

Economics of Legalization of Marijuana in Indiana

Daniel H. Boylan
Purdue University

Quentin Sodano
Purdue University

In today's political and social climate, legalizing and removing marijuana from the Schedule I federal list of controlled substances has been a major topic of discussion across the United States. As more states pass legislation to legalize marijuana, whether it be for medicinal or recreational means, a market is being created that has economically valuable possibilities that include increased funding for schools, state infrastructure, and increased budgets for state and local governments. This research seeks to highlight the economic effects of legalizing marijuana in Michigan and connect the exponentially growing Cannabis tax revenues, and compare them to Indiana's prohibitory laws. Beginning with recent announcements by President Biden, followed by the history of marijuana, into analytics; where states have quantifiable evidence of the benefits of marijuana legalization. An analysis will decide the economic benefits for Indiana, resulting in taxation being more valuable. As marijuana legalization occurs in more states, the impact legalization potentially has on both state and national economic and societal gains is worth examining.

Keywords: cannabis, legalization, tax revenue, Indiana

INTRODUCTION

Cannabis Sativa, known as marijuana, is a current topic of interest. The topic is in the elections, news, and the United States as President Biden announced mass pardons for federal marijuana possession (The United States Government, 2022). Advocates, businesses, and lawmakers were more enthused by the federal directive toward federal agencies to conduct a review of whether marijuana should remain a Schedule I substance (The United States Government, 2022). Cannabis has been classified as a Schedule I, alongside heroin, meth, and crack cocaine since the 1970s, and the need for reform on the federal level is imminent (The United States Government, 2022).

THC, *Tetrahydrocannabinol*, is the active ingredient in marijuana that deals with the psychoactive (mind-altering) effect on the brain and is what causes the euphoric high. Cannabis Sativa comes with its low-THC varieties classified as industrial hemp products and the higher-THC strains used for medical and recreational marijuana (Aran, 2020). As of now, 54% of states in the United States have partially or fully decriminalized marijuana and accept marijuana purposes medically and the sale of recreational marijuana (Ramirez, 2022). This leads to billions in state tax revenue.



President Biden @POTUS · Oct 6, 2022

...

United States government official

Third: We classify marijuana at the same level as heroin – and more serious than fentanyl. It makes no sense. I’m asking @SecBecerra and the Attorney General to initiate the process of reviewing how marijuana is scheduled under federal law.

Indiana and Michigan are the states concerned are the sales being generated. In Michigan, a legal state, sales are being satisfied by Indiana residents, a non-legal state. Michigan allows for the sale and distribution of marijuana to Indiana residents, up to 2.5 ounces per transaction. Michigan marijuana dispensaries have marketing billboards along the highway in Northeast Indiana heading north. This leads one to ponder: “How much revenue is generated in Michigan by Indiana residents?” and “Why doesn’t Indiana want this revenue for themselves?”

TABLE 1
MARIJUANA LEGALITY BY STATE

Status	Number of States
Fully Legal	19
Medical and Decriminalized	9
Medical Only	9
Decriminalized	2
CBD with THC Only	7
Fully Illegal	4
Total	50

Indiana is one of 23 states that have not legalized marijuana for either medical or recreational use (Ramirez, 2020). Both medical marijuana and adult recreational use are unlawful in Indiana, though Indiana allows CBD oil containing less than .3% THC. Possession of less than 30 grams of marijuana or less than 5 grams of concentrates is a misdemeanor with up to 1 year of imprisonment and a \$5,000 fine (NORML, 2022). Removing marijuana from the list of Schedule I of controlled substances would change this. Sales tax and Excise tax would be collectible, bolstering Indiana’s budget. The state could use increased revenues to strengthen education, infrastructure, and facilities budgets. The assumption the billions in tax revenue would far outweigh the costs of imprisonment, rehabilitation, and fines if Indiana would continue treating marijuana with a prohibition policy.

This is an important matter as generations change and evolve, and so do the laws and norms of society. The current generation, the population is accepting Cannabis with more and more states accepting their stance on decriminalizing marijuana. Politicians are now campaigning for the regulation, and decriminalization of marijuana now more than ever before, of the 31 states in which marijuana is still recreationally illegal, five have it as a ballot issue next month. Voters in Arkansas, Maryland, Missouri, North Dakota, and South Dakota will decide whether recreational, adult use of marijuana should be legalized in next month’s elections (NORML, 2022). Of those states mentioned, only Maryland and Missouri voters have decided in favor of the ballot initiatives, legalizing the possession, cultivation, and licensed retail sale of Cannabis for those ages 21 and older. Voters in Missouri, marked for the first time citizens’ in a mid-western state deciding in favor of legalizing marijuana (Rivas, 2022). Here is a recent Tweet from Rattle Tale:



Rattle Tale @tattledtale · Nov 9, 2022

...

According to a recent Gallup poll, 16% of Americans said they smoked **marijuana** in the past week, while just 11% said they smoked a **tobacco** cigarette, marking the first time **smoking pot is more popular than smoking** cigarettes. \$trul \$tly
[google.com/amp/s/finance....](https://www.google.com/amp/s/finance....)

As Cannabis has been in the news recently, it has been cultivated throughout recorded history. Cannabis use originated in central Asia or western China and was a source of industrial fiber, seed oil, food, recreation, religious and spiritual moods, and medicine. Cannabis has been used throughout history for its alleged healing and therapeutic properties. Emperor Shen Nung’s pharmacopeia was the first documented case of Cannabis use for medicinal purposes. This dates to 2800 BC. Nung has long been regarded the father of Chinese medicine. The industrial and health properties of Cannabis have been written and recorded for eons as evident in the works of Indian Hindus, Assyrians, Greeks, and Romans (Lambert Initiative for Cannabinoid Therapeutics, 2022). Hindu folklore is Shiva’s title “The Lord of Bhang” is a result of Cannabis being his favorite food. Ancient Hindus too regarded Cannabis as medicinal and even coined the phrase “hot breath of the gods” as an attribute to a person’s behavior. Using Cannabis in religious rites appeased the gods and reduced fever (Lambert Initiative for Cannabinoid Therapeutics, 2023). Cannabis is used today as it was before for individuals with ADHD, depression, arthritis, amenorrhea, inflammation, pain, and asthma, and used as an appetite stimulant (Aran, 2020).

There has been attention paid to the effects of Cannabis on REM sleep. Cannabis, especially THC-rich strains, is likely to reduce levels of REM sleep. This is the stage of sleep when we do our most active dreaming, and when the brain does memory processing and consolidation of acquired information, and processing emotional experiences. REM sleep can be thought of as wiping the slate clean in the brain each night, helping prepare the brain for all the activity, including cognitive and emotional activity, that it powers during every moment of waking life. It is not healthy to suppress the REM portion of sleep. Additionally, too much REM is also negative. Cannabis is now increasingly recognized as a promising therapeutic tool for sleep disorders associated with abnormal REM sleep and disruptive dreaming, including REM Sleep Behavior Disorder and PTSD (Breas, 2022).

Although this will be changing, under current law in Indiana, and federally under the Controlled Substance Act, marijuana remains classified as a Schedule I illegal drug with no medical use or purpose, and advocates are prosecuted the same as users of heroin or meth. This again is a current topic after President Biden’s recent announcement, calling for a change in policy on marijuana – leading to legalization on the federal level and allowing for the states to manage the legislation on their level. Legalization will increase state and federal tax benefits and will lower incarceration costs (Congressional Digest, 2022). Respectfully, there is pushback claiming that marijuana is a “gateway drug” that will lead users to harder drugs later in life. The argument could be made, marijuana is not for everyone, but it is important to everyone who relies on it through prescription and medical use as it benefits their livelihood. On October 6, 2022, President Biden Tweeted a concern about upending lives:



President Biden @POTUS · Oct 6, 2022

...

United States government official

Sending people to jail for possessing marijuana has upended too many lives – for conduct that is legal in many states. That’s before you address the clear racial disparities around prosecution and conviction. Today, we begin to right these wrongs.

After reading this paper, the reader should feel better informed about the landscape of marijuana legislation about legalization and tax implications this has with neighboring states, for example, Indiana

(nonlegal) versus Michigan (legal recreationally and medically). Can the tax revenue of Northeast Indiana be quantified? Does Indiana lose tax revenue when residents buy Cannabis in Michigan versus the revenue gained from imprisonment and fines?

Researchers who want to see marijuana legalized and monetized on the state level claim the war on drugs has failed and the laws and legislation on marijuana should be ratified. Researchers predict that legalization will lead to lower crime rates and lower incarcerations related to the drug, and safer and more responsible use of the substance. Recent studies have also shown marijuana laws are associated with declining alcohol consumption while having increased tax revenue and job creation (NORML, 2022).

Researchers in favor of having marijuana legalized point to the medical benefits. It is known to relieve nausea and provide comfort to patients with multiple sclerosis, glaucoma, and AIDS. Sativa-dominant strains of marijuana are useful for individuals with ADHD because while they provide energy, they also increase focus. Individuals who suffer from ADHD are then about to enhance their concentration. Because Sativa raises mood and increases the wish to get up and move, it's also a helpful treatment for depression. Many Cannabis strains have plentiful amounts of CBD (cannabinol), which has been proven to be a natural antidepressant. Patients with cancer or anorexia often struggle with loss of appetite. Cannabis works as an all-natural way to stimulate hunger. Cannabis can also relieve nausea, those undergoing chemotherapy can have reducing suffering. Last, high amounts of THC make many Sativa Cannabis strains effective at relieving pain. Because of their energizing effects, this makes Sativa a more useful treatment than prescription painkillers such as opioids, as the latter can cause drowsiness and limit the patient's ability to function. So far, the Food and Drug Administration (FDA) has not approved a marketing application for Cannabis for treating any disease or condition. More importantly, the FDA has not approved any Cannabis, Cannabis-derived, or cannabidiol (CBD) products now available on the market (Aran, 2020).

After long being considered a "gateway drug," recent scientific evidence provides an alternative to legalizing marijuana. Scientific studies have shown smoking marijuana can be linked to heart and lung disease, throat cancer, and decreased memory capacity. Putting this all together, there's no good evidence that marijuana is a "gateway drug," which defined by the National Institute of Drug Abuse, is a habit-forming drug that, while not itself addictive, may lead to the use of other addictive drugs (National Institute on Drug Abuse, 2021). Again, this is a hypothesis, but there is solid evidence that legalizing marijuana reduces using other drugs, but the argument could be made that legalizing the drug would do the opposite of the "gateway effect." Legalization leads to education programs and job creation. The same could be said of alcohol, tobacco, nicotine, and antidepressants, which are legal drugs.

The United States has a long, conflicted history with marijuana dating back to the first legislation in 1937, the Marijuana Tax Act of 1937. Coincidentally, *Reefer Madness*, an American propaganda film demonizing marijuana through the story of two teens trying it for the first time and leading them to a hit-and-run accident, manslaughter, murder, attempted rape, and finally suicide; was released a year earlier. The act was drafted to require tax on the sale of marijuana. Scholars have argued that it was a political attack against the hemp industry, which was threatening to overtake the paper industry during the time. Interested parties included business moguls Andrew Mellon, Randolph Hearst, and the Du Pont Family (Peet, 2004). Scholars argue with the invention of the decorticator (the machine for stripping the skin, bark, or rind off nuts, wood, plant stalks, and grain), made hemp an incredibly cheap alternative in extracting fibers compared to the traditional paper process (Peet 2004).

On October 27, 1970, the United States Congress passed the Comprehensive Drug Abuse Prevention and Control Act of 1970, which categorized controlled substances based on their medical use and potential for addiction (United States Senate Committee on the Judiciary, 2008). This was followed by President Nixon declaring "drug abuse" to be public enemy number one and for the United States' Nixon also declared a "War on Drugs" that would focus on drug eradication, user interdiction, and perpetrator incarceration.

The presidency of Ronald Reagan saw an expansion in the federal focus on preventing drug abuse and prosecuting offenders. In the first term of the presidency, Ronald Reagan signed the Comprehensive Crime Control Act of 1984, which expanded penalties for possession of Cannabis, established a federal system of mandatory minimum sentences, and established procedures for civil asset forfeiture (Thurmond, 1984).

The Drug Policy Alliance is an advocacy group working to then the “War on Drugs.” They estimate the Federal government spends upwards of \$51 billion annually to continue this “war.” In 2021, after 50 years of the drug war, it is estimated the US has spent a cumulative \$1 trillion towards this effort (Mann, 2021).

Kassandra Frederique, who heads the Drug Policy Alliance, said, there was a human miscalculation when designing the “War on Drugs.” Indeed, much of the drug war’s architecture remains intact. Even though the Federal for programs aimed at user interdiction still incarcerates more people than any other nation. Almost half of these inmates are held on drug charges. This runs contrary to the national trend of reduced prison populations. In fact, the state and federal inmate populations have been reduced by 25% since 2009 with populations of 1.6 million and 1.2 million in 2009 and 2022 respectively. “The best outcomes come when you treat the substance use disorder [as a medical condition] as opposed to criminalizing that person and putting them in jail or prison,” said Dr. Nora Volkow, who leads the National Institute of Drug Abuse (Mann, 2021).

From the researcher’s perspective, the “War on Drugs” is failing as a concept and has become less and less credible, with the case to remove marijuana and THC from the Controlled Substances Act becoming more evident each year. Even now, the Marijuana Opportunity Reinvestment and Expungement Act, also known as the MORE Act, is a proposed piece of U.S. legislation that would deschedule Cannabis from the list of controlled substances, was passed in the House of Representatives for the second time on April 1, 2022 (220-204 vote) (Marcos 2022). The bill will move to the Senate floor in the immediate future.

This research will look to aim at the effectiveness of prohibition policies on marijuana with the costs of inmates of marijuana possession convictions versus decriminalizing and legalizing marijuana, and the tax benefits that would follow.

The question begs, how much of Michigan’s recreational marijuana sales come from Indiana residents? How are those tax revenues being used? How can Indiana capitalize on the untapped tax revenue with the impact of possible reclassification/rescheduling of marijuana at the federal level?

The balance of this paper comprises four sections. First, a research review looks at technology studies to explain the topic. The next section includes methodology, both informing the topic and describing the problem. The third section includes an examination of the results of the research. Finally, the inquiry ends with informing the reader of the findings of the investigation.

LITERATURE REVIEW

Using medical Cannabis is rapidly growing. While evidence exists for pure cannabidiol (CBD) to treat refractory epilepsy. In many cases this is being safely done to treat children with autism spectrum disorder (ASD). Benefits are also seen in patients with Tourette syndrome and spasticity. Unlike recreational Cannabis which can be associated with serious adverse effects in children, medical Cannabis has been seen to be relatively harmless. The main risks associated with the use of Δ^9 -tetrahydrocannabinol (THC) and CBD in the pediatric population are described, and the debate regarding using whole-plant extract to retain a possible “entourage effect” as opposed to pure cannabinoids is more standardized and reproducible (Aran, 2020).

Interest in Cannabis as at an all-time high. This is especially true for use in medicinal and therapeutic areas. We are starting with a common question: how does Cannabis affect sleep architecture, the cycles and stages of sleep we experience every single night? There is not a simple answer to that question, in large part because several reasons that come into play, including:

- Dosing
- How Cannabis is consumed or used
- The strain of Cannabis being used

CBD has no psychoactive effects—that means there is no “high” associated with this compound. Scientists think instead that CBD works to balance or offset the high that is delivered by the cannabinoid, THC. THC is what gives the high that is associated with Cannabis use. THC has been shown to have therapeutic benefits, including pain relief. THC has sedative effects. Emerging evidence signals that THC

may improve breathing during sleep, which makes THC a potential therapy in treating sleep apnea. Non-REM sleep phases are lengthened when the endocannabinoid is activated. The sedative properties of Cannabis, most closely associated with the cannabinoid THC and with several different terpenes found in Cannabis, help shorten sleep latency. This means THC helped individuals fall asleep faster, and lengthens the early phases of non-REM sleep. Cannabis, especially THC-rich strains, is likely to reduce levels of REM sleep. This is the stage of sleep when we do our most active dreaming, and when the brain does a lot of memory processing and consolidation of gained information, and processing emotional experiences. REM sleep can be thought of as a kind of wiping the slate clean in the brain each night, helping prepare the brain for all the activity, including cognitive and emotional activity, that it powers during every moment of waking life. There is a compelling body of research showing CBD's ability to reduce anxiety, relieve pain, and promote mental focus and clarity. CBD may also reduce daytime sleepiness and promote alertness (Breus, 2022).

Cancer patients are at the forefront medical Cannabis legalization policy discussions. Cannabis use among cancer victims is not understood in either the medical or legislative groups. Cousin (2021) surveyed patients when they went to medical dispensaries. The survey assessed demographics, employment/disability, pain, physical functioning, mental health, mode of Cannabis use, and frequency/amount of Cannabis use. Researchers found patients with cancer have different reasons for seeking medical Cannabis than those patients without cancer.

Grand View Research found the global legal marijuana market size was valued at USD 13.2 billion in 2021 and is expected to expand at a compound annual growth rate (CAGR) of 25.5% from 2022 to 2030. The increased demand Cannabis that is legal has been a primary factor in market growth. Recently, many countries have legalized using medical marijuana for treating various ailments. Several studies carried out show that medical marijuana and its derivatives can be used to treat symptoms of various diseases, for example, it has been successfully used to treat patients experiencing chronic pain, nausea from chemotherapy, the effects of Parkinson's and Alzheimer's diseases. The FDA and other such associations have now started accepting marijuana derivatives for prescribing diseases which has proven to be useful. This is another reason for the quick turnaround of its legal status in several countries (Fiani, et al., 2020).

North America (the U.S. and Canada) has gone a step further and has sanctioned using recreational marijuana as well and more than two-thirds of the U.S. states have legalized marijuana. With government policies changing, the demand for medical marijuana is also rising. Many countries have legalized Cannabis to cut illegal imports and boost tax revenues. This example provides incentive for other countries to do likewise. This, in turn, has produced jobs in the industry and a lot more companies are dabbling in this territory. Several startups in the U.S. and Europe are now focusing on alternate uses of Cannabis, other than recreational and medicinal. With so much happening in and around the Cannabis industries, the countries are paving the way for more liberal policies regarding its cultivation and use in the medical field and industrial use. The U.S. is seeing more growers of Cannabis which is adding to the tax revenues generated. It is also cutting down on the illegal import of marijuana. It has a myriad of applications from medical to industrial and since its legalization, the rise in its sale has been exponential and this has generated new opportunities to increase revenues. With the FDA-level authorizations underway, the market for legal marijuana is only going to expand (Grand View Research, 2020).

Colorado passed in 2012 Amendment 64 and legalized the first adult-use recreational marijuana market in the U.S. To date, this market has generated over \$10 billion in sales. This not only represents a massive success and proof-of-concept for the future of the American Cannabis industry, but it also accounts for billions in tax revenues for the state of Colorado. Even with the depressed economy that results during the worldwide pandemic, marijuana sales grew in 2020. By January 2021, marijuana sales reached \$187.5 million. During the last six years, the Centennial State has collected over \$1.6 billion - that is just at the state level- in marijuana taxes and fee revenues. The tax revenue possibility provided a selling point to Colorado voters in passing recreational Cannabis legalization the next year. Tax revenue generated by marijuana sales in Colorado accounts for only a fractional percentage of the state's budget, admit this tax revenue stream did not exist ten years ago. As is still true for many states, millions of dollars in untaxed transactions took place in the black market. Colorado has pioneered a lawful, commercial, adult-use market

generating billions of dollars in tax dollars for the state. When you factor in the U.S. Cannabis industry will be worth in the next decade, and factor in that Colorado experienced record sales in 2020, you realize we are just scratching the surface of future revenues. Between a growing market, the hope of federal Cannabis policy reform, and eroding the stigma surrounding the plant, we are still at the beginning of this industry in the United States (Hoban, 2021).

The Lambert Initiative contributed \$33.7 million donation for research on therapeutic use of medicinal Cannabis. They are targeting conditions including pediatric epilepsy, cancer, chronic pain, obesity, neurological, and mental health disorders. The aim is to increase the safety of cannabinoid therapeutics and introduce it as mainstream medicine in Australia and relieve suffering. Their activities extend from plant science and cannabinoid production, through cellular and preclinical pharmacology, to medicinal chemistry and drug discovery, including human laboratory studies and clinical trials. The Lambert Initiative also acts as an advocacy and educational ability. They provide evidence and guidance for clinicians, consumers, health professionals, and politicians about the potential of cannabinoid therapeutics. The organization seeks to influence public health policy regulatory approaches. The Lambert Initiative develops knowledge aimed at increasing the potential of cannabinoid medicines to treat human diseases, where an unmet need for novel treatments (Lambert Initiative for Cannabinoid Therapeutics, 2023).

NPR featured a special series presented on Morning Edition with Brian Mann covering *The War on Drugs: 50 Years Later*. The 7-minute program spotlighted the “War on Drugs” initiated by President Nixon and covered how racial bias existed. Explained how the police tactics and law enforcement has changed into a more violent approach, less investigative. It followed with how some state’s polls showed a large sentiment of voters believed marijuana should be legalized and the “Drug War” should be scrapped altogether. Explained the dangers of synthetic drugs and how easily it was evident in Mexico that the lack of government involvement. The author believed the response to drugs should be handled by doctors and therapists, not cops and prison guards. Studies show from the outset drug laws were implemented with a stark racial bias, leading to unprecedented levels of mass incarceration for Black and brown men. As recently as 2018, Black men were nearly six times more likely than white men to be locked up in state or federal correctional facilities, according to the U.S. Justice Department. Researchers have long concluded the pattern has far-reaching impacts on Black families, making it harder to find employment and housing, while also preventing many people of color with drug records from voting (Mann, 2022).

The House of Representative recently passed legislation to legalize marijuana nationwide and remove criminal penalties for distribution and possession. Lawmakers passed the bill largely along party lines, 220-204, with three Republicans joining all but two Democrats in support. The measure now goes to the Senate, where Majority Leader Charles Schumer (D-N.Y.) is working with fellow Democrats to introduce a marijuana legalization bill as soon as this spring. It is not clear if a bill to legalize marijuana could advance in the Senate. The bill, titled the Marijuana Opportunity Reinvestment and Expungement (MORE) Act, would clear marijuana-related convictions from people’s records and formally remove it from the federal list of controlled substances (Marcos, 2022).

NORML’s mission is to move public opinion enough to legalize the responsible use of marijuana by adults, and to serve as an advocate for consumers to assure access to high-quality marijuana that is safe, convenient, and affordable. NORML is a public-interest nonprofit advocacy organization that represents the interests of millions of Americans who want marijuana used responsibly. The oldest and largest marijuana legalization organization in the country, NORML preserves a professional staff in Washington, DC, headed by Executive Director Erik Altieri, and a network of volunteer state and local NORML Chapters across the country. Found NORML’s statistics useful in their collection of medical studies, medical journals, data from reports, and information from trade articles in their collection (Marijuana regulation: Impact on health, safety, economy, 2020).

Congressional Digest is an authoritative publisher of U.S. politics and public affairs relating to significant U.S. concern. Their website stands out for its depth of background, supporting data, balance among different sides, and well-written, well-documented arguments. In their March 2020 article, they dive into the pros and cons of legalizing marijuana on the Federal level. The article begins with the history of marijuana in the United States, recorded the actions of eighteen states that have legalized weed for

recreational use, and weighs the health effects against illegal marijuana activity. They examine the lessons learned from Colorado and what happened after the first state legalized marijuana (Marijuana Legalization: Pros & Cons of Legalizing Marijuana on the Federal Level, 2022).

Marijuana has been labeled a “gateway” drug. This means that users may start with a relatively harmless drug such as marijuana but will then “gateway” into more harmful drugs. The thought on policy is that if individuals are prevented from starting with the less harmful drug they will never proceed to the more harmful drug. As a result, organizations advocating for the use of marijuana need to inform the public both negative health effects and the potential positive therapeutic benefits linked to marijuana. Some of the negative issues are short-term memory impairment, distorted perception, impaired driving, and the possible addictive qualities. Consuming marijuana has therapeutic benefits, can improve appetite, reduce nausea, and relieve pain for those suffering chronic pain (National Institute on Drug Abuse, 2021).

Peet (2004) worked to dispel suspicious misinformation offered by organization seeking to maintain the status quo and keep marijuana use criminalized. Many of these organizations depend on the “War on some drugs and users” for their livelihood and status. Drug users and abusers describe their feelings and fears for freedom, not only for themselves but for all their fellow citizens in the United States and the rest of the world, detailing the “Constitution-shredding War” on some drugs and users. Despite the hysteria promoted by prohibitionists, drugs have been a part of life for thousands of years. So why is the “War on some drugs and users” underway? The answers can be found in *Under the Influence*. Decades of spending trillions of dollars while waging war on neighbors, friends, and families have done nothing to eliminate drug use, but has succeeded in overthrowing governments, tearing apart families and communities, and ensuring the rise of international criminal cartels. *Under the Influence* explains not only how we came to this situation but how real reform can come about (Peet, 2004).

President Joe Biden announced he would pardon people federally convicted of simple possession of marijuana. This is a measure seen as a statement on how offenses should be handled. The president’s historic gesture could affect more than 6,500 people but does not affect those convicted at the state level, where most such convictions occur. Biden is hoping states will follow suit. The notion of legalizing marijuana at the federal level has been gaining steam in recent years, and many states have already approved the substance for medicinal purposes, with a handful giving the OK for recreational use. Before he was elected, Biden had called for marijuana decriminalization on the campaign trail and in April pardoned nine federal offenders. He has also instructed Secretary of Health and Human Services Xavier Becerra and Attorney General Merrick Garland to begin reviewing how marijuana is classified under federal drug laws. President Joe Biden on Thursday pardoned thousands of individuals convicted of possessing marijuana, saying the system “makes no sense” and sending pot stocks soaring on the news. The pardons apply only to federal offenders convicted of “simple marijuana possession” as well as those charged in the District of Columbia, but Biden called on governors across the country to follow suit. “Just as no one should be in a federal prison solely due to the possession of marijuana, no one should be in a local jail or state prison for that reason, either,” Biden said in a statement (Ramirez, 2022).

Missourians voted to become the 21st state to legalize recreational marijuana, approving a constitutional amendment that also sets up a process to clear nonviolent marijuana-related charges from Missourians’ criminal records. Though down from the 66% of voters who approved medical Cannabis in 2018, the recreational marijuana amendment on Tuesday received 53% of the vote. “Today’s vote immediately puts an end to nearly 20,000 arrests each year for minor marijuana violations, freeing up law enforcement resources to fight serious and violent crime,” said John Payne, campaign director for Legal Missouri 2022, in a statement released after the amendment passed. When the measure goes into effect on Dec. 8, it will no longer be a crime to possess up to three ounces of marijuana. Medical marijuana businesses can begin requesting that day to expand their licenses for adult-use marijuana. According to the measure, the state has 60 days to act on those requests or they will be automatically approved. Payne said the state can expect millions in tax revenue each year, which will go towards veterans’ services, drug-addiction treatment programs, the state public defender system, and processing expungements in the state courts. And within six months of Dec. 8, circuit courts around the state must order expunging the criminal history

records of all misdemeanor marijuana offenses for any person who is no longer incarcerated or on probation or parole — and within 12 months for felony marijuana offenses (Rivas, 2022).

METHODOLOGY

The methods used to come up with the results were as follows: researchers looked at state tax revenues of Michigan from marijuana dispensaries, then we looked at the positive correlation between revenues being used to promote growth in the county, state government, education, and infrastructure. The tax revenue gained will be reflected against the tax revenue not gained (\$0), and the gains/costs of inmates convicted of marijuana possession being incarcerated.

Null Hypothesis (Ho): Indiana does not gain tax revenue with marijuana staying illegal, Indiana residents continue to purchase marijuana in Michigan. Costs of inmates are more effective than legalization.

Alternative Hypothesis (Ha): Indiana gains significant tax revenue with marijuana legalization, Indiana residents purchase from Indiana dispensaries, and keeping tax revenues in-state. Costs of inmates are less effective than legalization.

Participants, Sample, and Demographics of the Population

Currently, there are 97 licensed dispensaries in Michigan. They account for 10% excise tax and brought in revenues of \$31 million in 2020 and \$111 million in 2021. Researchers looked at communities located just above the Indiana state line. Below is the table of these 4 areas, the number of dispensaries located there, and the tax revenues generated.

**TABLE 2
ADULT-USE MARIJUANA PAYMENTS, BASED ON MARIJUANA REVENUES COLLECTED
IN FISCAL YEAR 2021**

Location	Number of Dispensaries	2021 Excise tax Revenues
Branch County, MI	8 currently licensed dispensaries	\$451,627.52
Coldwater, MI	6 currently licensed dispensaries	\$338,720.64
Hillsdale County, MI	5 currently licensed dispensaries	\$282,267.20
Reading, MI	3 currently licensed dispensaries	\$169,360.32

From this table, there are substantial Excise Tax revenues to be generated just for the areas just north of the Indiana state line. The area with the highest revenues is Branch County with just over \$457,000 while the lowest area is Reading at about \$169,000. The total for the entire state of Michigan stands at over 42 million dollars. This accounts for 35% of the school aid fund to be used for K-12 education of \$14,779,510.59 and 35% of the transportation fund to be used for repair and maintenance = \$14,779,510.59 (Department of the Treasury, 2022).

Procedure

Because of the obvious marketing that is done near the Indiana border with Michigan, Michigan was the obvious point for analysis. The researcher also completed an analysis with Illinois, a state that borders Indiana on its western edge.

Understanding that the legalization process is often incremental, researchers also looked at the legalization process in Ohio. Ohio is a state that borders Indiana on its eastern edge. Ohio is of interest as the state recently legalized marijuana for medical purposes but has not fully legalized the substance.

FINDINGS

Research has shown the Cannabis market is alive and growing, exponentially. The issue is that Indiana is one of the states where Cannabis remains illegal. When, in fact, Indiana residents still take the calculated risk to go to Michigan to buy Cannabis. If, then why does Indiana continue to keep prohibition laws against Cannabis intact? Well, we must show the government that revenues from legalizing Cannabis can substantially create tax dollars that can be used for schools, and transportation infrastructure, and generally boost the general ledgers of localities and municipalities in Indiana.

**TABLE 3
INDIANA MARIJUANA ARRESTS**

Indiana	2018	2019	2020	2021
Possession	11,310	7,445	4,436	6,392
Sales	<u>1,740</u>	<u>1,081</u>	<u>393</u>	<u>471</u>
Total	13,050	8,526	4,818	6,863
MJ Arrests	50%	21%	38%	39%
Agencies	57%	44%	35%	38%

Table 3 shows Indiana marijuana arrests from 2018 to 2021. The first two rows show statistics for Possession and Sales. The year with the highest arrests is 2018 with 13,050 while the year with the lowest is 2020 with 4,818. The Next two rows show “MJ Arrests” which is data relating to the percentage of all arrests related to marijuana. The row “Agencies” shows the percentage of state agencies related to law enforcement that were involved in a marijuana arrest. The next table shows the penalties, incarceration, and maximum fine for marijuana related offenses (NORML, 2022).

**TABLE 4
INDIANA MARIJUANA POSSESSION LAWS AND PENALTIES**

Offense (Possession)	Penalty	Incarceration	Max. Fine
CBD Products with less than 0.3% THC	None	None	\$ 0.00
Marijuana (any amount)	Misdemeanor	180 days	\$ 1,000
Marijuana less than 30g and prior offense	Misdemeanor	365 days	\$ 5,000
Marijuana less than 30g and prior offense	Felony	6 months – 2.5 years	\$10,000

When comparing Table 3 and Table 4, we can determine that if all 6,392 marijuana possession arrests that occurred in Indiana would lead to even the maximum felony fine of \$10,000, the total compensation (not including lack of payments or collection of fine) would be \$63,920,000. Likewise, we can determine that if all 6,392 marijuana possession arrests that occurred in Indiana would lead to even the maximum misdemeanor fine of \$5,000, the total compensation (not including lack of payments or collection of fine) would be \$31,960,000. These figures are only achievable in a perfect scenario; every marijuana possession arrest would lead to a conviction and paid the fine amount in full (this is highly unlikely).

FIGURE 1
TOTAL MARIJUANA SALES BUT STATE IN BILLIONS OF US DOLLARS.

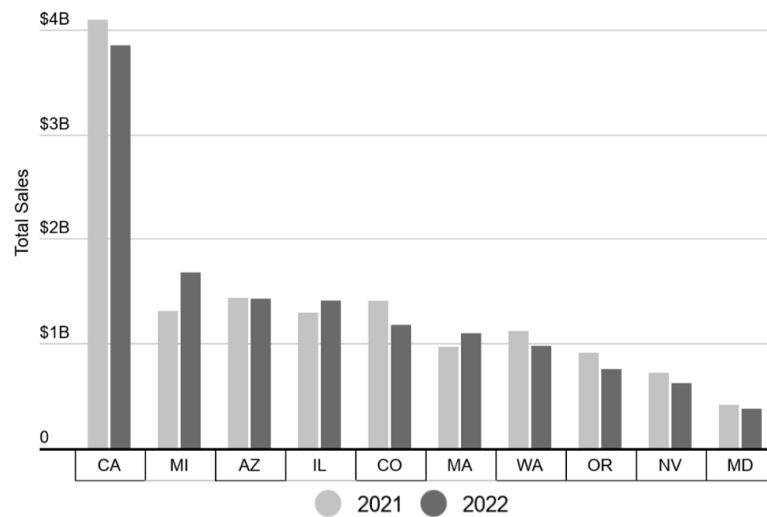


Figure 1 shows the Total Sales by state in Billions of US dollars. The state with the largest sales is California, followed by Michigan, Arizona, and Illinois. Michigan’s Cannabis sales grew to a \$2B market while many US Cannabis markets experienced sales declines. Total sales have grown by 28.2% in the past year, making Michigan the second largest Cannabis market in the US behind California (marijuana tax revenue thus increases 28.2%). The Michigan market is expected to grow to \$2.5B by 2025. (NORML, 2022).

On the revenue side legalizing marijuana in Indiana would bolster tax revenues, encourage young people to migrate to the state and stimulate retail sales. On the expense side, legalizing Cannabis in Indiana would also decrease the incarceration rate, as it has in other states such as Colorado. Additionally, it would free police forces to focus on other crimes or crime prevention. Without these crimes a segment of law enforcement that has been criticized for being racially motivated will cease to exist and the number of citizens that would not have felonies would decrease. This is an important piece of this study. Once individuals get a felony, they no longer qualify for federal financial aid. This means they are not able to get funds for college education. In turn this means many of the affected individuals will lose access to higher paying jobs. Often this forces them into the drug trade themselves. As a state, Indiana is often criticized for the low college graduation rate. This policy would help dispel this fact.

CONCLUSIONS

Would Indiana gain significant tax revenue from legalizing marijuana, or would Indiana achieve more tax revenue from prohibitory laws? For comparison, in 2021, Michigan had accumulated \$42,227,173.12 in total tax revenue from the sale of \$1.3B for adult-use recreational marijuana and \$481M for medical marijuana. If projecting the marijuana industry in Michigan is 2B for 2022, the tax revenue will reflect that increase in sales, and state tax revenues. This will further help support the original hypothesis that Indiana would gain significant tax revenues versus the current prohibitory marijuana laws. After conducting investigative research into this topic, the conclusion can be drawn that yes, Indiana would have significant gains in tax revenue to bolster schools, highways and infrastructure, and state government with legalizing marijuana.

The FDA’s role in regulating drugs, including Cannabis and Cannabis-derived products, also includes a review of applications to market drugs to determine whether proposed drug products are safe and effective for their intended indications. The FDA’s drug approval process requires clinical trials to be designed and

conducted in a way that provides the agency with the necessary scientific data on which the FDA can make its approval decisions. Without this review, the FDA cannot determine whether a drug product is safe and effective. The FDA also cannot ensure a drug product has appropriate quality standards. For certain drugs that have not been approved by the FDA, the lack of FDA approval and oversight means the safety, effectiveness, and quality of the drug – including how potent it is, and whether the labeling is accurate or false may vary.

With the passing of the Medical Marijuana and Cannabidiol Research Expansion Act, researchers believe that the FDA's drug approval process will be examining human clinical trials of Cannabis products soon. This act will expedite the FDA's drug approval process.

Industry Implications

The Cannabis industry can increase the overall societal benefits by adding tax revenue and bolstering the education system. Education is crucial to community improvement, for children of all ages, and adults. As state-funded education standards continue to descend lower, so does the overall education of generations to come. If tax dollars were created from the legalization of marijuana on the Indiana state level/or federally, education systems would receive the much-needed increased budgets to hire more teachers, and more college professors, thus creating a stronger support system for Indiana students. Another benefit of the legalization of marijuana would be the reduction in the incarceration rate. This would help with overcrowded county jails and prisons. Other benefits would include city and state infrastructure. The ability to pay for and support the highways, fill potholes, and construct municipal buildings.

An argument can be made that legalizing marijuana would also benefit the people of Indiana. Marijuana has been labeled a Schedule I controlled substance since the 1970s alongside crack, heroin, cocaine, and meth. Of those drugs, the only non-synthetic drug listed is marijuana. Cannabis comes in many forms, but at the end of the day, it is still a plant from the ground that produces a flower that can be dried and smoked, which is prescribed for upset stomach, epilepsy, sore muscles, back backs, chronic pain, cancer, and many forms of psychological disorders, including PTSD.

Limitations

In Indiana, there are obvious limitations to this subject. Indiana is one of 23 states that have not legalized marijuana for either medical or recreational use. Both medical marijuana and adult recreational use are illegal in Indiana, though the use of CBD oil containing less than .3% THC is permitted. Possession of less than 30 grams of marijuana or less than 5 grams of concentrates is a misdemeanor with up to 1 year of imprisonment and a \$5,000 fine. This can generate revenue in the court system as Cannabis use/possession is still illegal in Indiana, but considering recent events, it may benefit the courts more to have this law changed or amended. Indiana, also a conservative state in terms of marijuana legislation, researchers do not see legalization on the state level until it is modified at the federal level of government. To reinforce how important Indiana legislation is behind the times, other states are legalizing Cannabis and generating significant tax revenue for the betterment of school systems, jail overcrowding, and city/state infrastructure. Other limitations could be of other NFP (Non-For-Profits), firms that do not want to see Cannabis legalized. Studies are still being produced that marijuana has no medical benefits for pain when comparing the results for modern medicine, antidepressants, and prescription painkillers (opioids, which are still legal). Not only do firms with different agendas want to keep Cannabis illegal, but certain evangelists, religious communities, and schools fear that is immoral for society to live within the same space as "potheads."

Future Research

Future research could be done with states that have legalized marijuana such as Colorado, Illinois, Oregon, California, etc., to see how the tax revenue is benefiting their state school systems, infrastructure, and government ledgers. Further research could be found in the form of education reforms, job creation, and test scores in states with legal marijuana. These figures could be analyzed versus the state of the economy, and previous school system budgeting under prohibitory marijuana laws. Additional research could be into the previous amount of marijuana possession-related arrests in these states now versus the

laws and regulations before legalizing Cannabis in those respective states. The results would reveal the same information this research is establishing, legalizing marijuana benefits the people more than it is holding the people back.

Finally, why do we care about this? Michigan gets new computers for students, new bridges and roads for local communities, and possibly tax refunds if they have a surplus. Researchers would argue the same benefits could be had in the state of Indiana if marijuana is removed from the Schedule I federal list of controlled substances and the state followed with its legislation. Indiana needs to have the tools, model, and path in place and be ready for the moment federal lawmakers legalize marijuana. Weed dispensaries inject tax revenues into communities and provide the necessary budgeting in a not-so-certain economy. Legalizing marijuana would attract Indiana residents to stay in-state and support in-state infrastructure. Legalization is the goal of advocates, who have been fighting for their right to “blaze up” recreationally or under medical prescription.

REFERENCES

- Aran, A., & Cayam-Rand, D. (2020). Medical Cannabis in children. *Rambam Maimonides Medical Journal*, 11(1), e0003. Retrieved from <https://pubmed.ncbi.nlm.nih.gov/32017680/>
- Breus, D.M. (2022, November 3). Does marijuana affect REM sleep? *The Sleep Doctor*. Retrieved November 24, 2022, from <https://thesleepdoctor.com/cannabis-and-sleep/does-marijuana-affect-rem-sleep/>
- Congressional Digest. (2022, March). Marijuana Legalization: Pros & Cons of Legalizing Marijuana on the Federal Level. *Marijuana Legalization*, 100(3). Retrieved from <https://congressionaldigest.com/issue/marijuana-legalization-3/>
- Cousins, M., Jannausch, M., Jagsim R., & Ilgen, M. (2021). Difference between cancer patients and others who use medicinal Cannabis. *PLOS ONE*, 16(3), e0248227. Retrieved from <https://pubmed.ncbi.nlm.nih.gov/33725004/>
- Department of the Treasury. (2022). *Treasury: Adult-use marijuana payments to be distributed to Michigan municipalities, counties*. Retrieved from <https://www.michigan.gov/treasury/about/news/2022/03/24/treasury-adult-use-marijuana-payments-to-be-distributed-to-michigan-municipalities-counties>
- Electronic prescribing of controlled substances [electronic resource]: Addressing health care and law enforcement priorities: Hearing before the Committee on the Judiciary, United States Senate, One Hundred Tenth Congress, first session, December 4, 2007. United States Senate Committee on the Judiciary. 2008.
- Fiani, B., Sarhadi, K. J., Soula, M., Zafar, A., Quadri, S. (2020). Current application of Cannabidiol (CBD) in the management and treatment of neurological disorders. *Neurological Sciences*, 41(11), 3085–3098. <http://dx.doi.org/10.1007/s10072-020-04514-2>
- Grand View Research. (2021). *(Legal Marijuana Market Size, Share & Trends Analysis Report by Product Type (Flower, Oil, And Tinctures), By Application (Medical, Adult Use), By Region (North America, Europe, APAC, LATAM, Africa), And Segment Forecasts, 2022 - 2030*. Retrieved from <https://www.grandviewresearch.com/industry-analysis/legal-marijuana-market/methodology>
- Hoban, R. (2022, April 14). *The success of Colorado’s Marijuana Tax Dollars*. Retrieved from <https://www.forbes.com/sites/roberthoban/2021/05/23/the-success-of-colorados-marijuana-tax-dollars/?sh=47f5850529df>
- Lambert Initiative for Cannabinoid Therapeutics. (2023). *History of cannabis*. The University of Sydney. Retrieved from <https://www.sydney.edu.au/lambert/medicinal-cannabis/history-of-cannabis.html>
- Mann, B. (2021, June 17). After 50 years of the War on Drugs, ‘what good is it doing for us’. *NPR*. Retrieved from <https://www.npr.org/2021/06/17/1006495476/after-50-years-of-the-war-on-drugs-what-good-is-it-doing-for-us>

- Marcos, C. (2022, April 1). House Approves Bill Legalizing Marijuana. *The Hill*. Retrieved November 17, 2022, from <https://thehill.com/news/house/3256370-house-approves-bill-legalizing-marijuana/>
- National Institute on Drug Abuse. (2021, May 24). *Is marijuana a gateway drug?* Cannabis (Marijuana) Research Report Is marijuana a gateway drug? Retrieved from <https://nida.nih.gov/publications/research-reports/marijuana/marijuana-gateway-drug>
- NORML. (2022, August 16). *Marijuana regulation: Impact on health, safety, economy*. Retrieved from <https://norml.org/marijuana/fact-sheets/marijuana-regulation-impact-on-health-safety-economy/>
- NORML. (2022, September 26). *Indiana laws and penalties*. Indiana Laws and Penalties. Retrieved from <https://norml.org/laws/indiana-penalties-2/#conditional>
- Peet, P. (2004). *Under The Influence: The Disinformation Guide to Drugs*. Illustrated. Consortium Book Sales & Dist.
- Ramirez, M. (2022, October 7). Biden pardons federally convicted marijuana users. Here's where marijuana laws stand in each State. *USA Today*. Retrieved from <https://www.usatoday.com/story/news/nation/2022/10/06/how-many-states-have-legalized-marijuana-cannabis-laws-unpacked/8200166001/>
- Rivas, R. (2022, November 9). *Missouri voters amend state constitution to Legalize Recreational Marijuana • Missouri Independent*. Missouri voters amend state constitution to legalize recreational marijuana. Retrieved from <https://missouriindependent.com/2022/11/09/missouri-voters-amend-state-constitution-to-legalize-recreational-marijuana/>
- The United States Government. (2022, October 6). *Statement from president Biden on marijuana reform*. The White House. Retrieved from <https://www.whitehouse.gov/briefing-room/statements-releases/2022/10/06/statement-from-president-biden-on-marijuana-reform/>
- Thurmond, S. (1984, September 25). *S.1762 - 98th Congress (1983-1984): Comprehensive crime control act of 1984*. S.1762 - 98th Congress (1983-1984): Comprehensive Crime Control Act of 1984. Library of Congress. Retrieved from <https://web.archive.org/web/20190627002729/https://www.congress.gov/bill/98th-congress/senate-bill/1762>