

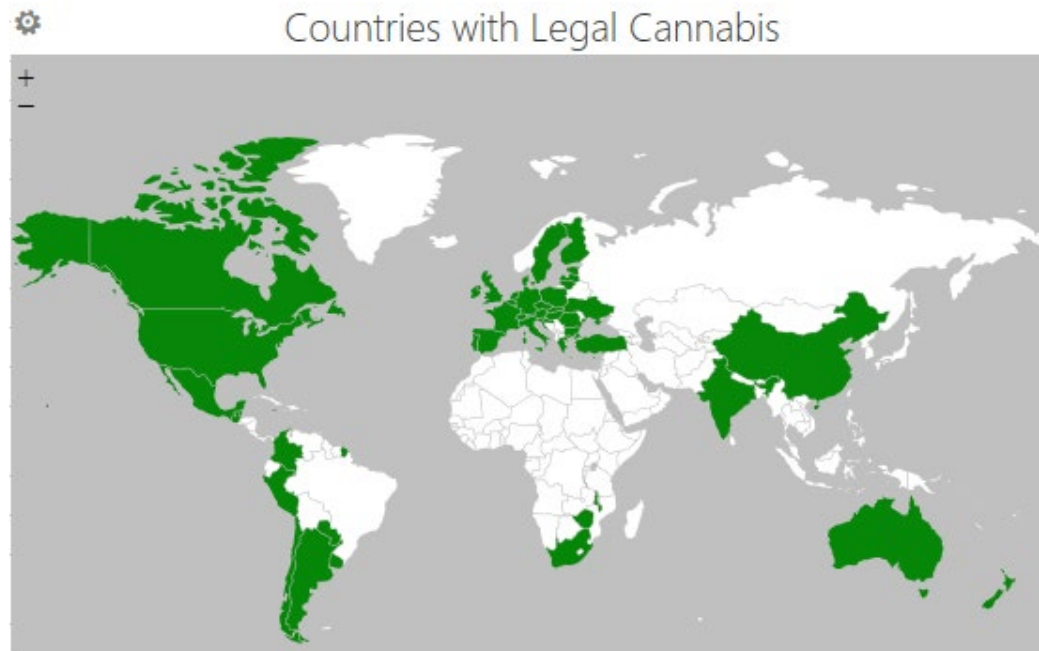
Oregon Cannabis and Hemp Update

A Briefing for Oregon Legislators

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Whitney Economics
January 21, 2022

Global Cannabis Reform is Increasing

- Cannabis is a global industry. The pace of reform is accelerating, driving increased international opportunities.
- Cannabis for industrial purposes is legal in over 65 countries as more governments see the value of cannabis from an economic development perspective.
- Current U.S. regulatory policies are a threat to U.S. global competitiveness.



U.S. Market Update – Top Ten Markets

- U.S. 2021 Legal Revenues - \$25 billion.
- U.S. 2025 Forecasted Legal Revenues - \$44.9 billion.
- Market growth rates returning to pre-pandemic levels.

| Top 10 Legal States - 2021 & 2025 | | | | | | |
|-----------------------------------|---------------|---------|--|------|---------------|---------|
| Rank | State | 2021 | | Rank | State | 2025 |
| 1 | California | \$4,985 | | 1 | California | \$9,093 |
| 2 | Colorado | \$2,019 | | 2 | Florida | \$4,786 |
| 3 | Illinois | \$1,779 | | 3 | New York | \$3,564 |
| 4 | Washington | \$1,695 | | 4 | Illinois | \$2,984 |
| 5 | Florida | \$1,617 | | 5 | Michigan | \$2,418 |
| 6 | Michigan | \$1,450 | | 6 | Arizona | \$2,407 |
| 7 | Arizona | \$1,415 | | 7 | Washington | \$2,037 |
| 8 | Oregon | \$1,117 | | 8 | Colorado | \$1,832 |
| 9 | Pennsylvania | \$974 | | 9 | New Jersey | \$1,733 |
| 10 | Massachusetts | \$953 | | 10 | Massachusetts | \$1,604 |

Source: Whitney Economics

U.S. Market – (Over)/Under Supply

- States with potential legal over supply issue.
- Oklahoma an anomaly. Nevada supply supports tourists.
- California/Oregon excess supply is generally exported.
- Potential moratorium on license seems appropriate

| Population (18+) to License Ratios | | |
|------------------------------------|-----------------------------|-------------------------|
| State | Population / Retail License | Population / Cultivator |
| Oklahoma | 1,130 | 303 |
| Oregon | 4,512 | 2,470 |
| Alaska | 4,073 | 2,471 |
| Montana | 1,944 | 2,871 |
| Colorado | 4,313 | 3,641 |
| Maine | 4,474 | 4,893 |
| Washington | 12,178 | 5,403 |
| California | 30,033 | 6,502 |
| Delaware | 25,559 | 12,779 |
| Rhode Island | 310,942 | 13,138 |
| Nevada | 34,662 | 15,045 |
| Michigan | 9,898 | 15,224 |

Source: Whitney Economics

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U.S. Market – Cultivation Capacity

- A majority of legal cultivation capacity comes from adult-use markets.
- Approximately 75% of demand is satisfied through illicit channels.
- Percentage of illicit supply will decrease significantly through 2025.

| State | Regulatory structure | Total Licenses | Retail Licenses | Cultivation | Processing | Laboratories |
|----------------------|----------------------|----------------|-----------------|---------------|--------------|--------------|
| Oklahoma | M | 13,771 | 2,519 | 9,402 | 1,713 | 28 |
| California | A | 7,888 | 1,031 | 4,762 | 864 | 40 |
| Oregon | A | 2,695 | 760 | 1,388 | 305 | 24 |
| Colorado | A | 2,916 | 1062 | 1,258 | 528 | 20 |
| Washington | A | 2,764 | 484 | 1,091 | 1,176 | |
| Michigan | A | 1,587 | 849 | 552 | 121 | 15 |
| Montana | M/A | 921 | 415 | 281 | 220 | 5 |
| Massachusetts | A | 851 | 363 | 269 | 205 | 14 |
| Alaska | A | 436 | 145 | 239 | 48 | 4 |
| Maine | A | 594 | 257 | 235 | 96 | 6 |
| Nevada | A | 396 | 79 | 182 | 118 | 17 |
| United States | | 36,720 | 9,410 | 19,953 | 5,499 | 212 |

Source: Whitney Economics, State Cannabis Regulatory Agencies

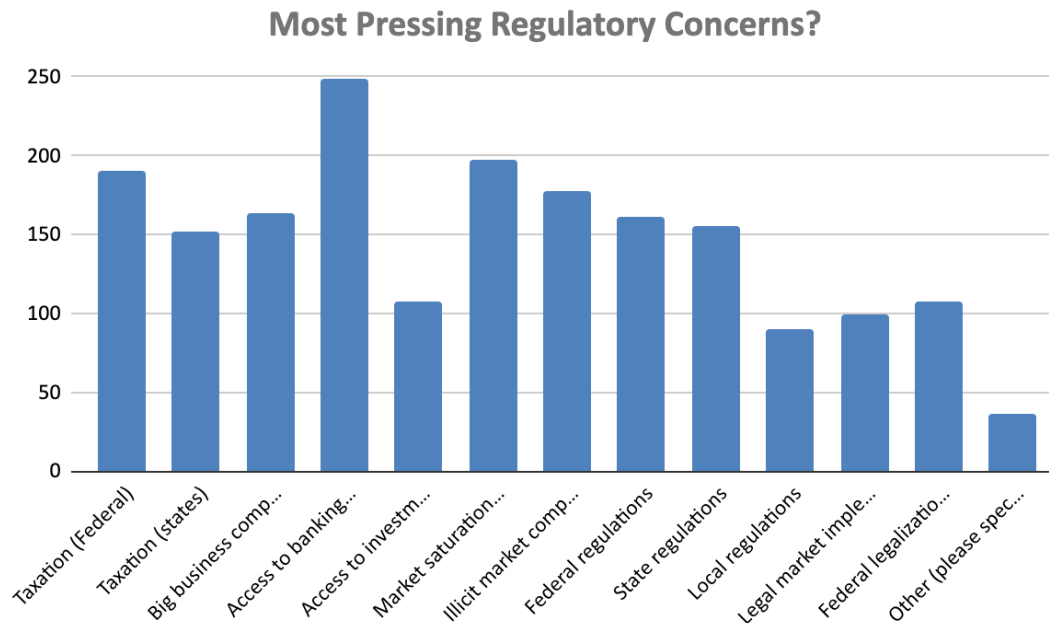
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Illicit to Legal Consumer Conversions

- Oregon Illicit market estimated at \$300 million - \$400 million
- Converting consumers away from the illicit market is a function of both price and access.
- Consumers prefer to purchase products legally and even pay a premium, as long as that premium is not too great.
- If the difference in price of products between illicit market and legal market is too great, consumers will reengage with the illicit market
- In states with high taxes, there is lower participation in the legal market
 - Oregon: 80% - 85% legal participation
 - Washington: 70% - 75% legal participation
 - California: 40%- 45% legal participation

U.S. Market – Special Topic Industry Sentiment Survey

- Banking, taxation and competition (both legal and illicit) were the industry's greatest concerns.

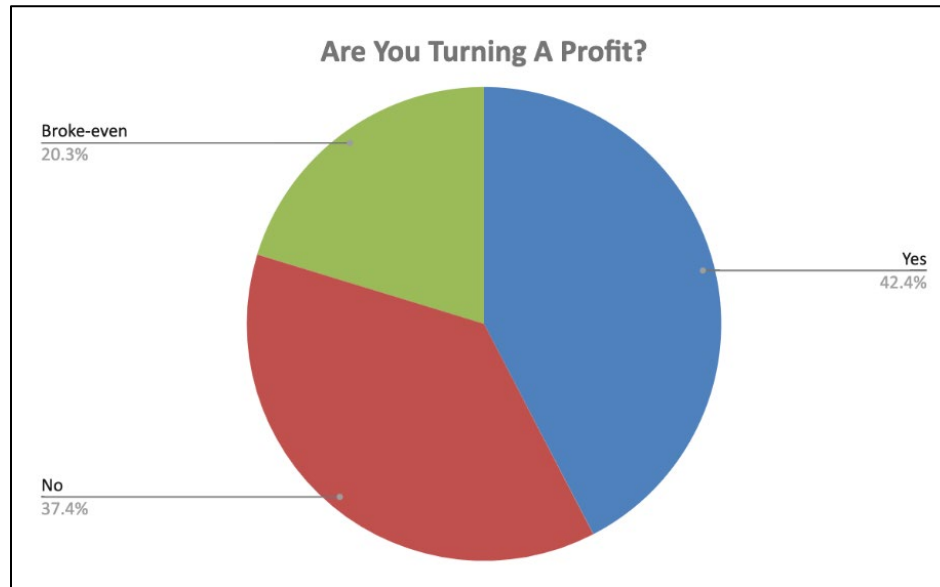


Source: Whitney Economics

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U.S. Market – Special Topic Industry Sentiment Survey

- Most companies not making a profit.
- Industry looking tax fairness, whereas Congress is struggling with tax reform.

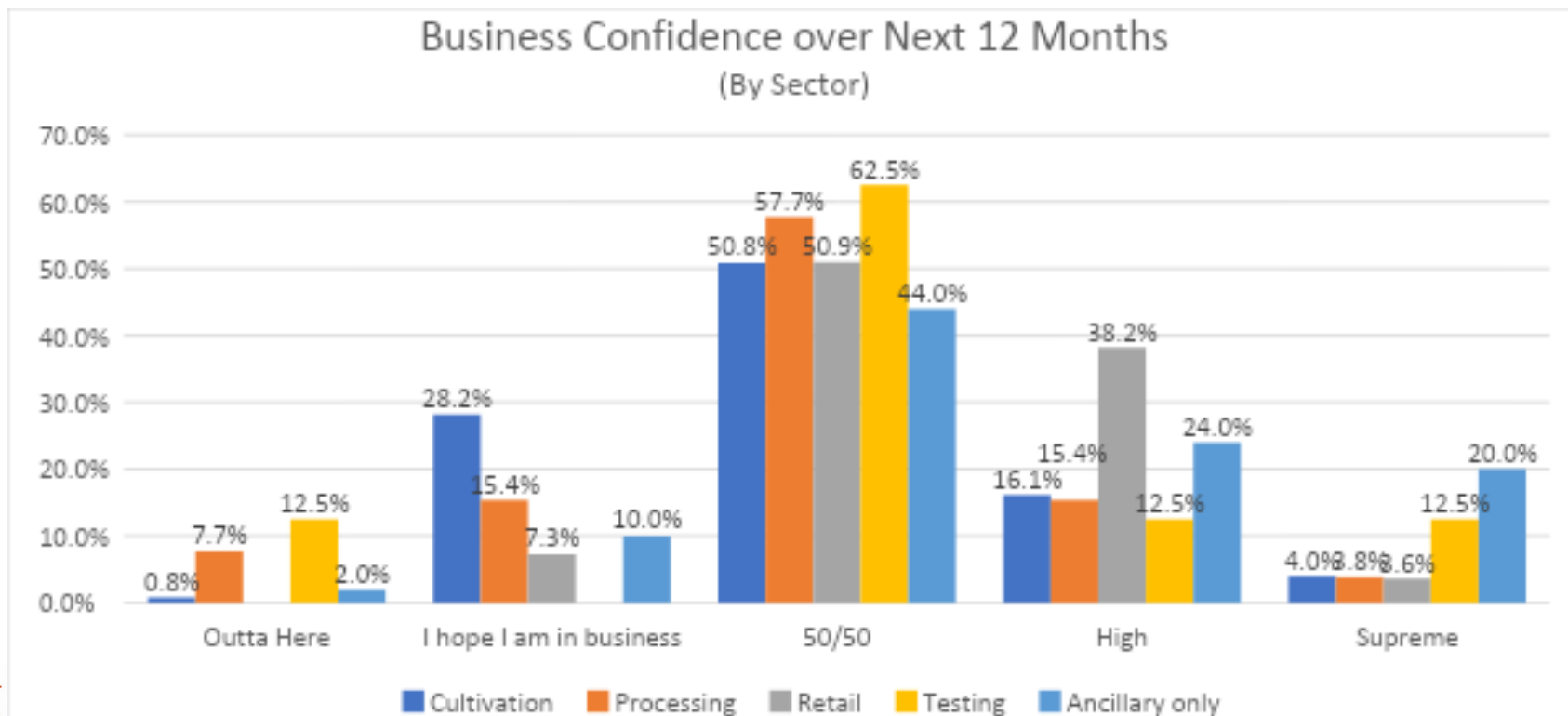


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U.S. Market – Special Topic Industry Sentiment Survey

- Ancillary and retail most positive.
- Cultivators more pessimistic. Nearly 30% of cultivator respondents voiced concerns.



Oregon Hemp

- Oregon has fallen from being ranked 2nd nationally in terms of licensed acres to 9th since 2019.
- If licenses are frozen (like was proposed in meetings recently), will this really address the cartel issues?
- What happens when eastern Oregon farmers want to plant hemp fiber as a rotation crop?
 - Will they be economically impacted when there are already so few farms today?
- Moratorium on licenses does NOT seem appropriate.

| Rank | State | Licensed Acres 2019 | Rank | State | Licensed Acres 2020 | Rank | State | Licensed Acres 2021 |
|------|----------------|---------------------|------|------------|---------------------|------|----------------|---------------------|
| 1 | Colorado | 80,000 | 1 | Colorado | 62,187 | 1 | New York | 33,034 |
| 2 | Oregon | 64,142 | 2 | Tennessee | 51,000 | 2 | Illinois | 22,961 |
| 3 | Kentucky | 60,000 | 3 | Arizona | 34,035 | 3 | Missouri | 21,928 |
| 4 | Montana | 53,000 | 4 | California | 32,505 | 4 | Colorado | 21,082 |
| 5 | Wisconsin | 38,300 | 5 | Kentucky | 32,106 | 5 | Florida | 17,462 |
| 6 | Tennessee | 38,000 | 6 | New York | 30,411 | 6 | Arizona | 14,820 |
| 7 | Michigan | 25,000 | 7 | Oregon | 27,662 | 7 | Kentucky | 12,085 |
| 8 | Oklahoma | 21,635 | 8 | Illinois | 26,264 | 8 | Virginia | 9,736 |
| 9 | North Carolina | 14,400 | 9 | Missouri | 21,836 | 9 | Oregon | 7,339 |
| 10 | Illinois | 12,949 | 10 | Florida | 18,327 | 10 | North Carolina | 6,279 |

Source: Whitney Economics, State Cannabis Regulatory Agencies

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Oregon Hemp Value Decline

- Value of the Oregon hemp crop (Biomass only) has declined from \$5.5 billion to \$22 million since 2019.
- There were only 780 licenses in 2021 a decline of 61% since last year
- How is this driving so much illicit supply and cartel activities? This just does not add up?

| Oregon | 2019 | 2021 | Difference |
|----------------------------------|-------------------------|----------------------|---------------|
| Acres Licensed | 64,142 | 7,339 | -88.6% |
| Pounds per acre | 2,000 | 2,000 | |
| Capacity (Pounds) | 128,284,000 | 14,678,000 | |
| CBD % used in Valuation | 10 | 10 | |
| Price per pound @10% | \$ 42.90 | \$ 1.50 | |
| Value of biomass capacity | \$ 5,503,383,600 | \$ 22,017,000 | -99.6% |

Source: Whitney Economics, Oregon Department of Agriculture, PanXchnage

The Intersection Between Cannabis and Hemp

- Federal Regulators are not deploying comprehensive policies regarding hemp, thereby relying on state legislatures to fill the void
- Patchwork of rules at the state level creating challenges to conduct interstate commerce and grow the legal industry
- Law enforcement having difficulty differentiating legal versus illicit operations
- Federal intervention required, but will do little to impact illicit activities unless interstate commerce or de-scheduling takes place.
- Fear is new state laws could impact R&D for medical and other industrial applications

Summary

- Industry taking a wait and see approach. Difficult to plan with so much uncertainty.
- The next 12 – 24 months will be tough to predict. If anything, expect incremental reform. Midterms will define pace of reform.
- Legal market growth will come from new markets, mature markets have peaked.
- States will continue to reform at a faster pace than feds, but may create distortions in the market.

About Whitney Economics

Beau Whitney, Cannabis Operations and Supply Chain Expert

Beau Whitney is the founder and Chief Economist at Whitney Economics, a global leader in cannabis and hemp business consulting, data and economic research.

Serving an international clientele, Beau is considered one of the leading cannabis economists in the U.S. and globally. His applications of economic principles to create actionable operational and policy recommendations have been recognized by governments, and throughout the economic, investment, business communities.

Beau has provided policy recommendations at the state, national and international levels and is considered an authority on cannabis economics and the supply chain.

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Backup Slides

The Impact of 280E: An Oregon Example

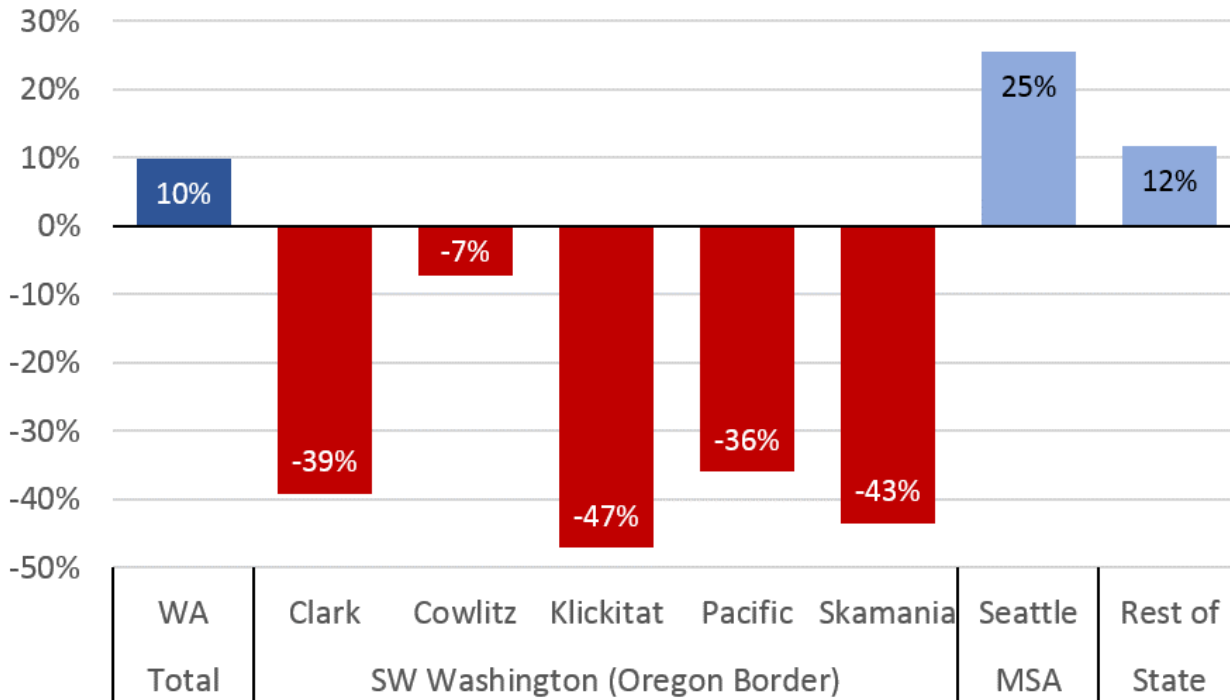
- **Even with record sales and tax revenues, Oregon retailers are struggling.**
 - Average Revenue per Oregon Retailer is \$1.4 million.
- Federal taxes, labor and inventory purchases make up the majority of costs, with little else left for health care, rent, compliance or other expenses.
- The average retailer in Oregon will pay nearly \$150,000 in federal business taxes and is roughly \$15k behind in state sale tax payments.

| Oregon Cost Structure - A 280E example | Annual Numbers | | Remainder | Comments |
|--|-----------------|--|--------------------|--|
| Retail Revenue | \$1,400,000 | | | Based on Regulator report to legislature |
| Product Acquisition Costs | \$700,000 | | \$700,000 | |
| Labor | \$461,000 | | \$239,000 | |
| Federal Taxes | \$147,000 | | \$92,000 | \$7,700 per month left after only Labor, |
| Remainder | \$92,000 | | | Federal Taxes and Product costs |
| <i>Rent</i> | <i>\$90,000</i> | | <i>\$2,000</i> | Average of \$6 - \$10/sq ft |
| <i>Payroll Taxes (FICA)</i> | <i>\$70,994</i> | | <i>(\$68,994)</i> | |
| <i>Health Care Insurance \$6972/employee</i> | <i>\$69,720</i> | | <i>(\$138,714)</i> | After labor, health care is first cut |
| <i>Property Insurance</i> | <i>\$12,000</i> | | <i>(\$150,714)</i> | |
| <i>Security</i> | <i>\$9,000</i> | | <i>(\$159,714)</i> | |
| <i>Bank Account</i> | <i>\$6,000</i> | | <i>(\$165,714)</i> | Hold cash for taxes and get robbed |
| <i>Regulatory License</i> | <i>\$ 5,000</i> | | <i>(\$170,714)</i> | Unavoidable - Some in Excess of \$2.M |
| All of these items are below the line | | | | All of these items are below the line |
| <i>State Business Taxes</i> | | | | |
| <i>Marketing / Advertising</i> | | | | |
| <i>Compliance Costs</i> | | | | |
| <i>Administrative</i> | | | | |
| <i>HR</i> | | | | |
| Net profit | \$0 | | | Tax increases and 280E are putting retailers and suppliers out of busines |

Source: Whitney Economics

Cross Border Effect

Recreational Marijuana Border Effect
Change in Tax Collections After Oregon Began Selling



Percent change from July 2015 to September 2015 average to October 2015 to January 2016 average
Source: www.502data.com, Oregon Office of Economic Analysis

- Consumers are price sensitive (elasticity > -2.0)
- Tax policy plays a large role in illicit to legal consumer conversions
- When Oregon flower came on line for rec users, Washington saw a steep drop off of demand
- Current tax rates:
WA: 37% state + 9% local
OR: 17% state + 3% local

Source: Whitney Economics