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German Imports in 3Q

Cannabis Sector Equity Research



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German Import Growth

German imports grew 2.5x in 3Q24 vs. 1Q24, following changes in the narcotics law back in April, and we expect the German medical cannabis (MMJ) market to continue to grow. In fact, as per our math, the market is still rather under developed (even factoring the 3Q ramp), with MMJ buyers accounting for less than 0.3% of the population. Yes, we realize this is still more of a pharmaceutical cannabis market compared with the US, so we would not expect PA or FL like penetration. That said, in Canada MMJ has 1% population penetration (despite a large rec market), and we think that is quite achievable for Germany. All this bodes well for various companies in our coverage.

Import Growth Ramping Up

German imports reached 20.1 tons in 3Q24, as per BfArM, up 2.5x vs. 1Q24 levels, and almost 1.7x vs. 2Q24.

- Imports had been mostly steady through 1Q24, averaging 7.8ton per qtr in 1H23, 8.4ton per qtr in 2H23 and 8.1 in 1Q24. With the new MMJ rules that started on 4/1/24, we saw a jump to 11.7ton in 2Q24, and now 20.1 in 3Q24.
- The German authorities no longer disclose German pharmacies' purchases (3Q23 was the last time this was disclosed). But for Jan-Sep 2023, purchases averaged 4.8ton per qtr, or about 60% of imports. That figure was consistent with the metrics seen from 2017 thru 2022 (55-60% range). The 40% gap was historically explained by rejections (some imports not meeting German specs) and reexports.
- Even if the rejections increased in 3Q24, as probably most importers rushed to build inventories, maybe running the risk of increased rejections, we'd say the 3Q24 ratio must have been at worse in the 50-55% range.
- If so, 3Q24 pharmacy purchases were in the 10-11 ton range in 3Q24, more than 2x the level of purchases seen in quarters prior to 4/1/24.

Canadian Exports Lead, but Lost Share

As per BfArM, Canada accounted for 8.1ton of the 20.1ton imported by Germany in 3Q24; while Canadian imports were up vs. 4.7ton in 1Q24 (up by about 3.4 ton), Canadian share of total imports fell to 40% in 3Q24 from 52% in CY23 and 59% in 1Q24 (52% in 2Q24). We realize that owing to permits and other factors, shipments can be choppy, but the drop in Canadian share in 3Q is notable (from <60% to 40% now).

- Portugal was the biggest winner, with 21% share of imports in 3Q24 vs. 13% in CY23 (15% in 2Q24, 21% in 1Q24). If we take the total import growth in 3Q24 vs. the qtr average of CY23 of 12.3ton, Portugal accounted for more than a quarter of the total absolute growth.



- The key other sources of imports in 3Q24 were Denmark (2.6ton) with 13% (7% in CY23); Spain and Uruguay each with 5% (each 2% in CY23); and North Macedonia with 4% (3%).
- The Netherlands saw the largest drop, accounting for only 2% of 3Q24 imports vs. 8% in CY23 (Netherlands was the 3rd source country after Canada and Portugal in CY23).

Implications for Key Players

Strong growth in the German market bodes well for several listed cannabis companies with sales there, although we do not have market share data. Also, companies do not split their international sales by country (with ACB providing the most disclosure in this regard so far).

- We understand companies like Tilray and Curaleaf (EMMAC) source a good part of their imports from Portugal (as well as from Canada). There are several private operators in Canada, with Somai Pharmaceuticals a key player.
- Aurora now ships all its exports from Canada (no longer from Denmark)
- Canopy Growth partly outsources its exports to Germany, including from Denmark.

Regarding 3Q results,

- Curaleaf reported international wholesale revenues of US\$18.5Mn for 3Q24 vs. \$11.6Mn (note: the company also reported \$10Mn in international retail sales, all coming from its UK unit). While Curaleaf also ships to Poland, we understand Germany was a big driver of the growth between 3Q and 1Q.
- Aurora reported shipments to Europe of C\$20Mn in the Sep qtr compared with C\$10Mn in the Mar qtr (and C\$10.7Mn in the June qtr). The company's doubling in sales would be ahead of the 73% growth in Canadian exports to Germany between calendar 3Q and 1Q (8.1ton v. 4.7ton). *Note: ACB also reported sales to Australia of C\$15.1Mn for the Sep qtr (vs. C\$9.3Mn for the June qtr).*
- Tilray reported international sales for the Aug qtr of US\$12.2Mn vs. \$13.1Mn in May and \$14Mn in Feb. It does not split international cannabis sales by country or region.
- Canopy Growth reported international sales for the Sep qtr of C\$10.1Mn and \$10.1Mn in Jun and \$11.6Mn in Mar. It does not split cannabis international sales, but it provides consolidated sales by country (total CGC sales in Germany were C\$14.2Mn in the Sep qtr, but that also includes Storz & Bickel).
- The other Canadian LPs exports numbers are smaller. That said, VFF says about a third of its B2B sales get reexported. In the Sep qtr, VFF reported US\$1.4Mn in international sales (vs. US\$1.5Mn in the Mar qtr), and US\$7.4Mn in B2B (US\$6.5Mn in Mar). If we take 1/3, that would mean VFF's exported products in the Sep qtr were almost US\$4Mn (C\$5.5Mn).



- Several other listed Canadian LPs are gearing up for exports, or already exporting. See Decibel's acquisition of AgMedica ([Z&A report](#)), and Organigram's investment in Sanity Group (see [our recent call](#)), as well as Avant Brands continued inroads overseas (see [Aug qtr print](#)).
- There are several large private players in Germany, most of them importing (Demecan is the only one with domestic production), including Canify, Cansativa, CannaMedical, and Vertanical (Four20 Pharma is now owned by Curaleaf) to name a few. Cantourage is the only public listed company; it disclosed sales of 5.5Mn euros (not all in Germany) for the month of October and says it is on track to reach sales of 40Mn euros this CY24.

What This All Means for the Current and Future Size of the Market

If we take 3Q pharmacy purchases at 11 tons and take an average retail prices of 8 euros per gram, this would put the market, in annualized terms, at 352Mn euros or US\$375Mn (Fx 1.06). True, this is small (compared with the current US rec/med market of \$32Bn), but we think it can grow further.

- If we assume monthly spend of ~200 euros (consistent with most US med markets), this would imply about 150,000 patients, or 0.18% of the population. If we took 150 euros (too low, in our view), this would imply ~200,000 patients (0.24% of the pop).
- We realize that despite the change in the narcotics law, the German med market is more of a pharmaceutical nature compared with the MMJ markets in the various US states. In Germany, actual Dr prescriptions are required (with exact amounts, brands, and strains, all indicated; with limited leeway for pharmacies to make changes).
- Still, even if we take the Canada model, with 1% population penetration, that would imply more than 4-5x upside. Importantly, the Canadian medical market "suffers" from the ease of access of the rec market (plenty of supplies, stores, and low prices), which is not the case in Germany.
- So, net, we think it is early days, and believe market growth could accelerate as various issues along the supply chain improve. What specifically? More consistent and ample supplies across price and quality spectrums; new formats being allowed; more drs being willing to prescribe to cash payers (yes, online clinics are growing, offering telehealth, and one can get an Rx prescription for "the cost of a coffee", but it is still early days, in our view); improvements in how brick and mortar pharmacies (which are general pharmacies) process prescriptions; fixing glitches with payment systems for online pharmacies.
- Reimbursement data is out only through June, but it points to mostly unchanged numbers between calendar 1Q and 2Q, implying the bulk of the market growth has been driven by cash payers. We calculate the annual reimbursed market (excluding Dronabinol, Sativex, Epidyolex) is about 130Mn euros. So, cash payers now account for >220Mn euros in sales, in annualized terms, or 63% of total sales.

- For greater context, see our [in-depth report on Germany](#) from earlier this year.

Table 1: Stocks mentioned in this report

| Company name | Ticker | Ticker | Rating |
|-------------------------|--------|--------|------------|
| US MSOs | | | |
| 4Front Ventures | | FFNTF | Not rated |
| Acreage Holdings | | ACRDF | will cover |
| Ascend Wellness | | AAWH | Not rated |
| AYR Wellness | | AYRWF | Not rated |
| Cannabist | | CCHWF | Not rated |
| Cansortium | | CNTMF | will cover |
| Cresco Labs | | CRLBF | Overweight |
| Curaleaf Holdings | | CURLF | will cover |
| GlassHouse Brands | | GLASF | Not rated |
| Gold Flora | | GRAM | Overweight |
| Goodness Growth | | GDNSF | Not rated |
| Green Thumb Industries | | GTBIF | Overweight |
| Grown Rogue | | GRUSF | Not rated |
| Jushi Holdings | | JUSHF | Overweight |
| MariMed | | MRMD | Overweight |
| Planet 13 Holdings | | PLNHF | Overweight |
| Schwazze | | SHWZ | Not rated |
| StateHouse Holdings Inc | | STHZF | Neutral |
| TerrAscend | | TSNDF | Not rated |
| TILT Holdings | | TLLTF | Neutral |
| Trulieve Cannabis | | TCNNF | will cover |
| Verano Holdings | | VRNOF | Overweight |
| Vext Science, Inc. | | VEXTF | Overweight |
| Tech | | | |
| Leafly | | LFLY | Not rated |
| Springbig | | SBIG | Not rated |
| WM Technology | | MAPS | Neutral |

Source: Z&A ratings

| Company name | Ticker | Rating |
|----------------------------------|--------|------------|
| Canada LPs | | |
| Aurora Cannabis | ACB | Neutral |
| Auxly Cannabis Group | CBWTF | not rated |
| Avant Brands | AVTBF | not rated |
| Avicanna | AVCN | will cover |
| BZAM | BZAMF | not rated |
| Cannara Biotech | LOVFF | not rated |
| Canopy Growth Corporation | CGC | will cover |
| Cronos Group | CRON | not rated |
| Decibel Cannabis Co | DBCCF | Overweight |
| Organigram Holdings | OGI | will cover |
| Rubicon Organics | ROMJF | not rated |
| SNDL | SNDL | not rated |
| Tilray Brands | TLRY | Neutral |
| Village Farms Intl | VFF | Overweight |
| Finance Companies | | |
| AFC Gamma | AFCG | Overweight |
| Chicago Atlantic REFC | REFI | Overweight |
| Innovative Industrial Properties | IIPR | will cover |
| New Lake Capital Partners | NLCP | Overweight |
| RIV Capital | CNPOF | not rated |
| SHF Holdings | SHFS | not rated |
| Silver Spike Inv Corp | SSIC | will cover |
| Other | | |
| Intercure | INCR | Overweight |
| LFTD Partners Inc. | LIFD | Overweight |
| Ispire Technology | ISPR | will cover |
| Smooore International | SMORF | will cover |



Appendix I: Valuation Comps

Zuanic & Associates

Exhibit 1: Valuation Comps – MSOs

| US\$m | Z&A Spot EV / Sales | | | | | | Financial Net Debt | | | | Broadly Defined Net Debt | | | |
|------------------|---------------------|-------------|-------------|----------------------|-------------|--------------|--------------------|---------|--------|---------|--------------------------|---------|--------|---------|
| | Z&A Spot EV / Sales | | | Z&A Spot EV / EBITDA | | | Sales | | EBITDA | | Sales | | EBITDA | |
| | Current | CY24e | CY25e | Current | CY24e | CY25e | CY24 | Current | CY24 | Current | CY24 | Current | CY24 | Current |
| US MSOs | 1.7x | 1.6x | 1.3x | 8.4x | 9.6x | 10.8x | | | | | | | | |
| Acreage Holdings | 2.1x | 1.3x | na | 136.3x | 6.7x | na | -1.0x | -1.6x | -5.1x | -104.8x | -1.2x | -2.0x | -6.3x | -129.2x |
| Ascend Wellness | 1.1x | 1.1x | 1.1x | 6.1x | 5.6x | 5.0x | -0.4x | -0.4x | -2.2x | -2.4x | -0.9x | -0.9x | -4.6x | -5.1x |
| Ayr Wellness | 0.9x | 0.9x | 0.9x | 3.5x | 3.9x | 3.5x | -0.8x | -0.8x | -3.3x | -3.0x | -0.7x | -0.7x | -2.9x | -2.6x |
| Cannabist Co | 0.9x | 0.9x | 0.9x | 7.3x | 7.1x | 5.4x | -0.6x | -0.6x | -4.4x | -4.5x | -0.8x | -0.8x | -6.2x | -6.4x |
| Consortium | 1.1x | na | na | 4.0x | na | na | na | na | na | na | na | na | na | na |
| Cresco Labs | 1.5x | 1.5x | 1.5x | 5.4x | 5.4x | 5.5x | -0.5x | -0.5x | -1.8x | -1.8x | -0.7x | -0.7x | -2.3x | -2.3x |
| Curaleaf | 2.2x | 2.2x | 2.0x | 9.8x | 9.8x | 8.1x | -0.5x | -0.5x | -2.3x | -2.3x | -0.9x | -0.9x | -3.8x | -3.8x |
| 4Front Ventures | 2.1x | na | na | 7.7x | na | na | na | -1.0x | na | -3.8x | na | -1.7x | na | -6.5x |
| Glass House | 3.2x | 4.1x | na | 9.9x | 22.8x | na | -0.1x | na | -0.7x | na | -0.3x | -0.2x | -1.7x | -0.8x |
| Gold Flora | 1.0x | 1.0x | 0.8x | 12.1x | 29.5x | 7.6x | na | -0.3x | na | na | na | -0.9x | na | na |
| Goodness Growth | 1.9x | 1.9x | na | -109.5x | 7.8x | na | -0.5x | -0.5x | -2.1x | 29.1x | -0.9x | -0.9x | -3.7x | 51.1x |
| Green Thumb | 2.2x | 2.2x | 2.1x | 7.0x | 6.9x | 6.9x | -0.1x | -0.1x | -0.2x | -0.2x | -0.1x | -0.1x | -0.4x | -0.4x |
| Grown Rogue | 3.8x | na | na | 5.0x | na | na | na | na | na | na | na | na | na | na |
| iAnthus | 1.1x | na | na | 5.7x | na | na | na | -0.9x | na | -4.4x | na | -0.9x | na | -4.5x |
| Jushi | 1.6x | 1.5x | 1.4x | 9.5x | 7.5x | 6.4x | -0.6x | -0.7x | -3.1x | -4.0x | -1.2x | -1.2x | -5.8x | -7.4x |
| MariMed | 1.0x | 1.0x | 0.8x | 8.7x | 8.1x | 4.8x | -0.4x | -0.4x | -3.3x | -3.5x | -0.5x | -0.5x | -4.2x | -4.5x |
| Planet 13 | 1.3x | 1.3x | 1.0x | 31.6x | 17.4x | 6.0x | 0.2x | 0.1x | 2.0x | 3.7x | -0.1x | -0.1x | -0.8x | -1.5x |
| Schwazze | 1.2x | 1.2x | na | 8.6x | 5.6x | na | -0.9x | -0.9x | -4.1x | na | -1.1x | -1.1x | -5.1x | na |
| StateHouse | 1.9x | na | na | 19.7x | na | na | na | -1.1x | na | -11.2x | na | -1.8x | na | -18.9x |
| TerrAscend | 2.1x | 2.1x | 2.0x | 11.5x | 10.5x | 9.5x | -0.6x | -0.6x | -2.9x | -3.1x | -1.0x | -1.0x | -5.2x | -5.7x |
| TILT | 1.0x | 0.9x | 0.7x | -17.7x | na | 73.3x | -0.5x | -0.6x | 15.1x | 9.9x | -0.9x | -1.0x | 26.3x | 17.3x |
| Trulieve | 1.8x | 1.7x | 1.6x | 5.2x | 5.0x | 5.0x | -0.3x | -0.3x | -0.7x | -0.8x | -0.6x | -0.6x | -1.8x | -1.8x |
| Verano | 1.5x | 1.4x | 1.4x | 4.9x | 4.8x | 4.4x | -0.4x | -0.4x | -1.3x | -1.4x | -0.7x | -0.8x | -2.4x | -2.5x |
| Vext | 1.8x | 1.8x | na | 10.3x | 9.1x | na | -0.9x | -0.9x | -4.3x | -4.9x | -0.9x | -0.9x | -4.3x | -4.9x |

1) We take FactSet consensus estimates for CY24e and CY25e multiples

2) By "current", we mean the latest reported qtr annualized

Source: FactSet and company reports

Exhibit 2: Spot EV calculation - MSOs

| US\$m | FactSet | Z&A | US\$ | mn | mn | Total | Financial | Net | Income | Conting | ITM deriv | Total | Pref Stock |
|------------------|---------|---------|-------|---------|-------|---------|-----------|--------|-----------|---------|-----------|--------|------------|
| 18-Nov-24 | Spot EV | Spot EV | price | shares | deriv | Mkt Cap | net debt | leases | tax liab. | Cons. | inflow | BDND | Min Int |
| US MSOs | | | | | | | | | | | | | |
| Acreage Holdings | 244 | 339 | 0.14 | 125.0 | 1.0 | 18 | -261 | -3 | -58 | | | -322 | |
| Ascend Wellness | 597 | 618 | 0.47 | 214.5 | 13.3 | 106 | -241 | -134 | -137 | | | -512 | |
| Ayr Wellness | 634 | 423 | 0.77 | 114.0 | 31.1 | 112 | -359 | 4 | -11 | 0 | 55 | -311 | |
| Cannabist Co | 558 | 434 | 0.11 | 472.7 | 8.2 | 54 | -269 | -26 | -86 | | | -380 | |
| Cansortium | 140 | 123 | 0.09 | 304.9 | 5.6 | 27 | -59 | -9 | -29 | | | -97 | |
| Cresco Labs | 1,020 | 1,100 | 1.39 | 441.0 | 8.9 | 625 | -365 | -56 | -43 | -10 | | -474 | |
| Curaleaf | 2,427 | 2,948 | 2.22 | 743.8 | 11.2 | 1,676 | -678 | -24 | -389 | -56 | | -1,146 | 126 |
| 4Front Ventures | 242 | 160 | 0.03 | 915.2 | 3.8 | 26 | -79 | -8 | -40 | -6 | 0 | -134 | |
| Glass House | 536 | 806 | 7.96 | 81.0 | 3.5 | 673 | -25 | 0 | -4 | -32 | | -61 | 72 |
| Gold Flora | 130 | 135 | 0.04 | 287.7 | 0.1 | 12 | -40 | -34 | -44 | -4 | | -123 | |
| Goodness Growth | 113 | 191 | 0.43 | 230.3 | 4.1 | 102 | -51 | -10 | -29 | | | -89 | |
| Green Thumb | 2,426 | 2,492 | 9.61 | 236.2 | 9.3 | 2,359 | -82 | -28 | -23 | 0 | 0 | -133 | |
| Grown Rogue | 75 | 100 | 0.71 | 143.5 | | 101 | 5 | -2 | -2 | | | 1 | |
| iAnthus | 41 | 203 | 0.01 | 6,615.3 | | 42 | -156 | -6 | | | | -162 | |
| Jushi | 357 | 392 | 0.45 | 196.7 | 0.0 | 88 | -165 | -1 | -139 | | | -305 | |
| MariMed | 144 | 164 | 0.16 | 381.0 | 5.0 | 61 | -66 | -1 | -17 | | | -83 | 19 |
| Planet 13 | 117 | 164 | 0.48 | 325.2 | 0.3 | 156 | 19 | -7 | -16 | -5 | | -8 | |
| Schwazze | 190 | 205 | 0.24 | 80.2 | | 19 | -151 | -2 | -33 | 0 | | -186 | |
| StateHouse | 144 | 200 | 0.02 | 256.4 | 138.6 | 6 | -114 | -10 | -54 | -22 | 7 | -192 | 2 |
| TerrAscend | 486 | 631 | 0.89 | 355.8 | 3.1 | 321 | -172 | -5 | -128 | -4 | | -310 | |
| TILT | 109 | 111 | 0.01 | 390.6 | 4.4 | 3 | -62 | -44 | -2 | | | -108 | |
| Trulieve | 1,309 | 1,997 | 6.80 | 186.0 | 3.3 | 1,287 | -300 | -21 | -384 | -5 | | -710 | |
| Verano | 956 | 1,276 | 1.71 | 356.9 | 8.6 | 625 | -355 | -6 | -285 | -4 | | -651 | |
| Vext | 49 | 67 | 0.14 | 245.5 | 3.4 | 35 | -32 | 0 | | | | -32 | |

Source: FactSet and company reports

Exhibit 3: Valuation Comps – Canada LPs

| Multiples 18-Nov-24 | Z&A Spot EV / Sales | | | Z&A Spot EV / EBITDA | | | Financial Net Debt | | | | Broadly Defined Net Debt | | | |
|-----------------------------|---------------------|-------|-------|----------------------|--------|---------|--------------------|-------|---------|-------|--------------------------|-------|---------|--------|
| | Current | 2024 | 2025 | Current | 2024 | 2025 | Sales | | EBITDA | | Sales | | EBITDA | |
| | | | | | | | Current | CY24 | Current | CY24 | Current | CY24 | Current | CY24 |
| Aurora Cannabis | 1.2x | 1.2x | 1.1x | 9.4x | 11.6x | 7.7x | na | na | na | na | 0.0x | na | -0.4x | na |
| Auxly Cannabis Group | 0.5x | na | na | 2.8x | na | na | -0.4x | na | -2.0x | na | -0.5x | na | -2.8x | na |
| Avant Brads | 0.6x | na | na | 1.8x | na | na | -0.1x | na | -0.4x | na | -0.4x | na | -1.2x | na |
| BZAM | 0.3x | na | na | 3.4x | na | na | -0.2x | na | -2.4x | na | -0.3x | na | -3.4x | na |
| Cannara Biotech | 0.7x | na | na | 4.8x | na | na | 0.0x | na | 0.0x | na | 0.0x | na | 0.0x | na |
| Canopy Growth | 4.0x | 3.7x | 3.4x | -47.7x | -56.5x | 2469.4x | -1.3x | -1.2x | 15.3x | 18.1x | -1.3x | -1.2x | 15.3x | 18.1x |
| Cronos Group | -2.5x | -2.3x | -1.9x | 6.3x | 7.9x | 91.6x | na | na | na | na | 7.7x | 7.0x | -19.3x | -24.0x |
| Decibel Cannabis | 0.8x | 0.8x | 0.6x | 4.7x | 4.3x | 2.9x | -0.4x | -0.4x | -2.1x | -2.0x | -0.4x | -0.4x | -2.1x | -1.9x |
| Nova Cannabis | 0.4x | na | na | 12.0x | na | na | 0.0x | na | -0.1x | na | 0.0x | na | -0.9x | na |
| Organigram Holdings | 0.8x | 0.8x | 0.7x | -11.7x | 23.8x | 9.4x | na | na | na | na | 0.5x | 0.5x | -7.4x | 15.1x |
| Rubicon Organics | 0.5x | na | na | 7.1x | na | na | 0.0x | na | -0.4x | na | 0.0x | na | -0.4x | na |
| SNDL | 0.6x | 0.7x | 0.6x | 15.1x | 402.4x | na | na | na | na | na | 0.2x | 0.2x | 4.4x | 118.0x |
| Tilray Brands | 1.1x | 1.1x | 1.0x | 10.6x | 13.9x | 10.3x | 0.0x | 0.0x | -0.3x | -0.4x | -0.1x | -0.1x | -0.9x | -1.2x |
| Village Farms International | 0.2x | 0.3x | 0.3x | -6.3x | 10.9x | 4.3x | 0.0x | 0.0x | 1.0x | -1.7x | 0.0x | 0.0x | 1.0x | -1.7x |

1) We take FactSet consensus estimates for CY24e and CY25e multiples

2) By "current", we mean the latest reported qtr annualized

Source: FactSet and company reports

Exhibit 4: Spot EV calculation – Canada LPs

| C\$Mn 18-Nov-24 | FactSet Spot EV | Z&A Spot EV | C\$ 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 |
|-----------------------------|--------------------|----------------|--------------|--------------|-------------|------------------|-----------------------|---------------|------------------------|------------------|---------------------|---------------|-----------------------|
| Aurora Cannabis | 298 | 381 | 5.80 | 54.9 | 1.2 | 325 | 27 | -43 | | 0 | | -16 | 40 |
| Auxly Cannabis Group | 166 | 58 | 0.04 | 0.0 | 0.0 | 0 | -41 | -15 | | -2 | | -58 | |
| Avant Brads | 176 | 20 | 0.65 | 10.5 | 0.3 | 7 | -5 | -8 | | | | -13 | |
| BZAM | 112 | 45 | 0.00 | 180.8 | 0.2 | 0 | -31 | -14 | | | | -45 | |
| Cannara Biotech | 85 | 53 | 0.59 | 90.0 | 0.0 | 53 | 0 | 0 | 0 | | | 0 | |
| Canopy Growth | na | 1,008 | 5.15 | 131.6 | 1.5 | 685 | -323 | | | | | -323 | |
| Cronos Group | -93 | -382 | 2.77 | 277.0 | 6.4 | 786 | 1,170 | -2 | | | | 1,168 | |
| Decibel Cannabis | 66 | 75 | 0.07 | 581.9 | 16.3 | 41 | -34 | 0 | | | | -33 | |
| Nova Cannabis | 1 | 118 | 1.76 | 62.1 | | 109 | -1 | -8 | | | | -9 | |
| Organigram Holdings | 126 | 126 | 1.99 | 103.8 | 0.0 | 206 | 80 | | 0 | | | 80 | |
| Rubicon Organics | 26 | 24 | 0.38 | 56.2 | 4.3 | 23 | -1 | 0 | | | | -1 | |
| SNDL | 455 | 584 | 2.69 | 264.3 | 16.2 | 755 | 209 | -38 | | | | 171 | |
| Tilray Brands | 1,240 | 1,328 | 1.86 | 634.4 | 0.0 | 1,182 | -42 | -49 | | -21 | | -112 | 35 |
| Village Farms International | 142 | 122 | 1.08 | 81.0 | | 88 | -19 | -1 | | | | -19 | 15 |

Source: FactSet and company reports

Exhibit 5: Stock Performance

| 17-Nov-24 | Stock Performance | | |
|----------------|-------------------|----------|-----------|
| Ticker | Last 30d | Last 90d | Last 12mo |
| US MSOs | | | |
| Ascend | -29% | -48% | -49% |
| Ayr | -53% | -53% | -55% |
| Cannabist | -38% | -57% | -73% |
| Cansortium | -41% | -30% | -9% |
| Cresco | -10% | -25% | -10% |
| Curaleaf | -25% | -29% | -32% |
| 4Front | -31% | -46% | -83% |
| GlassHouse | -7% | -17% | 74% |
| Gold Flora | -42% | -52% | -58% |
| Vireo Growth | 17% | -29% | 151% |
| Grown Rogue | -4% | 5% | 134% |
| Green Thumb | -6% | -10% | -6% |
| iAnthus | -38% | -55% | -69% |
| Jushi | -20% | -38% | -53% |
| MariMed | 10% | -39% | -46% |
| Planet13 | -7% | -17% | -40% |
| Schwazze | -50% | -45% | -80% |
| StateHouse | MN/A | -50% | -17% |
| Trulieve | -40% | -29% | 26% |
| TerrAscend | -24% | -46% | -50% |
| Vext | -11% | -26% | -44% |
| Verano | -40% | -54% | -58% |

| Stock Performance | | | |
|----------------------|----------|----------|-----------|
| Ticker | Last 30d | Last 90d | Last 12mo |
| Canadian LPs | | | |
| Aurora | -17% | -34% | -4% |
| Avant | -36% | -55% | -86% |
| Auxly | 4% | -9% | 108% |
| Cannara | 6% | -1% | -32% |
| Canopy | -2% | -42% | -27% |
| Cronos | -2% | -8% | 8% |
| Decibel | 51% | 83% | -50% |
| Entourage | -34% | -26% | -51% |
| High Tide | 17% | 41% | 113% |
| Nova | 2% | 2% | 116% |
| OGI | -8% | -17% | 36% |
| Rubicon | -18% | -25% | -37% |
| SNDL | -2% | -9% | 23% |
| Tilray | -12% | -25% | -14% |
| VFF | -14% | -21% | 22% |
| CBD | | | |
| CVSI | 1% | -14% | 49% |
| CWEB | 10% | -2% | -36% |
| LFID | -27% | -27% | -68% |
| International | | | |
| InterCure | -28% | -14% | 49% |
| PharmaCielo | -43% | 46% | 156% |

| Stock Performance | | | |
|-------------------|----------|----------|-----------|
| Ticker | Last 30d | Last 90d | Last 12mo |
| MJ Fincos | | | |
| AFCG | -5% | -7% | -12% |
| CNPOF | -39% | -19% | -1% |
| IIPR | -21% | -12% | 39% |
| NLCP | -12% | -17% | 32% |
| SHFS | -26% | -43% | -46% |
| LIEN | 0% | 10% | 38% |
| REFI | 0% | 2% | 3% |
| Tech | | | |
| LFLY | -18% | -20% | -74% |
| SBIG | 1% | -19% | -54% |
| MAPS | 0% | -17% | -15% |
| Vape parts | | | |
| GNLN | -49% | -88% | -62% |
| ISPR | -10% | -18% | -44% |
| SMORF | 2% | 2% | 49% |
| TLLTF | -43% | -61% | -82% |
| Index | | | |
| S&P 500 | 3% | 10% | 36% |
| S&P 477 | -1% | 2% | 19% |
| Nasdaq | 12% | 15% | 53% |
| MSOS ETF | -24% | -30% | -24% |
| YOLO ETF | -11% | -16% | -1% |

Source: FactSet



Appendix II: Bio and Disclaimers

Zuanic & Associates



Analyst Bio

Pablo Zuanic is a well-known and highly rated equity analyst following the broader cannabinoids (THC cannabis, hemp derivatives, CBD) and consumer sectors. Over the past six years he has launched coverage of over 40 companies in the US, Canada, and overseas; plant-touching as well as service providers (tech; finance); and has also worked with several private companies. He follows closely the reform process in the US, Canada, Germany, Australia, and elsewhere, and relies on a fundamental and data-driven approach to keep track of sectoral trends. His firm Zuanic & Associates publishes equity research, both from a macro/sectoral level in a thematic manner, as well as on listed stocks. The research service is aimed at institutional investors, corporations, and regulators. The firm is also available for short-term consulting and research advisory projects. Approaching the third year since its inception, the firm has collaborated with over 25 companies (in North America and overseas; plant touching and service providers; public and private), both on an on-going basis as well for specific projects. At various points in his career, Pablo Zuanic was ranked in the Institutional Investor magazine surveys and was 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. *He can be contacted via the company's portal www.zuanicassociates.com; via email at pablo.zuanic@zuanicgroup.com; or via X @420Odysseus.*



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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Disclosure: Zuanic & Associates offers advisory and research services, and it also organizes investor events and conferences. The firm is often engaged by various operators in the cannabis industry (both plant touching companies and those providing services, private and public, in North America and overseas) on an ongoing or ad hoc basis. Several of the companies discussed in this report are paying customers of the services provided by the firm.

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