that a legally regulated marijuana industry provides.

Concurrently with these political developments, although the DEA maintained cannabis as a schedule 1 in its classification, it adopted a new policy "designed to increase the number of entities registered under the Controlled Substances Act (CSA) to grow (manufacture) marijuana to supply legitimate researchers in the United States." Heretofore, research of marijuana and its chemical constituents has been limited to specimens supplied by a single source (University of Mississippi) under contract to the National Institute on Drug Abuse.

> **"Enabling developments could provide some measure of relief in income tax liabilities and banking."**

We recognize, however, that until such time as marijuana is rescheduled or delisted, banking and tax burdens (operating expenses are not tax deductible for cannabis businesses) will remain critical concerns for investors. Nonetheless, we see continuing developments that could provide some measure of relief.

1. More cannabis friendly banking under a Trump Administration. President Trump has expressed intent to deregulate banking and thus the compliance burden of Sarbanes Oxley will likely be minimized if not eliminated. This event could free up banking resources to focus on cannabis businesses (one of the main reasons many banks have rejected cannabis businesses is because of the heavy compliance burden).

2. Limited federal income tax relief under Section 280E as dual markets combine. As we have indicated in the past, physician participation in state medical marijuana programs has been lackluster which has hampered the growth of medical marijuana markets. Washington state has moved towards consolidating its medical and recreational markets with a "medical friendly" designation, that requires an in house certified medical marijuana consultant to issue a "recognition card." We believe that allocation of these related expenses to cost of goods sold should likely be permissible and provide some tax relief under section 280E. We would expect other states to follow this lead.

Source: GreenWave Advisors, LLC estimates

The public markets continue to mostly consist of penny stocks that trade with erratic liquidity and with more sensitivity to news flow and hype than to solid fundamental analysis. As the industry continues to evolve, we believe that the growth prospects of well established ancillary businesses will continue to drive investor interest into larger cap companies. For example, Scotts Miracle Grow, which has significant institutional ownership, surged ~50% in 2016. With California fully legal, we expect a heightened ramp in technology driven start ups to propel the next leg of industry growth, particularly as many accelerator programs attract higher caliber talent with more funding available.

Internal controls for tracking and monitoring product movements by licensed entities is becoming normative which has facilitated not only an increase in data but also better transparency of the reported sales results by each jurisdiction. Accordingly we have continued our research efforts in the collection and analysis of all available pertinent information. This has enabled us to provide another thorough analysis, state by state, of what we believe are the essential criteria requisite for a comprehensive understanding of the market potential for the retail marijuana industry.

- **$27 Billion federal income tax collections on retail sales under section 280E over the next 5 years.**
- **$18 Billion "medical marijuana only" market by 2021, should Trump actively challenge recreational use.**

Key Findings:

2016 retail marijuana sales in the U.S. approximated $6.5 Billion and up ~35% from $4.8 Billion in 2015 of which $1.8B was reported from states with recreational use markets and the remaining $4.7 billion is our best estimate of medical marijuana markets (most of these revenues are from California and Michigan which are unregulated). **In 2017 we expect growth of 18% to $7.7 Billion as new medical use markets come online.**

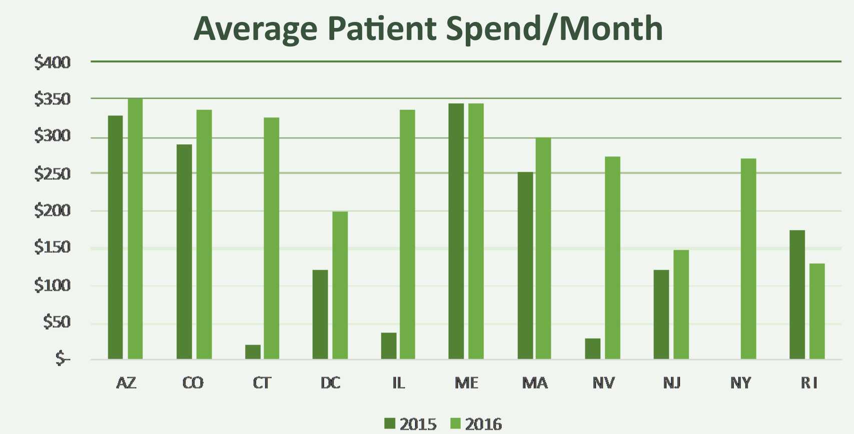
We note that in 2014 when we initiated our coverage of the cannabis industry, we anticipated California in our estimates and were the only firm to do so. Additionally, we highlight that our forecasting methodology has proven effective as results that are reported and measurable were largely in line with our estimates. Nonetheless, we have revised our forecasting methodology to incorporate consumer behavior intelligence (in select markets) provided by **Consumer Research Around Cannabis**, a newly established market research firm.

We reiterate our industry forecast of $30B by 2021 by which time we expect that all states will have either a medical only or fully legal marijuana market. Alternatively, should the Trump Administration actively challenge recreational use yet allow for each state to decide on medical marijuana regulation, **we expect $18 Billion in medicinal marijuana sales by 2021,** as we would likely observe a migration back to a less restrictive medical market should no alternative exist.

Federal income tax collections over the next 5 years could amount to $27B under Section 280E of the IRS Tax Code. This is based upon our anticipated trajectory of retail marijuana sales in the U.S., and assumes tax code 280E remains on the books. In the meantime, should 280E no longer apply, we expect a more favorable tax rate to attract additional capital which could offset the increased tax revenues from the higher 280E effective tax rate. As we have reported in our prior research, **we expect state tax revenues to be significant and likely exceed $4 billion by 2021** (on retail marijuana sales alone and does not include wholesale and ancillary businesses).

A continued disruption to medical use sales where a recreational use marijuana market exists. We have observed in our prior research that growth in patient counts is decelerating as new patient applications and cardholder renewals are declining in states where recreational use is available. While we do not intend to understate the importance or necessity of medical marijuana as an alternative treatment for many debilitating health conditions, there presently appears to be little distinction between the various designated medicinal use products and those offered in a recreational market. We do, however, believe that the medicinal use market will recalibrate when the pipeline of new, more targeted medications become available and as the medical profession gains more comfort in “pushing” a marijuana treatment rather than a patient having to “pull” a recommendation from a doctor. These may include products available only by prescription as well as over the counter nutraceuticals. Defining a precise timeframe for these developments is difficult, as legislation will lead to guidance which in turn will foster increased entrepreneurial and scientific efforts. With this maturity, we expect the medicinal use market to surge, particularly as foreign based companies leading the way in the research, development, and marketing of ailment specific treatments enter the U.S. market.

The beginning of what we characterize as a marijuana market metamorphosis, as states with both legalized medical and recreational use begin to evaluate the practicality of merged regulatory regimes. Our research suggests that the medical community’s participation has been insignificant, as only 4% of licensed physicians in existing medical marijuana states are registered to recommend marijuana to qualified patients thus inhibiting



Source: GreenWave Advisors, LLC estimates

the full potential of a medical market. Hence, we believe that it will be increasingly more difficult for medical marijuana sales to thrive in a dual market environment (particularly as our findings suggest that average monthly dispensary revenues are near half that of recreational retail outlets). It is logical to assume that regulatory oversight and enforcement will be less redundant, more cost efficient, and less confusing in a merged platform. We see this effort presently in Washington, Oregon and Alaska and expect that Colorado will soon follow. This trend is consistent with our thesis (“The GreenWave Report” October 2014) that “initially bifurcated marijuana markets will merge under a shared regulatory system into substantially larger enterprises.”

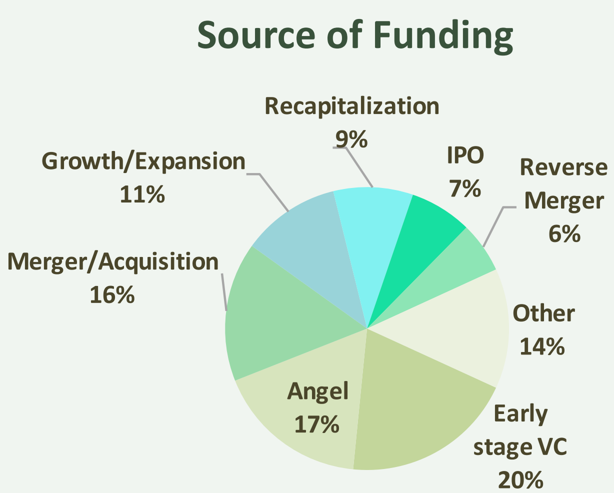
As California continues to evaluate how it will best concurrently regulate a medical and recreational market, we believe that it is possible that lawmakers will consider the practicality of consolidating these businesses in 2018. A combined California market would be significant, not only because of its sheer size, but also because it would be the first state to implement regulations for a fully legal market without initial oversight of

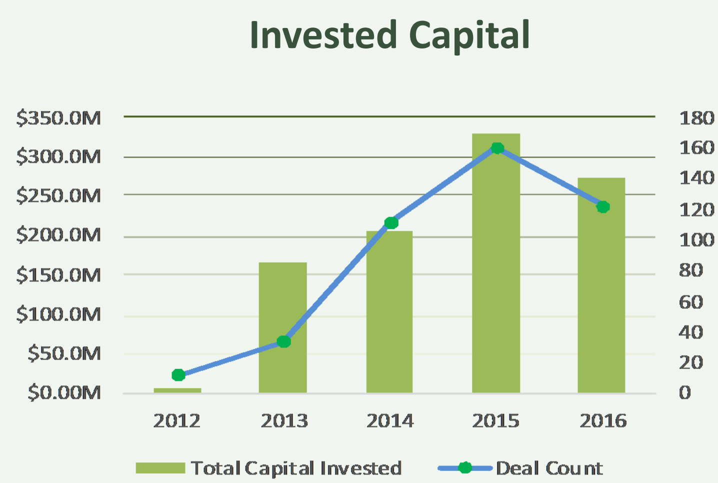
> **“Significantly we note the beginning of what we characterize as a marijuana market metamorphosis, as states with both legalized medical and recreational use begin to evaluate the practicality of merged regulatory regimes.”**

medical use purchases. This could serve as a catalyst for similar actions in Nevada, Massachusetts and Maine which are now commencing the implementation of their respective recreational use markets.

The infused product market and lab testing sectors continue to be well positioned for explosive growth. Based upon data provided by Brightfield Group, the infused product market is gaining significant market share, consistently accounting for approximately 30-50% of revenues in several regions. We would expect these businesses to benefit from margin expansion as the price of flower/trim decreases, assuming the unit costs at the retail level are held constant, along with all other exogenous variable inputs.

In addition, we continue to believe that uniform national testing and operational standardization protocols will eventually be implemented, thus making Lab Testing one of the most attractive sub-sectors within the marijuana eco system.





Source: PitchBook, Inc.

Not surprisingly, we observe a decline in black market activity as the availability of legalized marijuana expands. Based on wholesale pricing data from **Cannabis Benchmarks**, we estimate that currently, the illicit market in the U.S. is ~$36 billion which we determine based upon a multiplier of reported marijuana confiscations by the U.S. Border Patrol and quantities of plant eradications initiated by the DEA. Logically, we believe that legal sales will continue to cannibalize this illicit market.

Capital flow into the marijuana industry is steadily increasing as the risk/reward profile becomes more favorable. According to data provided by PitchBook, total capital invested into the cannabis industry since 2012 is ~ $1 billion. The average deal size has also increased from ~$0.5 M in 2012 to $2.2 M in 2016 with ~38% of the aggregate total funded by Venture Capital and Angel investors.

The average annual revenue per medical dispensary was $2.9MM and $2.1MM for a recreational retail store. Correspondingly, we estimate average spend per month was approximately ~$265 for a medical patient and ~$125 for a recreational user.

A New Industry is Emerging

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