Public Testimony - Center for Rural Pennsylvania

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January 15, 2026

To: Chairman Yaw, Vice-Chairmen Eddie Day Pashinski and Board of Directors Members of the Center for Rural Pennsylvania.

Thank you for the opportunity to present to you today.

My name is Beau Whitney. I am the founder and chief economist at Whitney Economics. Whitney Economics is a global leader in cannabis and hemp business consulting, data, and economic research, supporting hemp and cannabis operators, investors and regulators. We are based out of Portland, Oregon

The objective of this testimony is to provide an update on the marijuana and hemp industries from a state and national perspective as well as to discuss cannabis policies and the potential impacts they are having on the industry.

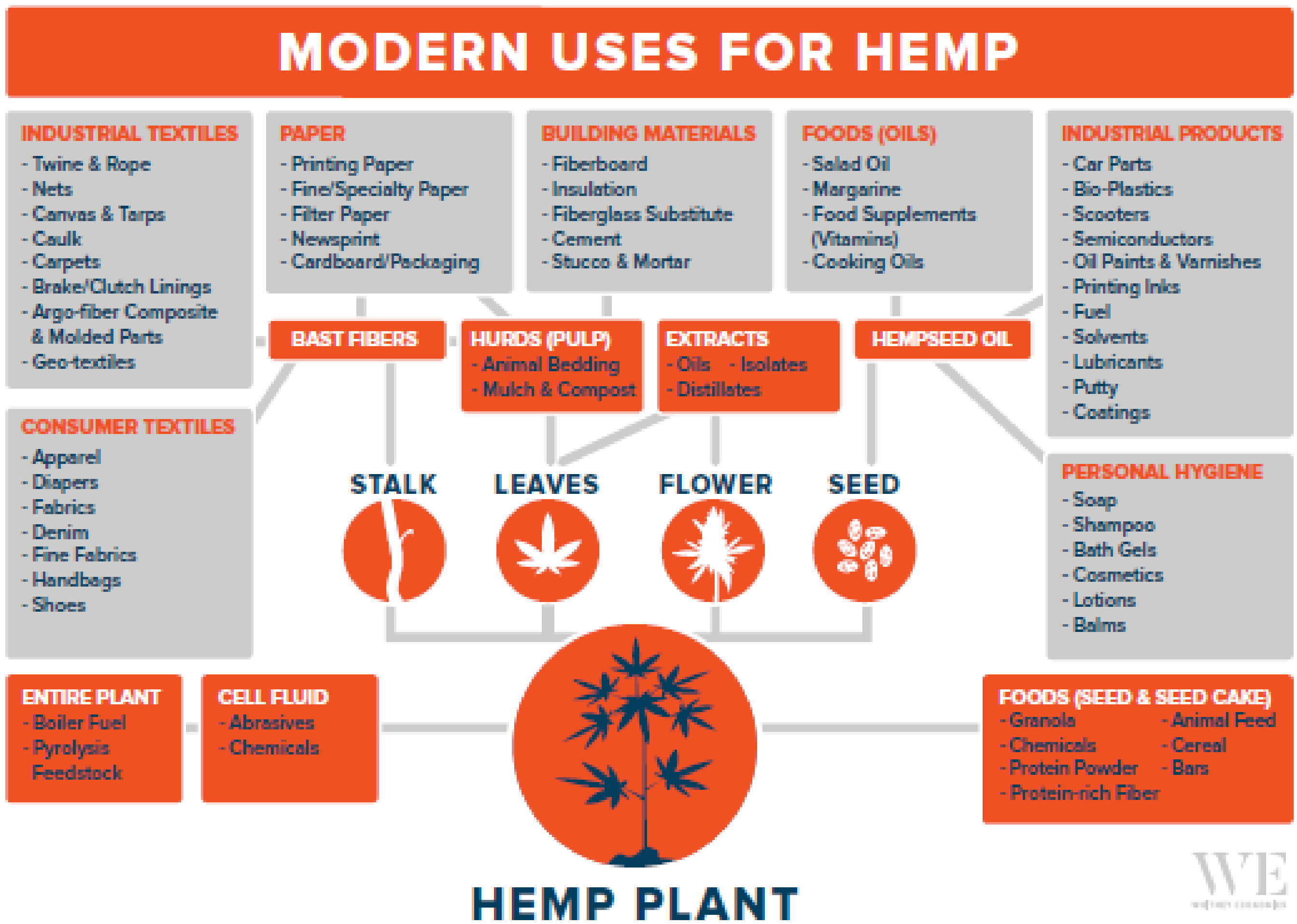
Disclaimer: It is important to note:
Whitney Economics does not take a position on the legalization of cannabis nor does it take positions on proposed legislation; however, it does derive revenue from cannabis and hemp related companies and stakeholders. The views, opinions, and positions expressed in this paper are those of its author Beau Whitney, and do not necessarily reflect the views, opinions, or official positions of any of our affiliated organizations, groups or clients.

About cannabis
Cannabis is actually three industries in one: Adult-use, Medical and Industrial. The industrial sector can also be broken into three markets: Fiber, Grain and Cannabinoid. In total, cannabis is a trillion-dollar global market in waiting. Cannabis is a tool for major economic growth. Most countries are waiting on the U.S. to legalize before adopting their own reform policies, especially on adult-use. However, the pace of U.S. reform has taken a long time in the U.S., so much so that it has opened the door for the EU to supplant the U.S. as the major driving force in global cannabis reform.

Cannabis is a global industry
Over 115 countries have legalized cannabis for either adult-use, medical or industrial purposes. The pace of reform is accelerating, driving increased international opportunities. The North American global influence is waning. The EU cannabis market is now in focus.

Hemp can support multiple industries
While many view hemp as a drug, there is an extraordinary number of uses for hemp-based products. The construction, automotive, plastics, textiles, medical industries all are currently supported by hemp. Due to the

number of viable applications, regulators have struggled to keep pace with hemp policy and how to establish a common set of rules. Hemp is best regulated at the product level, rather than try to regulate it at the farm gate.



Source: credit to "www.torontohemp.com / Toronto Hemp Company (THC) and Jack Herer"

The total potential market for hemp is significantly higher than the total market for marijuana
Given the number of applications that can use hemp inputs, the total addressable market for hemp is estimated to be in excess of $150 billion in the U.S. alone. In fact, it would take just 12 product groupings to achieve a market value of $150 billion. Globally is it a $500 billion to $600 billion market.

Estimated US Hemp Industry	U.S. TAM (USD$ Bil)	Potential Hemp Share	Hemp Value
Automobile parts	$ 199	20%	$ 39.9
Textiles	$ 467	5%	$ 23.4
Concrete Blocks	$ 655	10%	$ 65.5
Protein	$ 0	2%	$ 0.0
Seed Oils	$ 6	2%	$ 0.1
Hulled Seeds	$ 0.5	5%	$ 0.02
Lithium Batteries	$ 19	10%	$ 1.9
Plastic Bags	$ 5	2%	$ 0.1
Plastic Cutlery	$ 4	2%	$ 0.08
CBD Supplements	$ 15	33%	$ 4.8
Skin Care	$ 26	10%	$ 2.6
Energy Drinks	$ 24	10%	$ 2.4
Animal Feed	$ 92	5%	$ 4.6
Total -->	**$ 1,513**		**$ 145.4**

Sources: Multiple sources compiled by Whitney Economics

The potential economic impact of hemp is underestimated throughout the U.S.

Hemp market update

The U.S. industrial hemp market has been very cyclical. From 2014 – 2018, under the 2014 Farm Bill, hemp pilot programs started across the U.S. and opened the door for hemp reform. Pilot program research projects originally focused mainly on fiber and grains. Hemp-derived cannabinoids began to generate both research and commercial interest. Eventually, non-intoxicating hemp-derived cannabinoids, such as CBD, had market opportunities and with demand outstripping supply became a valuable commodity. At the end of the pilot program era in 2018, cannabinoid hemp made up roughly 60% of 78,000 total licensed acres.

The 2018 Farm Act was an inflection point for hemp

The passage of the 2018 Farm Act opened up the hemp industry by reducing a lot of the restrictions placed on hemp during the pilot program. The legislation also de-coupled hemp from marijuana, essentially de-scheduling it. With high prices for cannabinoid hemp and the cultivation, production and sale of hemp now legal, the number of acres licensed for hemp increased from 78,182 in 2018 to over 522,000 in 2019.

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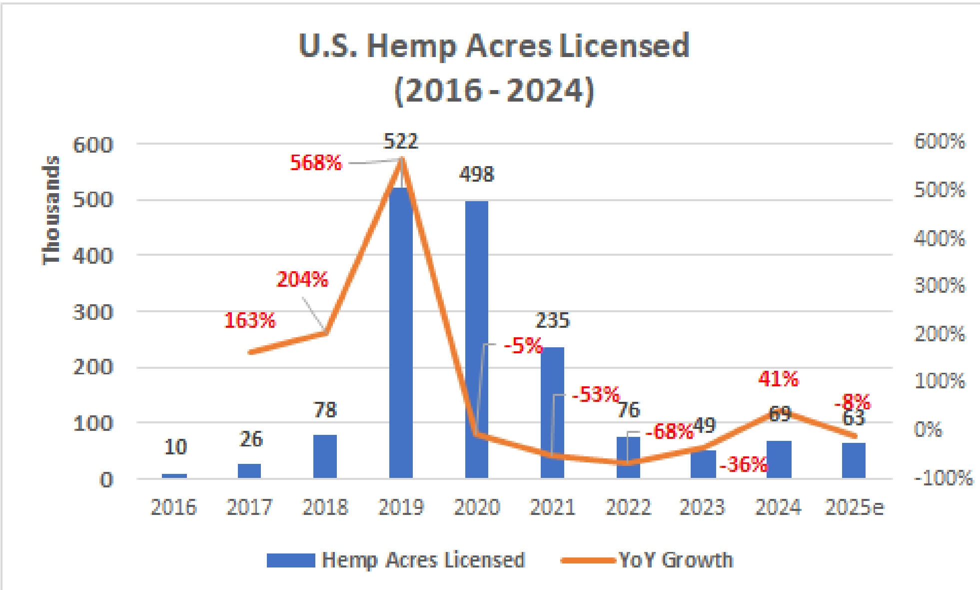
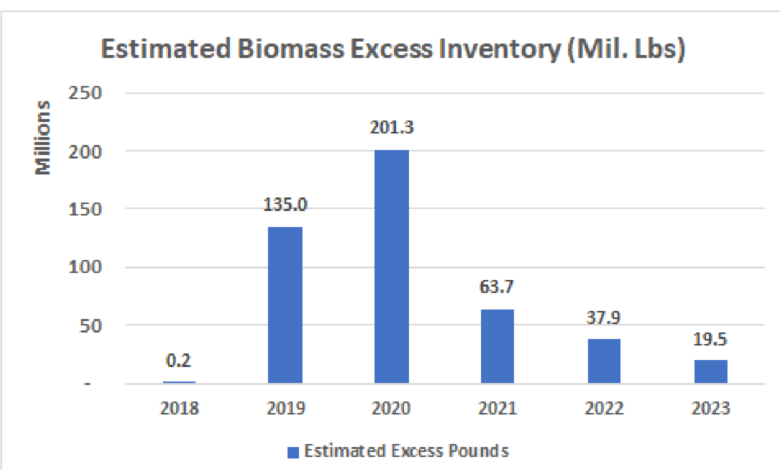


Source: Vote Hemp (2016 – 2018) Whitney Economics 2019 – 2025, State Departments of Agriculture

The surge in production overwhelmed the infrastructure

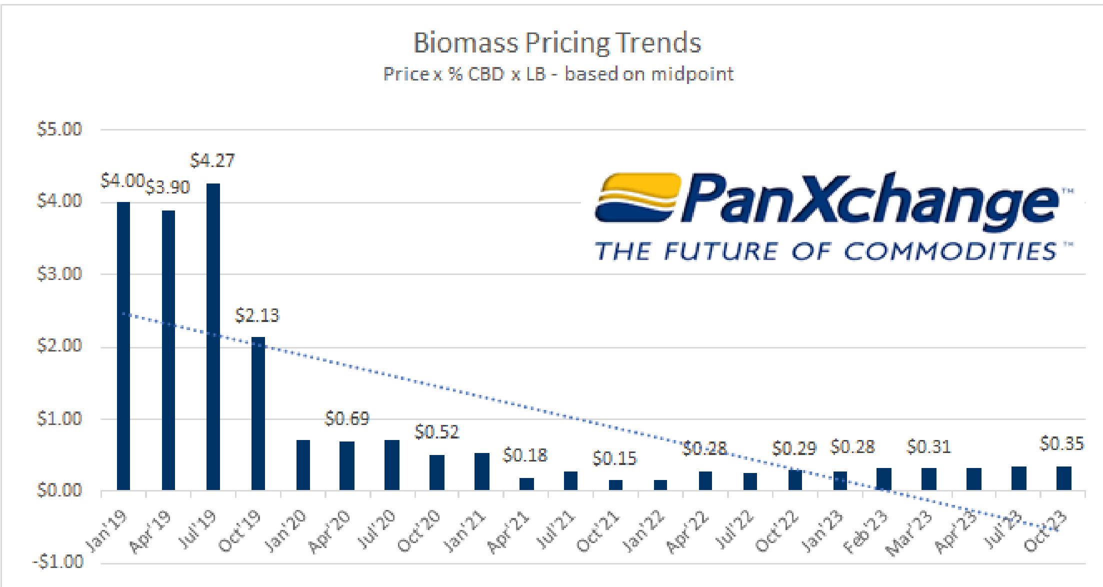
With so much hemp production occurring in 2019 and 2020, the output from the cultivation of hemp soon overwhelmed the industry's ability to process the crops and bring the products to market. As a result, there was an excessive amount of inventory and a collapse in pricing[1]. Based upon operator surveys conducted at the time, by 2021 there was over 201 million pounds of excess inventory of hemp biomass in the U.S. in addition to 1.6 million kg of excess CBD oil.



Source: Whitney Economics 2022 Business Conditions Survey

[1] Whitney Economics 2022 Hemp Industry Business Conditions Survey (Mar'22)

The excess inventory led to a collapse in pricing for cannabinoid biomass and oils
With so much supply in inventory, and a lack of infrastructure to process it, prices collapsed. At one point it was not uncommon to receive over $40.00 per pound for hemp cannabinoid biomass. Within 2 years, the price had declined to $1.50 per pound. Eventually the inventory was consumed and biomass prices have since stabilized. In fact, prices for hemp cannabinoid biomass have begun to increase over the past 18 – 24 months.



What happened to the inventory?
With prices collapsing to below the cost of production, farmers and processors looked for ways to monetize their inventory. One such innovation was the conversion of non-intoxicating CBD into intoxicating compounds such as THC. The market for hemp-derived cannabinoids served as quasi-replacement products for traditional marijuana and a new market was born. Based on a national survey of hemp operators and retailers in 2023, the total sales of hemp-derived cannabinoid products, both non-intoxicating and intoxicating, is between $28.4 billion and $35.0 billion annually[2]. This level of economic activity has continued and the market values have been reaffirmed again in 2025. Additional product offerings including hemp beverages also entered the market.

The hemp industry has a significant impact on the Pennsylvania economy
The total demand for hemp-derived cannabinoids in Pennsylvania is valued at between $791 million and $1.4 billion and represents 3% - 5% of the total U.S. market for cannabinoids. Pennsylvania cannabinoid industry represents a total employment opportunity of 9,516 workers earning $382 million in wages annually. Based on the standard sales tax, the Pennsylvania cannabinoid industry has the total tax potential of $49.3 million per

[2] Whitney Economics 2023 U.S. National Cannabinoid Report (Oct'23) www.whitneyeconomics.com/reports

year. Our firm feels this is a conservative estimate given that gas station and shopping mall demand was not included in these estimates.

Industry spotlight: THC beverages

One of the recent bright spots in the hemp industry has been the development and expansion of the THC beverage industry. With the decline in alcohol consumption, hemp-based THC beverages have help shore up an industry in decline. THC beverages have helped companies impacted by reduced alcohol consumption such as craft beer industry, distributors, liquor stores and the growth of the market is accelerating.

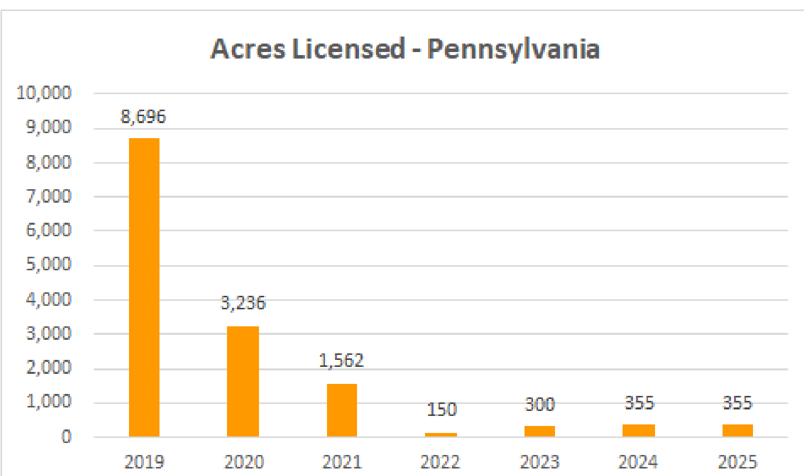
Below are a few facts about the U.S. and Pennsylvania THC beverage market:

- **U.S. Total Addressable Market for THC beverages is$9.9B - $14.9B**
- U.S. THC beverage sales in 2024 were estimated to be $1.0B - $1.3B
- **The Pennsylvania total potential market is for THC beverages is valued at $540 million**
- Pennsylvania rules on THC beverages unclear, with sales assumed to be only through medical dispensaries
- **Note: THC beverages account for less than 1% of total dispensary sales**

If sold via traditional distribution channels such as restaurants, bars and liquor stores, THC beverages (Derived from hemp) would represent $32.4 million in total potential Pennsylvania tax revenues.

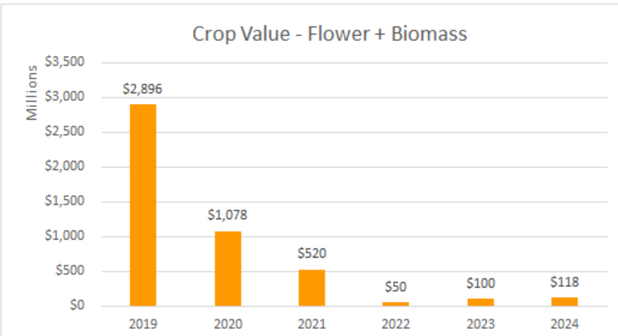
Pennsylvania hemp cultivation

Pennsylvania hemp cultivation is reflective of the broader U.S. market. There was a surge in acreage, a significant pull-back and then a modest recovery. Hemp acreage licensed has decreased from 8,696 acres in 2019 to 355 in 2025.

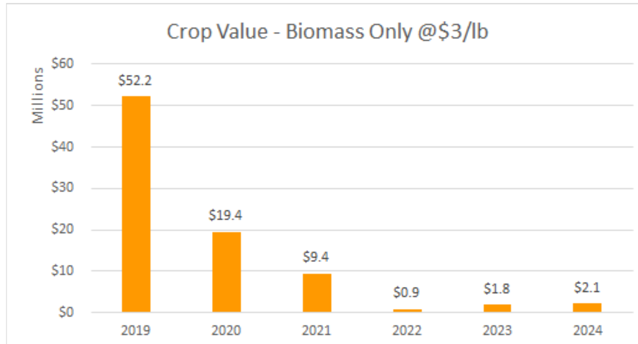


Source: Pennsylvania State Department of Agriculture, USDA

The farmers revenue opportunity has also declined since 2019, with the value of overall hemp crop in 2025 estimated to be worth $118 million with the sale cannabinoid flower and $2.1million without. At its peak in 2019, the value of the Pennsylvania hemp cultivation sector was $2.9 billion.



Source: Whitney Economics



Source: Whitney Economics

State and Federal hemp policy is a major influence on the market

Recent federal legislation changed the definition of hemp, the levels of THC that can be in a container as well as THC content in intermediary products. Although it is assumed that federal policy was intended to be focused on cannabinoids, current federal policy also affects the fiber and grain industry as the definition of hemp is much tighter and many fiber and grain crops will not pass compliance testing. Federal changes are already being discussed at the state legislative levels. For some reason, states tend to be digital in hos they regulate hemp; either implementing a total ban or having very low-touch, limited regulation. The hemp industry has been advocating for a more measured approach asking legislatures and policy makers for required testing, labeling and age gating in lieu of bans or prohibitions.

The impact of federal policy changes

If the current federal laws remain in place, it has the potential to displace 328,000 workers, reduce state tax revenues and increase state expenditures for unemployment and health care. There will also be impacts to ancillary industries as well from real estate, automotive, construction, plastics and food for human and animal consumption.

The clock is ticking for hemp

There is a general impression that the U.S. has until Nov'26 to adjust the current hemp policy, however farmers need to align labor by February to plant in spring. Given the timing required to plant the crop, the f**arming sector will be a leading economic indicator for the rest of the industry in terms over overall policy impact.**

Below is a summary of the impact of current state and federal policies

- **Farmers not planting** – Not confident that what they plant will still be legal at harvest.
- **Demand in Flux -** With so much uncertainty, it is tough to plan and enter into agreements.
- **Debanking** – Banks see too much risk, compliance monitoring increasing. Freezes in place for new accounts.
- **Investment funds scarce** – Uncertainty is increasing risks. Return not high enough to offset risks.
- **Infrastructure not being built** - Lack of infrastructure is suppressing grown and market opportunities.

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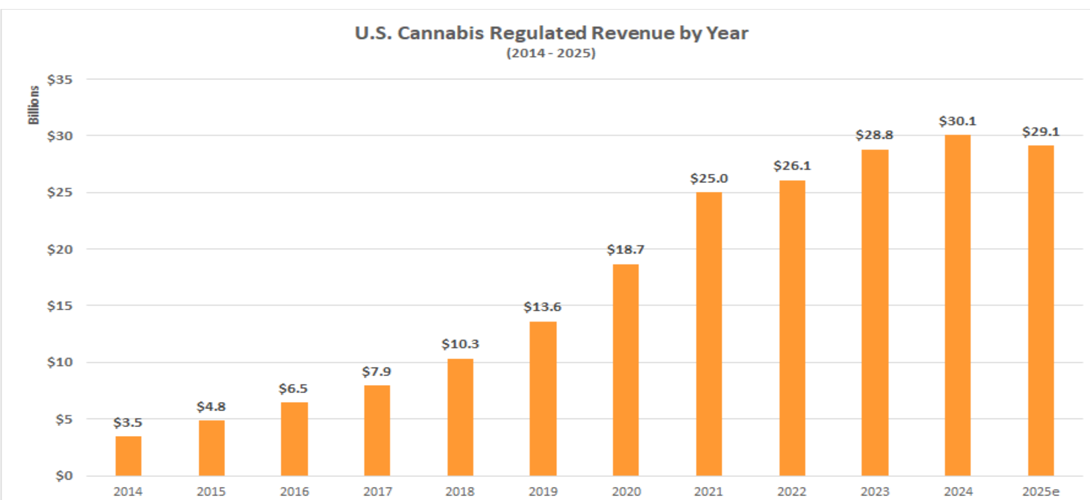
Hemp summary
Right at the time the U.S. and Pennsylvania hemp industry was recovering, the change in federal policy introduced so much uncertainty, that the industry may be setback for a decade. The impacts are already occurring, so it is more a matter of how much potential damage will occur until policies are changed. It is quite clear, from an economic perspective, some form of immediate policy intervention is necessary at both the state and federal levels.

A marijuana market update
The U.S. adult-use and medical regulated markets have expanded rapidly since Washington and Colorado legalized adult-use regulated sales in 2014. Currently there are 40 states where consumers have access to regulated medical marijuana, 24 of which have also deployed adult-use programs. From 2014 – 2024, the U.S. market had experienced positive growth each year. Growth is mainly driven by the deployment of new state programs and the expansion of existing ones. The key to growth has been through incentivizing conversions of consumers away from the unregulated market and into the regulated market as the market matures. Growth is most substantial at the state level in the first 3 – 5 years post deployment.

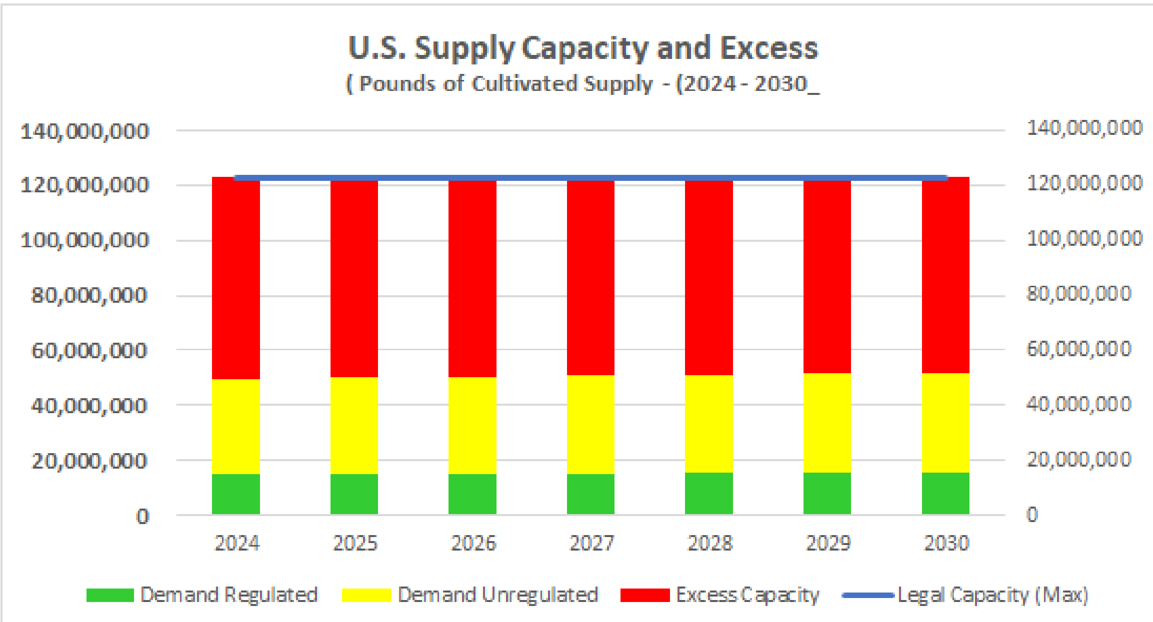
2025 is an inflexion point for adult-use and medical cannabis
For the first time in the history of regulated cannabis, U.S. national sales have declined year over year (YoY). While unit volumes appear to be steady, price compression has led to an overall decline in state sales and tax revenues. In fact, 22 out of 40 states (55%) have experienced revenue declines. Overall, sales declined 4.75% to $29.1 billion.



Source: Whitney Economics, State Cannabis Regulators

Over-saturation has led to price, sales declines
State regulators play a central role in the cannabis market. A common mistake made at the state level is to authorize more cultivation capacity than is necessary to satisfy the demand. This leads to an oversupply of

products, falling prices and compressed margins. The total amount of regulated supply required to meet demand in the U.S. in 2025, was estimated to be 15 million pounds of cultivated output, yet U.S. regulators have authorized a total of 122.9 million pounds of capacity.



Source: Whitney Economics U.S. Cannabis Supply Report (2024), State Cannabis Regulators

Over-supply has impacted profitabilty

With the combination of declining wholesale and retail prices, and higher input costs such as labor and rent, particularly post-pandemic, profitability has been challenging to achieve in the U.S. cannabis industry. In fact, based on a national cannabis industry survey conducted in 2024, 27.3% of cannabis operators were profitable in 2024[3].

Percentage of Profitable U.S. Cannabis Businesses			
	2022	2023	2024
Profitable	42.40%	24.55%	27.27%
Breaking Even	20.30%	34.48%	40.56%
Not profitable	37.40%	41.07%	32.17%

[3] https://s43720.pcdn.co/wp-content/uploads/2024/07/DEA-2024-0059-36118_attachment_1.pdf

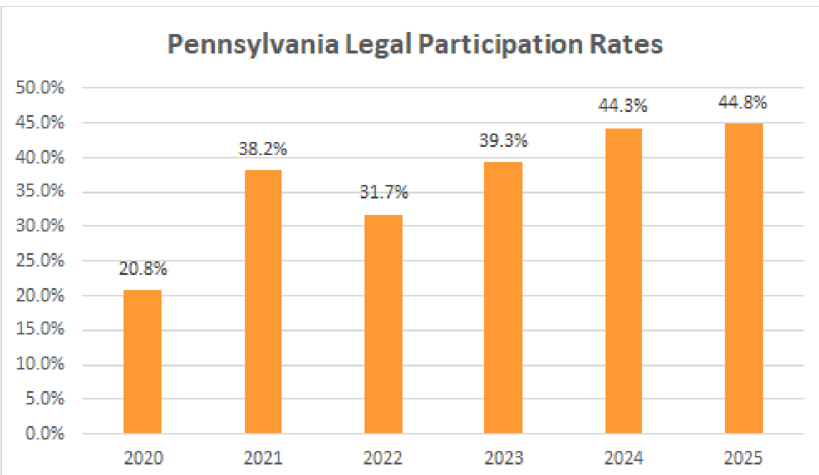
Whitney Economics: U.S. Cannabis Business Conditions Survey, 2024

Pennsylvania medical cannabis update

The Pennsylvania cannabis market has held up better than the broader U.S. market. Total sales of medical cannabis are forecasted to have grown 1.2% in 2025 to $1.75 billion. This represents 5.7% of the total U.S. regulated sales. By contrast, total sales in the U.S. declined 4.75% in 2025

Medical regulatory program has limited growth and legal participation

By limiting the consumer access to medical patients, both legal participation and market growth have peaked. Current legal participation by consumers is hovering below 50%, which is high for states with medical only programs. This means that over half of the marijuana supplied to Pennsylvania consumers comes from unregulated suppliers.



Source: Whitney Economics

The Pennsylvania cannabis industry is a source of job creation

The cannabis industry employs an estimated 25,000 in Pennsylvania. It is forecasted to remain steady for the near term, unless a change in regulatory structure occurs. The Pennsylvania cannabis industry, if fully realized, could employ as many as 60,300 workers.

Adult-use cannabis is a source of sales tax revenues

The total addressable market for cannabis in Pennsylvania (not including hemp) is an estimated $3.9 billion. If taxed at the standard sales tax rate of 6.0%, the addition of an adult-use market could contribute up to $82.0 million in tax revenues, (assuming medical patients are not taxed). If a 10% excise tax is imposed on top of the sales tax, the adult-use cannabis industry has the potential to contribute $218 million to the state coffers. (Note: Even in mature states, cannabis tax revenues represent less than 1.5% of a state's revenues)

Federal marijuana policy is facing potential changes in scheduling

In an executive order issued in December, President Trump has instructed the U.S. Attorney General, to expedite the process of cannabis rescheduling that would change marijuana from a schedule 1 to schedule 3. The implications of this potential policy change are still being assessed. There are many steps in the rescheduling process, so the timing of this change and the impact on the current cannabis operators will take time to sort out. The positive and negative impacts will depend upon the rules and regulations that are promulgated by multiple federal agencies.

There are many other policy changes that could benefit the cannabis industry. Below are a few key federal policies and their importance.

- **Scheduling**
    - Executive order request U.S. A.G. to accelerate the rescheduling process.
    - Impacts only medical
    - Timeline TBD
    - Cost/Benefit depends upon DEA, FDA rules.
    - May force consolidation in the market.
- **Banking and Financial Services**
    - Lack of access to banking and other financial services are driving up costs of capital and costs of doing business. Lack of access hurts small and minority operators the most.
- **Taxation**
    - U.S. cannabis industry will pay an additional $2.7 billion in taxes due to 280E. Tax reform may partially occur with re-scheduling.
- **Interstate Commerce**
    - Interstate commerce would expand the market for state-based operators. Despite multiple states passing laws approving interstate commerce, no state compacts have been established.

A note on the timing of policy changes: Do not expect changes in the near term, operators need to be flexible enough to quickly pivot when they do come.

Observations

- Hemp is a significant contributor to the Pennsylvania economy. Given the fact that it supports economic activities in agricultural, manufacturing, retail, construction, automotive, medical and other industries, efforts to protect this market from the impacts of state and federal policy make economic sense.
- Changes to hemp policy have the potential to reduce Pennsylvania tax revenues while increasing state expenditures.
- The medical marijuana industry is also a significant contributor to the economy; however, its influence is capped due to the limited level of access that consumers are provided.
- Expanding the regulated cannabis market to include access to adult-use products would increase job and business creation. It would also provide a source of additional tax revenues without having to increase taxes on the general population. However, cannabis tax revenues make up less that 1% of other state’s revenues.
- Sensible regulations that balance public safety with business creation would reduce the potential impacts related to federal policy changes for the both hemp and marijuana industries.
- Taking steps to control the balance between supply and demand is critical for the viability and sustainability of the marijuana industry in Pennsylvania. Whitney Economics has existing models that can assess markets for potential saturation and can calculate the number of licenses for each sector that would achieve this balance.

Conclusion

The adult-use, medical and industrial cannabis markets are complex and nuanced. All are facing potentially major changes in 2026 that could shape the market opportunities for decades. Despite the executive orders related to marijuana, do not expect changes to take effect within the calendar year. By contrast, the hemp industry is an industry in crisis and policy interventions are imperative to avoid major business and labor disruption. Given that the entire cannabis industry is dependent upon farmers, how farmers react over the next few months will be a leading indicator of how the rest of the industry will be impacted moving forward.

If policies remain in place in the near term, hemp revenues will decline precipitously, as will state sales tax revenues. As business failures increase, job displacement will occur and expenditure by the states will increase, particularly related to unemployment compensation and health care.

Cannabis policy, regulation and operation are all very local in nature. However, given the global nature of the industry it is important to remember to act locally, but think globally.

Thank you

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