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4Q23 Trends in Key States

Cannabis Sector Equity Research



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Summary

- We doubt 4Q results will be a major catalyst for the group (most MSOs will report in the first half of March), with investor focus mainly on rescheduling and reform news flow. That said, top down, sales in most states were flat to down QoQ in 4Q23. The exceptions were CT/OH up mid-single digits, and IL/MD/RI all up low single digits seq. In our coverage, MariMed has exposure to three of these five states, Verano to four, and Green Thumb to all five.
- Prices for the most part are starting to stabilize in states suffering from deflation. But with regulators generally ramping up the pace of licensing, we are seeing revenue per store erosion, which is particularly an issue for MSOs in states with store caps like IL, MA, and NJ, although it should be noted IL and NJ continue to enjoy well above average economics. We are pleasantly surprised with the resilience of retailer economics in states like NV and PA.
- In this report we are more focused on macro top-down trends (we leave MSO predictions for a separate report), but note that based on OMMU data in Florida, 4Q23 volumes were flat seq for Trulieve, up >30% for Cresco, and down double-digits for AYR (see inside for more detail).
- Next reform-type catalysts: DEA agreeing with the HHS recommendation (we expect any time between now and June). While this will be positive for stocks, we worry that a framework will not be announced yet, and that implementation will be left for after the election (i.e., upside could be capped in that case). Re 1/23 (Boies-led lawsuit), we expect the DOJ to file a “motion to dismiss” and see that process dragging on (although no less relevant).
- “Unforeseen catalysts”: Could former President Trump publicly state that he agrees with the rescheduling recommendation (like former SC Governor Haley did)? President Biden “raising the ante” on cannabis, announcing that if re-elected he will legalize recreational cannabis at the federal level (i.e., federally de-schedule)? More MSOs following the Trulieve example and asking for tax refunds for the past three years on the notion 280E should not apply?
- In most states, if vertical integration is not an option, it may be better to be a retailer than a grower/processor (say, AZ), based on the available data. But there are exceptions, like MA and MI, where we think growers are in a better place than retailers (especially, the larger growers).
- State catalysts this year: OH/MN Governor and legislature to agree on rec program regs and start; VA legislature to pass rec rules and lobby for Governor not to veto; FL Supreme Court to allow ballot (Governor sounded constructive last week) and let voters decide in Nov (60% threshold); PA legislature to find agreement on a rec program.



Market Trends: Western States

Arizona (\$1.3Bn annual sales pace): 4Q23 sales down 6% yoy.

- **Sales:** After peaking at ~\$390Mn for the Feb-Apr 2022 three-month period, quarterly sales have trended down to around a \$325Mn pace. Official state data (reported taxable sales) is out through Oct only (down 4% yoy for the month). Headset points to 4Q23 sales down 6% yoy after -4% in 3Q23 (the official data pointed to -2% for 3Q23). In sequential terms, sales are up 3% QoQ, but we attribute that to seasonality (as is the case for the 4Q23 decline in ME).
- **Stores:** There are now 161 dispensaries (22 per 1mn people, which is low for the group), which equates to \$8Mn in annual sales per store. The latter is attractive, but we calculate gross margins have come down to 44% now, or about \$3.5Mn per store. In general, the regs in AZ favor retailer consolidation. There are no caps on store ownership in the state (but the total licenses are limited at 167); Trulieve and Curaleaf lead with, respectively, 21 and 16 stores.
- **Prices:** Wholesale prices have started to recover, but remain below \$800/lb (as per Headset), 2nd lowest in the US after CA. According to Headset, retail prices for flower of \$3.88 (vs. NV \$6.07) are down 24% yoy. Despite the number of dispensaries remaining mostly stable yoy, flower spreads have fallen, according to Headset (\$1.72/gram in 4Q23 vs. \$2.28 in 4Q22). *Note: in AZ, there are no caps on the number of licensed growers.*
- **Brands/Companies** (in this report we do not review company/brand 4Q performance): On the aggregate, AZ is somewhat of a more consolidated market than other western states. House brands (as per the Headset definition) account for 26% of sales. Ex-house brands, the top 5 brands are Jeeter, STIIIZY, The Pharm, Shango, and Select (Curaleaf).
- **Public MSOs in AZ:** Cannabist (2 dispensaries), Curaleaf (16), iAnthus (4), Trulieve (21), Verano (6), Vext (2).

California (\$4.9Bn): 4Q23 sales of \$1.22Bn, down 12% yoy (-3% seq).

- **Sales:** Official state \$ sales data is out only through 3Q23 (-4% yoy and -6% qoq). Headset projects 4Q23 sales down 3% seq (-12% yoy), which translates to \$1.22Bn for 4Q23. Per capita spend of \$125 is below most legal US states. *Note: See our recent [Gold Flora](#) and [StateHouse](#) reports for an in-depth review of the CA market.*
- **Prices:** In general, we could say that, more recently, prices are starting to stabilize, with wholesale prices leading. The latter has led to a squeeze in retailer spreads (companies like Gold Flora and StateHouse are somewhat less exposed to this given they are in part vertically integrated). As per Headset, average flower retail prices in 4Q23 of \$5.23/gram



were down only 2% qoq and 14% yoy. On the other hand, according to Cannabis Benchmarks, wholesale prices of \$746/lb (lowest in the country), although down 2% qoq, were actually up 10% yoy (in part due to a below average harvest in Oct'23). As per Headset, retailer flower spreads of \$2.52/gram in 4Q23 were 21% below 4Q22 spreads, and -5% seq.

- Stores: As per the official state website, there are 1,241 active “commercial retailer” storefront licenses in California (another 253 have expired; 7 have been revoked; 63 have been surrendered), plus another 468 active delivery licenses (“commercial retailer non-storefront”). Some of the delivery licenses may be owned by retailers with store fronts. Revenue per store (>\$4Mn) is above other matured markets, but it varies widely by county: San Diego County is 2x the state average; Santa Clara County is more than 5x the state average, but neighboring Monterey is below the state average at \$3Mn.
- Brands/Companies (in this report we do not review company/brand 4Q performance): CA is consolidated in manufactured formats but fragmented in flower. In aggregate, the five leading brands are STIIIZY, Jeeter, Kiva, West Coast Cure, and WYLD (house brands only have 2% share).
- MSOs in CA: *GlassHouse, Gold Flora, and StateHouse* are focused on the CA market. MSOs with operations in the state include *4Front Ventures, Cannabist, Cresco, Green Thumb, Jushi, Planet13, and TerrAscend*.

Colorado \$1.4Bn: 4Q23 sales down low-teens, but prices stabilizing.

- Sales: Official state \$ sales data is out through Nov only; \$ sales per day for Oct and Nov are down 13% vs. the 3Q23 daily average (Headset points to a 10% seq drop), and down 15% vs. the 4Q22 average. After peaking during COVID, CO cannabis sales have been on a downward trend (-21% in CY22, and -14% for the 12-months thru Nov'23).
- Stores: There are over 1,100 stores in the state (188 stores per 1mn people) compared with 755 at the start of 2022. That translates into about \$1.3Mn sales per store (among the lowest in the US). We expect consolidation to play its course (there are no caps); in the past CO operator Schwazze has targeted 100 stores.
- Prices: While deflation remains an issue, we would say price pressure is starting to ease. Flower retail prices in 4Q23 of \$3.36/gram, as per Headset, were down only 6% yoy and 4% seq. That said, retailer spreads have tightened as wholesale prices have stabilized and even moved up a bit (\$806/lb in 4Q23 vs. \$786/lb in 4Q22, as per Cannabis Benchmarks). Retailer flower spreads fell to \$1.83/gram in 4Q23 from \$2.05 in 3Q23 (Headset data).
- Brands/Companies (in this report we do not review company/brand 4Q performance): On the aggregate, this is a fragmented market. House brands (as per the Headset definition)



account for 13% of sales. Ex-house brands, the top 5 brands are WYLD, Wana, Seed & Strain (Cannabist), Green Dot Labs, and Green Label.

- *MSOs in CO: Cannabis, PharmaCann, and Schwazze, have the largest retail chains in the state (>20 stores each).*

Nevada (\$850Mn): Sales beginning to stabilize; economics remain attractive.

- **Sales:** Official state data is out only through Oct. After consistent yoy declines, cannabis sales seem to be stabilizing with 3Q23 sales down only 1% yoy and Oct monthly sales up 2% yoy. All this as per the official state data (*note: Headset points to a 12 % yoy drop for 4Q23, but we note they still show, wrongly, a yoy decline of 8% for 3Q23*). Visitor volumes to Las Vegas (as per LVCA) were flat yoy in 4Q23 (after +1% in 3Q23 and +2% in 2Q23), but economics have improved, with rev per available room (+17% yoy last 3mo) and gross casino revenue up (+7%).
- **Stores:** As per Nevada's CCB, there are now 104 licensed dispensaries (as of 1/9/24). While that is up from 75 two years ago, rev/store remains about \$8Mn pa, well above the averages seen in western states.
- **Prices:** Wholesale prices are north of \$1,600/lb (>2x AZ) and are stable to up, as per the Headset cost data. Retail prices for flower (as per Headset) of \$6.07, are down 4% seq and -7% yoy, but remain well above all western states (2x on average). We calculate retailer flower spreads of \$2.75/gram (CA \$2.52; CO \$1.83; AZ \$1.72).
- **Brands/Companies** (in this report we do not review company/brand 4Q performance): On the aggregate, this is somewhat a more consolidated market than other western states. House brands (as per the Headset definition) account for 7% of sales. Ex-house brands, the top 5 brands are STIIIZY, Alternative Medicine, WYLD, &Shine (Green Thumb), and CAMP (owned by private operator The Source).
- *Public MSOs in NV: AYR, Curaleaf, Green Thumb, iAnthus, Jushi, Planet13, Verano.*

New Mexico: 4Q sales of \$144Mn, up 18% yoy and flat seq.

- **Sales:** The official sales data point to \$144Mn in total sales for 4Q23 (74% rec, 26% med). Rec sales only began in April 2022, and reached \$107Mn in 4Q23 (+37% yoy). Med sales sales of \$37Mn were down 15% yoy. Total per cap spend (rec+med) of \$288 is 2nd only to Michigan.
- **Stores:** A total of 1,063 store licenses are active, and we understand close to 700 stores have open. New Mexico's average annual revenue per store of \$823K is 2nd worse only to OK. Operator Schwazze says the company stores do 2x the state average.



- Prices: Despite seemingly challenging retailer economics, wholesale prices remain above most western states (>\$1,600 on average in 4Q23, as per Cannabis Benchmarks weekly surveys) and have trended up after bottoming in middle of 2023.
- *MSOs in MO: Schwazze*

Other western states,

- OR (\$948Mn): 4Q23 sales of \$237Mn (official data) were up 1% yoy (-3% seq). It was the first time since 2Q21 that quarterly sales are up yoy. Wholesale prices have stabilized (and even recovered somewhat), but they remain among the lowest in the US (together with AZ, CA, CO, and WA). With over 820 stores (200 per 1mn people), we estimate rev/store pa at only \$1.15Mn.
- WA (\$1.2Bn): 4Q23 sales of \$300Mn were down 5% yoy and seq as per Headset estimates.

Market Trends: Midwest, South, East

Connecticut (\$312Mn): 4Q23 sales up 6% seq.

- Sales: Rec sales began on 10 Jan 2023, but this is what we would call an underachieving market, mostly due to red tape and the slow pace of store openings (the large border with MA does not help either). Sales reached \$78Mn in 4Q23 (60% rec, 40% med), up 6% seq. On an annualized basis, this means only \$86 per capita. CT was an underdeveloped med market, and normally these types of markets are 5-6x larger a year after rec sales begin. But in the case of CT, the jump has only been about 2.2x.
- Stores: The CT regulator has issued so far 31 retail licenses, of which 19 are med/rec ("hybrid"), 9 are rec only, and 3 remain med only. On a population of 3.61mn, this means less than 8 rec stores per 1mn people (one the lowest store densities in the US).
- Prices: Wholesale prices were ~\$2,500/lb in 4Q23 (Cannabis Benchmarks), down 16% yoy despite the start of rec sales. We do not have retail price data.
- *MSOs in CT: Acreage, Curaleaf, Green Thumb, Verano, Trulieve.*



Florida (\$1.93Bn): 4Q23 sales of \$482Mn (Headset), flat seq.

- Sales: Headset projects med \$ sales for FL of \$482Mn (flat seq), up 10% yoy (after +18% in 3Q23, and +7% in 2Q23). OMMU volumes point to 20% yoy growth for flower and 22% for non-flower volumes, and to 2% seq average growth. Crossing the Headset \$ numbers with the OMMU volumes, implies about 10% yoy deflation (consistent with the 3Q23 yoy trends), but also points to stable pricing qoq (-2% at most).
- Stores: There were 615 stores in FL at the end of Dec 2023 compared with 509 at the end of 2022 (25 stores were added in 4Q23). Trulieve remains the leader with 131 stores (it added 8 in 2023, or +7%); Verano is #2 with 74 (+12 or +19%); AYR 63 (+8, +15%); Curaleaf 61 (+6, +11%); Surterra 45 (unchanged); Green Dragon 37 (+20, +118%); Consortium 34 (+5, +17%); Cresco 33 (+12, +57%); VidaCann 26 (unchanged). *Note: Planet13 is in the process of acquiring VidaCann.*
- Operators: Analyzing the OMMU volume data for the various MSOs in the state (in order of flower volume share), we see that in 4Q23 in QoQ terms, Trulieve flo vol was flat (37% share); Curaleaf +3% (11.2%); Verano +13% (11.0%); Parallel +24% (6.8%); AYR -31% (5.5%); Consortium -5% (3.8%); Cresco +36% (3.6%); iAnthus -15% (3.1%); Sanctuary +28% (2.9%); Sunburn +39% (2.2%); VidaCann +1% (1.7%); Green Thumb +18% (1.7%); Cannabist -6% (1.6%); Green Dragon +59% (1.2%). Regarding non-flo volumes (in order of volume share): Trulieve -7%; Curaleaf +7%; AYR -15%; Verano +17%; Parallel +15%; Consortium -5%; Cresco +35%; Sunburn +29%; iAnthus +26%; VidaCann +3%; Sanctuary +23%; Cannabist +13%; Green Dragon +19%; Green Thumb +67%.
- Prices: We have not completed our retail price surveys as of the publication of this report (there is no wholesale market, so there is no wholesale price data).
- MSOs in FL: *Of the MSOs mentioned, the ones with the highest relative exposure to FL are Trulieve, AYR, and Verano, as per our calculations.*

Illinois (\$2Bn): 4Q23 sales of \$511Mn, up 4% yoy and +3% seq.

- Sales: The IL market continues to grow, keeping a +3% qoq pace both in 3Q23 and 4Q23. Rec sales now account for 84% of total cannabis sales. At over \$2Bn, IL is one the top five cannabis markets in the US. That said, total per capita \$ spend of \$163 is half of that seen in Michigan.
- Prices: As per the official state source, retailer prices for flower averaged \$9.84/gram in Dec. Although Dec prices were down 15% yoy (and -27% on a 2-year stacked basis), they have stabilized in recent months and are up since Aug. Importantly, IL retail prices remain above most states. Wholesale prices in 4Q23 averaged \$2,400 (among the highest in the country), or \$5.36 per gram, as per Headset. While retailer spreads of \$4.48 are well above average, they are below those of PA.



- **Stores:** The store count has been increasing at a faster pace than total sales, leading to rev/store dilution. The IL regulator (IDFPR) has issued a total of 178 licenses for adult use dispensaries, including 40 since 7/1/23. Of the total 178 licenses issued, 68 are part of the social equity license program (of a total 185 to be issued). For analytical purposes, we assume all store licenses issued through 9/30/23 have already open. That means IL now has 160 stores in operation now. On the current run sales run rate, this means \$12.8Mn sales per store pa. While this is well above most states, it is down from \$18Mn in 4Q22.
- **Brands/Companies** (in this report we do not review company/brand 4Q performance): On the aggregate, this is a more consolidated market. MSOs own the bulk of dispensaries, and house brands (as per the Headset definition) account for 29% of sales. Ex-house brands, the top 5 brands are High Supply (Cresco Labs), Ozone (Ascend), & Shine (Green Thumb), Cresco (by Cresco Labs), and STIIIZY.
- **Public MSOs in IL:** In total, 13 MSOs have operations in the state. In terms of stores, Ascend 10, Curaleaf 10, Verano 10, Cresco 10, Green Thumb 10, MariMed 5, Jushi 4, Acreage 2, AYR 2, Cannabist 2, 4Front 2, Planet13 1

Maryland (\$1.1Bn): 4Q sales up 2% seq (up 2.3x yoy).

- **Sales:** Rec sales began on 7/1/23. Total sales of \$276Mn in 4Q23 (63% rec, 37% med) were up 2.3x yoy, and up 2% vs. 3Q23. The seq slowdown so soon after the start of rec sales is not what we had expected. That said, per capita spend of \$180 is above most states in the eastern US, and we think this is partly explained by out of state visitors (PA, VA).
- **Prices:** Retail prices for flower (as per Headset) of \$8.93/gram are up from \$6.17 in 2Q23 (when the state was still med). While retail prices were mostly stable seq in 4Q23 (\$9.37 in 3Q23), retailer spreads have tightened (due to supply issues and the overall market slowdown). As per Headset, flower retail spreads of \$3.96/gram in 4Q23 were down from \$4.46 in 3Q23. Wholesale prices in MD are among the highest in the east coast (and above those seen in IL).
- **Stores:** The regulator has issued 101 store licenses. Average annualized revenue per store of \$11Mn is among the best in the US. We calculate gross margins at 44%, so this means close to \$5Mn in gross profit per store.
- **Brands/Companies** (in this report we do not review company/brand 4Q performance): On aggregate, this is a somewhat consolidated market. MSOs own about half of dispensaries, and house brands (as per the Headset definition) account for 26% of sales. Ex-house brands, the top 5 brands are SunMed, Curio Wellness, District Cannabis, Grow West Cannabis, and gLeaf (Cannabist).
- **Public MSOs in MD:** There are 10 in total (Ascend, Cannabis, Curaleaf, Goodness Growth, Green Thumb, iAnthus, MariMed, TerrAscend, Trulieve, Verano).



Massachusetts: 4Q23 total of \$453.5Mn, up 2% yoy, and down 3% seq.

- Sales: 4Q sales reached \$453.5Mn (official state data), with rec at \$400.3Mn (+5% yoy) and med at \$53.2Mn (down 16% yoy and -30% on a 2yr stacked basis). As with most >5-year rec states, med sales have shrunk (12% of total sales). We think of MA as a matured market, with minimal growth momentum now.
- Prices: Retail prices were \$5.66/gram in Dec'23, as per the official state source (PA \$8.79; IL \$9.84). They were down 26% yoy and -56% on a 2-year stacked basis. Wholesale prices, as per Headset, were stable seq but down >30% yoy. Of interest, while retail prices are 36% below PA, wholesale is only 15% below. In short, if an operator is not vertically integrated, in relative terms, in MA it is better to be a grower than a retailer, and the opposite is true for PA, again, all relatively speaking.
- Store count and economics. Despite the lack of market growth, the MA regulator keeps adding retail licenses. A total of 503 licenses had been issued as of 11/27/23: with 326 shown as "commence ops"; 13 "final licenses"; 138 "provisional licenses"; 28 "provisional consideration". For analytical purposes, we exclude provisional consideration licenses, which means the other 475 stores (68 stores pe 1mn people) are yielding only \$2.1Mn rev/store per annum. Retailer spreads are \$3/gram only vs. \$5.26 in PA.
- *Public MSOs in MA: 13 MSOs have operations in the state (cap of 3 rec stores).*

Michigan (\$3.2Bn): Sales down 3% seq.

- Sales: 4Q23 sales reached \$803Mn (official state data), with rec accounting for 98.6% of sales. Total sales were down 3% vs. 3Q23, but they were up a remarkable 27% yoy. No other market with more than four years of rec legal sales is growing at this pace (Canada would be the closest at +13%). Like in California, vertical integration is allowed in MI, and there is no real cap on store ownership (in MA, operators can own only up to 3 stores).
- Prices: As per the official data, rec flower prices are \$3.40 per gram. While retail prices have been stable since Nov'22, they are low compared with states east of the Mississippi (IL \$9.84; PA \$8.79; MA \$5.66). We calculate average wholesale prices at \$2.37/gram in 4Q23 (Headset), which implies paltry retailer spreads of \$1.43/gram. While in relative terms, it seems it is better to be a grower than a retailer in MI, we note there are over 1,000 grower licenses in the state (845 class C; 109 class B; 96 excess grower licenses; 9 class A).
- Stores: There are 751 rec retail stores licensed and 245 med stores licenses. More than half of the med stores, also sell rec, so we estimate there are close to 970 legal stores in MI selling rec cannabis (97 per 1mn people). But store density is worse than what these numbers imply given only 138 municipalities have opted into the rec program, while 1,370



still are out. With about \$3.3Mn in sales per store (true, those stores bordering IN and OH do more) and low spreads, we find store economics challenging in MI.

- Brands/Companies (we do not review qtr performance here): On the aggregate, this is a rather fragmented state (and house brands account for 15% of the market), with no branded wholesale supplier having more than 2.2% share. The top 5 are: Mitten Extracts, Jeeter, STIIIZY, MKX Oil, and Pro-Gro.
- *Public MSOs in MI: Other than SSO Red White & Bloom, TerrAscend has the most exposure to MI. Other MSO in the state include 4Front, Ascend, Cresco, and Verano.*

Missouri: 4Q23 sales of \$349Mn, up 214% yoy and down 3% seq.

- Sales: Rec sales began in Feb'23 and are already at a \$1.4Bn run rate (\$225 per capita). But after the initial 1H23 growth spurt, trends have stalled, with total sales down 1% seq in 3Q23 and -3% in 4Q23. Medical sales accounted for 15% of total sales in 4Q23 vs. 38% in 1Q23 (and 100% in 4Q22).
- Stores: As per the state website, there were 203 dispensaries licensed to operate as of 11/16/23, which compared with other rec states points to low density (33 stores per 1mn people). Annualized sales of \$7Mn per store makes store ownership attractive, but to some extent consolidation is hampered by low ownership caps.
- Prices: We do not have exact price data, but we understand wholesale prices are now about \$1,500/lb.
- *MSOs in MO: Curaleaf, MariMed*

New Jersey (>\$800Mn): Up 16% yoy but underperforming in per cap spend (like CT).

- Sales: Rec sales began on 4/21/22. Total sales continue to grow but at a slower pace. As per the official state data, in 3Q23 (4Q23 sales are not out yet) total \$ sales reached \$206Mn (86% rec; 14% med), up 16% (after +39% in 3Q23 and >200% in 1Q23 and 4Q22). In per caps terms, NJ is underperforming (like CT), with only \$89 per capita. To a large extent, this is due to the slow ramp in store openings (explained by red tape, township pushback, and capital constraints). As expected, the number of med patients has trended down (89K in Jan'24 vs. 111K in Mar'23).
- Stores: There are now 80 licensed stores selling rec cannabis (36 hybrid med/rec and 44 selling rec only), in addition to 14 med only stores. There are another 40 in the pipeline based on "conditional to annual conversions". In total, NJ has issued 778 "conditional" retail licenses. At present, with only 80 stores selling rec, NJ is understored compared with most states in the eastern US (9 stores per 1mn people). On the supply side, besides 30



“annual” cultivation licenses, there are another 35 in the pipeline (“conditional to annual conversions”), besides 317 “conditional” cultivation licenses.

- **Prices:** Our retail surveys point to \$11/per gram compared with \$14 in 2Q23. We believe the lower prices are explained by the rise in the number of stores.
- **MSOs in NJ:** Nine MSOs have operations in the state (*Acreage, Ascend, AYR, Cannabist, Curaleaf, Green Thumb, iAnthus, TerrAscend, Verano*). Trulieve was recently awarded a cultivation license.

Ohio (\$500Mn med market): 4Q23 sales up 6% yoy and +5% seq.

- **Sales:** Voters approved rec in Nov, and now the Governor and Legislature must agree on the shape of the program and start of rec sales. In the meantime, med sales have picked up due to more store openings. Sales of \$125Mn in 4Q23 were up 6% yoy, after +2% in 3Q23 and 0% in 2Q23. There were 175,484 active patients as of 11/30/23 (flat since May 2023), which implies close to \$240 monthly spend per patient.
- **Stores:** The state regulator has issued 118 certificates of operations for dispensaries, plus another 15 provisional licenses. Back in 4Q22, only 72 COs had been issued. Taking 4Q22 and 4Q23 sales, this mean average annualized rev/store is \$4.2Mn now vs. \$6.6Mn a year ago (excluding provisional licenses).
- **Prices:** As per the official state data, retail prices have been trending down (\$5.99 per gram in 4Q23 vs. \$8.11 in 4Q22; down 26% yoy). Supplies have been increasing faster than demand (understandable, as the industry gears up for rec). There are now 21 level I cultivators in operation (23 licensees) and 13 level II (14); this compares with 19 level I and 12 level II at the end of 2022.
- **MSOs in NJ:** 13 MSOs have operations in the state (*Acreage, Ascend, AYR, Cannabist, Cresco, Curaleaf, Green Thumb, Jushi, MariMed, TILT, Trulieve, Verano, Vext*).

Pennsylvania (\$1.6Bn): Growth trends improving; attractive retailer economics.

- **Sales:** Official state data is out only through Oct; on a 3-month moving average basis, Aug-Oct sales were up 5% seq and +9% yoy. Growth trends have been accelerating somewhat, which is remarkable for a so-called “matured” med market. As of 10/31/23, there were 433,638 active patient certifications, or 3.3% of the population. If we take Oct sales of \$130Mn, this translates to average patient spend of \$300 per month (which is well above what we consider the “norm” of \$200, implying some leakage, in our view)
- **Prices:** Although prices are down, they still make for attractive economics, especially for retailers. As per the latest PA DOH report (11/15/23), retail prices in Oct were \$8.79/gram



(down 41% since Jan'21), or ~\$31 for 1/8 oz. PA prices are well above western states, and not far below IL's flower prices of \$9.84/gram (as per that state's official data). Wholesale prices (PA DOH) in Oct were \$3.53/gram or US\$1,581/pound (official data); they are down ~70% from \$10.65 in Jan'21.

- **Stores and retailer economics:** As of 10/31/23, there were 176 operational dispensaries (196 licensed), which makes PA far from dense compared with other states (14 stores per 1mn people). Based on Oct'23 sales of \$130Mn annualized, this means \$8.9Mn rev/store. Retailer spreads of \$5.26/gram are quite robust (60% gross margins). Overheads per store may vary, but on average gross profits of >\$5.3Mn per store are among the highest in the country. Profitability for vertically integrated retailers (most) is even greater. Remarkably, despite the much-discussed deflation, retailer spreads have remained steady, and are actually up vs. Jan'21 (\$4.25).
- **MSOs in PA:** *The largest MSOs in terms of number of stores are Curaleaf, Green Thumb, Jushi, Trulieve, and Verano. Other MSOs include Acreage, Ascend, AYR, Cannabist, Cresco, TerrAscend, TILT.*

Other states: Brief color on these other states, for which we have limited data.

- **NY (\$400Mn market size):** Rec sales amounted to \$150Mn for the first year of operations (the first dispensary opened on 12/28/23) vs. about \$250Mn for medical. According to the regulator, there are 51 adult-use dispensaries in the state at present. In terms of the 10 MSOs operating in the state's medical program, we understand only two so far have co-located rec retail services (Curaleaf in Newburgh; PharmaCann in Albany) and two are wholesaling rec (Cannabist and Curaleaf).
- **VA (~\$230Mn):** We have limited data for the state but note only three operators have licenses in the VA at present (Cannabis, Green Thumb, and Jushi). Cannabist claims 50% share, and disclosed sales of \$53Mn in VA for 2022 (VA and CO both accounted for more than 10% of company sales as per its 10-K). In the case of Jushi, we calculate the company was at >\$50Mn annual run rate by end of 2023.
- **ME (\$224Mn):** Total rec sales increased 26% yoy in 4Q23 to \$56Mn (we do not have med sales data); the yoy pace was consistent with 3Q23. Rec sales began in Oct 2020, and we think continued double-digit yoy growth is explained by mor store openings (there 124 rec dispensaries in operation, and 44 medical). Rec rev/store of \$1.8Mn is among the lowest in the country. Retail prices are down 10% yoy, as per the official data.
- **RI (\$202Mn):** The state began rec sales in Dec 2022, and posted total sales of \$18Mn in Dec 2023, up ~70% yoy. 4Q23 sales of \$51Mn were up 2% seq. Due to taxation issues, med sales remain larger than rec (57% vs. 43%). Per capita spend of \$184 is above most states in the northeast. There are only seven stores in the entire state (or slightly over 6 per 1mn people). As per our surveys, only the three Providence stores face nearby



competition from MA, while the two Warwick stores (one from Green Thumb) and two more in south RI, are more than 40min away from MA.

- MN (\$106Mn): The start of rec sales and shape of the eventual rec program remains in limbo. The state decriminalized possession, use, and home grow of cannabis for people 21 and older. There is no sales data for the current med program, but with 44,260 active patients as of 1/18/24 (state regulator) we estimate the med market at \$106Mn. There are only two licensees there for now, Green Thumb and Goodness Growth.

Table 1: Companies mentioned in this report.

Company name	Ticker	Ticker	Rating	Company name	Ticker	Rating
US MSOs				Canada LPs		
4Front Ventures		FFNTF	Not rated	Aurora Cannabis	ACB	not rated
Acreage Holdings		ACRDF	Not rated	Auxly Cannabis Group	CBWTF	not rated
Ascend Wellness		AAWH	Not rated	Avant Brands	AVTBF	not rated
AYR Wellness		AYRWF	Not rated	BZAM	BZAMF	not rated
Columbia Care		CCHWF	Not rated	Canopy Growth Corporation	CGC	not rated
Cresco Labs		CRLBF	Not rated	Cronos Group	CRON	not rated
Curaleaf Holdings		CURLF	Not rated	Decibel Cannabis Co	DBCCF	Overweight
GlassHouse Brands		GLASF	Not rated	Organigram Holdings	OGI	not rated
Gold Flora		GRAM	Overweight	Rubicon Organics	ROMJF	not rated
Greenlane Holdings		GNLN	Not rated	SNDL	SNDL	not rated
Green Thumb Industries		GTBIF	Overweight	Tilray Brands	TLRY	not rated
Jushi Holdings		JUSHF	Not rated	Village Farms Intl	VFF	Overweight
MariMed Inc		MRMD	Overweight	Other		
Planet 13 Holdings		PLNHF	Overweight	New Lake Capital Partners	LFLY	Overweight
Schwazze		SHWZ	Not rated	Chicago Atlantic REFC	REFI	Overweight
StateHouse Holdings Inc		STHZF	Neutral	Leafly	LFLY	Not rated
TerrAscend Corp.		TSNDF	Not rated	Smooore International	SMORF	Not rated
TILT Holdings, Inc.		TLLTF	Overweight	Springbig	SBIG	Not rated
Trulieve Cannabis		TCNNF	Not rated	WM Technology	MAPS	Neutral
Verano Holdings		VRNOF	Overweight			
Vext Science, Inc.		VEXTF	Not rated			

Note: others mentioned are either brands or private companies

Source: Z&A



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Appendix I: MSOs Footprint



Exhibit 1: MSOs Footprint

	CA	CO	AZ	NV	OR	WA	UT	NM	AR	ND	MN	MI	IL	MO	OH	PA	NJ	NY	CT	RI	MA	ME	VT	MD	DC	DE	VA	WV	GA	FL	
Total	10	5	6	7	2	0	2	1	1	1	2	6	13	2	13	12	9	7	5	1	13	2	2	10	1	2	3	3	1	9	
4Front Ventures	4	1										1	1								1										
Acreage Holdings	8												1		1	1	1	1	1		1	1									
Ascend Wellness	7											1	1		1	1	1				1			1							
Ayr Wellness	7			1									1		1	1	1				1										1
Cannabist Co	16	1	1	1			1						1		1	1	1	1			1			1	1	1	1	1		1	
Cresco Labs	8	1										1	1		1	1					1									1	
Curaleaf	17			1	1	1		1					1	1	1	1	1	1	1		1	1	1	1						1	
Glass House	1	1																													
Gold Flora	1	1																													
Goodness Growth	3										1							1						1							
Green Thumb	15	1	1		1						1		1		1	1	1	1	1		1			1			1			1	
iAnthus	10		1	1	1								1				1	1			1		1	1						1	
Jushi	7	1			1								1		1	1					1						1				
MariMed	6												1	1	1						1			1		1					
Planet 13	4	1			1								1								1									1	
Red White & Bloom	1											1																			
Schwazze	2		1						1																						
StateHouse	2	1			1																										
TerrAscend	5	1										1				1	1							1							
TILT	3														1	1					1										
Trulieve	9		1	1											1	1				1				1				1	1	1	
Verano	13			1	1				1		1	1			1	1	1			1	1			1				1		1	
Vext	2			1											1																

Source: FactSet and company reports



Appendix II: MSO Valuation Comps

Exhibit 2: MSOs Valuation Multiples

US\$Mn 23-Jan-24	Z&A Spot EV / Sales			Z&A Spot EV / EBITDA			Financial Net Debt				Broadly Defined Net Debt			
	2023	2024	2025	2023	2024	2025	Sales		EBITDA		Sales		EBITDA	
							CY24	Current	CY24	Current	CY24	Current	CY24	Current
US MSOs	2.1x	1.9x	1.9x	10.5x	8.6x	7.9x								
Acreage Holdings	1.3x	1.2x	na	9.3x	5.9x	na	-0.8x	-0.9x	-4.2x	-3.7x	-1.0x	-1.2x	-5.3x	-4.6x
Ascend Wellness	1.7x	1.5x	1.5x	8.4x	7.1x	6.2x	-0.4x	-0.4x	-2.0x	-2.1x	-1.0x	-1.0x	-4.7x	-4.8x
Ayr Wellness	1.9x	1.8x	1.7x	8.0x	7.0x	6.2x	-0.8x	-0.9x	-3.2x	-3.7x	-1.3x	-1.4x	-5.1x	-5.7x
Cannabist Co	1.5x	1.4x	1.3x	10.0x	7.7x	6.2x	-0.5x	-0.5x	-2.7x	-3.3x	-1.0x	-1.1x	-5.5x	-6.9x
Cresco Labs	2.1x	2.1x	2.0x	9.8x	8.7x	8.2x	-0.6x	-0.5x	-2.3x	-2.1x	-0.9x	-0.9x	-3.8x	-3.6x
Curaleaf	3.8x	3.6x	3.3x	17.2x	14.6x	11.6x	-0.5x	-0.5x	-1.9x	-2.2x	-1.0x	-1.0x	-3.9x	-4.6x
4Front Ventures	2.9x	2.6x	na	25.9x	12.5x	na	-0.7x	-1.0x	-3.5x	-6.9x	-2.1x	-3.0x	-10.3x	-20.1x
Glass House	3.7x	2.8x	na	23.4x	10.0x	na	-0.1x	na	-0.4x	na	-0.4x	-0.4x	-1.5x	-2.0x
Gold Flora	1.2x	1.1x	na	na	na	na	na	-0.1x	na	na	na	-0.5x	na	na
Goodness Growth	1.1x	1.0x	na	4.5x	4.1x	na	-0.5x	-0.5x	-2.1x	-1.8x	-0.6x	-0.6x	-2.6x	-2.1x
Green Thumb	3.5x	3.3x	3.0x	11.7x	11.2x	9.9x	-0.1x	-0.1x	-0.5x	-0.5x	-0.3x	-0.3x	-1.2x	-1.1x
iAnthus	2.3x	na	na	na	na	na	na	-0.8x	na	-7.5x	na	-1.1x	na	-9.3x
Jushi	1.8x	1.8x	1.7x	11.9x	8.9x	8.2x	-0.7x	-0.7x	-3.4x	-4.7x	-1.3x	-1.3x	-6.4x	-9.0x
MariMed	1.3x	1.1x	1.0x	7.5x	5.2x	4.0x	-0.2x	-0.2x	-1.0x	-1.6x	-0.4x	-0.4x	-1.7x	-2.7x
Planet 13	2.6x	1.6x	1.6x	-14.4x	13.7x	10.5x	0.1x	0.2x	1.0x	21.4x	-0.1x	-0.1x	-0.6x	-11.5x
Schwazze	2.0x	1.7x	na	5.8x	4.2x	na	-0.9x	-0.9x	-2.1x	-3.1x	-1.1x	-1.2x	-2.7x	-3.9x
StateHouse	2.0x	na	na	na	na	na	na	-1.1x	na	-57.5x	na	-1.8x	na	-92.6x
TerrAscend	3.2x	2.7x	2.4x	14.2x	10.9x	8.8x	-0.5x	-0.5x	-2.0x	-1.9x	-0.8x	-0.8x	-3.2x	-3.1x
TILT	0.7x	0.7x	0.6x	20.5x	12.2x	8.2x	-0.3x	-0.3x	-5.1x	-5.7x	-0.6x	-0.6x	-11.0x	-12.3x
Trulieve	2.0x	2.0x	1.9x	7.1x	7.0x	6.8x	-0.5x	-0.5x	-1.7x	-1.7x	-0.7x	-0.7x	-2.5x	-2.6x
Verano	2.7x	2.5x	2.4x	8.1x	7.8x	7.2x	-0.3x	-0.3x	-0.9x	-0.8x	-0.6x	-0.7x	-2.0x	-1.8x
Vext	1.9x	1.2x	na	10.0x	5.0x	na	-0.6x	-1.1x	-2.4x	-8.1x	-0.6x	-1.1x	-2.5x	-8.3x

1) By "current", we mean the latest reported qtr annualized; 2) Multiples calculated using FactSet consensus (when available) for 2023, 2024, and 2025

3) As there are no CY23 sales consensus estimates for Gold Flora, iAnthus, and StateHouse, we take "current" sales for each of them

Source: FactSet and company reports

Exhibit 3: MSOs EV Calculations

US\$Mn 23-Jan-24	FactSet Spot EV	Z&A Spot EV	US\$ price	mn shares	mn deriv	Total Mkt Cap	Financial net debt	Net leases	ST income tax liab.	Conting Cons.	ITM deriv inflow	Total BDND	Pref Stock Min Int
US MSOs													
Acreage Holdings	222	299	0.21	138.1	6.7	30	-214	-21	-34			-269	
Ascend Wellness	737	860	1.32	206.7	13.3	290	-244	-266	-60			-570	
Ayr Wellness	759	898	3.01	76.6	5.0	246	-417	-158	-78	0		-653	
Cannabist Co	718	781	0.51	428.9		218	-272	-246	-45	0		-563	
Cresco Labs	1,114	1,600	2.01	436.5	8.2	894	-415	-174	-111	-6		-706	
Curaleaf	4,024	5,152	4.87	741.9	8.4	3,654	-672	-281	-345	-81		-1,378	119
4Front Ventures	285	337	0.09	648.6		60	-95	-141	-41	0		-278	
Glass House	371	599	5.60	75.3	3.2	440	-26	-11	-21	-29		-87	72
Gold Flora	7	156	0.34	288.3	0.3	98	-16	-32	-5	-5		-58	
Goodness Growth	154	97	0.34	108.7		37	-50	-11				-60	
Green Thumb	3,081	3,674	13.15	236.6	13.7	3,292	-162	-262	-16	-33	91	-382	
iAnthus	218	403	0.03	6,510.5		221	-146	-36				-181	
Jushi	428	482	0.67	196.6	1.1	133	-184	-62	-103	0		-348	
MariMed	129	199	0.30	376.1	5.5	116	-38	-13	-14			-65	19
Planet 13	158	262	0.83	301.7	1.2	251	20	-27	-3			-11	
Schwazze	150	351	0.75	171.3		129	-176	-28	-18	0		-222	
StateHouse	149	200	0.03	255.6	141.0	14	-114	-13	-39	-24	7	-184	2
TerrAscend	729	1,027	1.98	351.2	15.3	724	-186	-51	-59	-6		-303	
TILT	113	122	0.03	381.5	5.0	12	-51	-58	-1			-110	
Trulieve	1,445	2,190	7.37	186.0	3.3	1,394	-537	-173	-81	-4		-796	
Verano	2,119	2,484	5.22	343.4	9.8	1,843	-292	-95	-251	-2		-640	
Vext	49	72	0.24	149.8	0.4	36	-35	-1				-36	

Source: FactSet and company reports



Appendix II: Bio and Disclaimers



Analyst Bio

Pablo Zuanic is a well-known and highly rated equity analyst following the cannabis and psychedelics sector. Over the past four years he launched coverage of over 35 companies (MSOs, LPs, CBD, ancillary, psychedelics), kept close track of sectoral trends, and followed the reform process in the US and elsewhere. His firm Zuanic & Associates publishes equity research on the cannabis and psychedelics sectors, both from a macro/sectoral level in a thematic manner, as well as specific reports on listed stocks. The research service is aimed at institutional investors and corporations. The firm is also available for short term consulting and research advisory projects (www.zuanicassociates.com). At various points in his career, Pablo was II ranked and called as expert witness in industry investigations. He has a deep global background having covered stocks over the past 20 years in the US, Europe, Latin America, and Asia, across consumer sub sectors. Prior employers include JP Morgan, Barings, and Cantor Fitzgerald. An MBA graduate of Harvard Business School, he started his career as a management consultant, which brings a strategic mindset to his approach to equity research. Pablo can be contacted at pablo.zuanic@zuanicgroup.com.



Disclosures and Disclaimers

About the firm: Zuanic & Associates is a domestic limited liability company (LLC) registered in the state of New Jersey. The company's registered address is Five Greentree Centre, 525 Route 73, N Suite 104, Marlton, New Jersey 08053, USA. Pablo Zuanic is the registered agent. The firm publishes equity research on selected stocks in the cannabis and psychedelics sector, as well as thematic macro industry notes. The firm also provides consulting and advisory services. Potential conflicts of interest are duly reflected in the respective specific company reports.

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