

2/26/2024

Germany: Fact and Fiction

Cannabis Sector Equity Research



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Summary

Key points,

- Despite the rise of online clinics and online pharmacies, and seemingly easier access (and lower prices), we calculate the medical cannabis (MMJ) cash market in Germany served less than 28,000 patients in 2023 (or 0.03% of the population). Clearly, this segment was set to grow, but now (with new regulations approved by the Bundestag on Friday 2/23), it could explode. We try to avoid hyperbole, but if in Florida more than 3.5% of the population is in the MMJ program, how many cash patients can we expect in Germany (a country with an ~85mn population)? Assuming 1% of the population becomes MMJ cash payers, we calculate the German medical market could reach €1.7Bn by end of 2025 (assuming a stable reimbursed market at ~€130Mn, and cash payers spending €150 per month), or about 10x current levels.
- Among listed stocks, we see Canada's two largest exporters (Aurora and Tilray) as the companies best placed to benefit. Tilray claims leadership in the reimbursed German MMJ market, and Aurora is on record saying they lead in the cash market. Several other LPs also ship to Germany (but at a smaller scale, with less assets on the ground) and they should benefit too. Among US MSOs, a Curaleaf affiliate, Curaleaf International Holdings Limited (68.5% owned by CURLF; the owners of the other 31.5% have not been disclosed) owns a German importer (Four20 Pharma), sourcing from Canadian producers and other countries. In the private sector, Grunhorn (largest online pharmacy), Little Green Pharma (supplies Germany from its Danish facility), and domestic MMJ producer Demecan, all seem poised to benefit. On the other hand, online MMJ dedicated clinic operators will face increased competition and fee deflation.
- All that said, various headlines over the weekend and Twitter influencers would have you believe Germany "legalized" cannabis. By now, investors should know "legalize" can mean many things. In the case of Germany, the production, distribution, and sale of adult cannabis via licensed retail shops remains illegal. New rules allowing possession, home growth, and cannabis social clubs, do not necessarily represent a net benefit for the bulk of cannabis companies, and on the margin could be a source of risk.
- All of the above refers to "phase 1" of the country's "legalization" (...) effort, spearheaded by the current coalition government and Health Minister Karl Lauterbach. A phase 2 (unclear if, and when, phase 2 will be approved), would implement 5-year pilot programs for the sale of adult cannabis in various municipalities, but we are doubtful phase 2 will be enacted during this current coalition government. Could pillar 1 be reversed in the future? We doubt it, but that will depend on the make-up of future governments.
- While Friday was good for global cannabis, we are baffled by the way some stocks reacted on Friday to the news the Bundestag had approved "phase 1" (we will not delve into the details here). But therein lies the opportunity for shrewd long-term investors.

What Actually Changed

Medical cannabis was already federally legal in Germany (this is why NASDAQ allows Canadian LPs to be listed in the exchange, despite those LPs selling and/or producing cannabis in Germany), but now it will be easier for Drs to prescribe cannabis as MMJ has been removed from the narcotics list (see below for what this “rescheduling” actually means). A prescription will still be required, but the form and process will be different/easier; for brick & mortar pharmacies (apotheken), the process will also be easier.

Other key changes,

- Individual possession of up to 25 grams of cannabis in public (no practical bifurcation here between adult and medical MJ) is now allowed, and 50 grams at home, for those aged 18 or older. Public consumption will be allowed, with some exceptions (not near schools or at sports venues). We know in NYC (and other places in the US), the decriminalization of possession led to several unlicensed stores selling adult cannabis. In a US context, we are typically fearful of decriminalization in isolation. What happens in Germany will partly depend on enforcement. We are also told that “culturally” Germans will be less prone to open unlicensed retailers and/or to buy from them. Let’s see about that.
- Home cultivation of up to three plants. Unclear how this will impact demand for MMJ. We assume those growing and self-prescribing, will now have less reason to enter the legal MMJ market. But overall, this is probably a small number.
- Adults will be able to join “cannabis social clubs” (of up to 500 members) where members will organize and grow cannabis (this is not the same as home growth) and be allowed to withdraw up to 50 grams per month (30 grams for those 18-21 years old) for personal consumption. Membership fees will cover club costs. People will be able to join only one club. We believe the clubs may impact more the illicit market than take from the existing MMJ market. The law does not allow a role for existing cannabis producers to support or partner with these clubs.
- In terms of timing, assuming the Bundesrat does not call for a “mediation committee” (which could delay the process), the change in the new rules approved by the Bundestag would apply starting 4/1/24 (social clubs could begin by 7/1/24).

Removing MMJ From the Narcotics List

Removing MMJ from the Narcotics list should lead to a significant increase in medical cannabis sales, as the change makes it easier for doctors to prescribe, for patients to access, for pharmacies to store, and for companies to market.

- More doctors are expected to prescribe MMJ as the “pink” narcotic prescription format posed a “real emotional” and “practical” (administrative effort) burden, various operators

have told us. So, the change decreases the barriers legally and mentally for the doctors; it will mean less paperwork and safety checks. They can prescribe “without hesitation or doubts”. Doctors no longer “have to worry that they are making a mistake by prescribing cannabis”. Regular prescriptions are dramatically less regulated in Germany than narcotics, and doctors are more willing (and are more flexible) in issuing prescriptions, whereas they are extremely careful with “pink sheet” prescriptions (narcotics) as they could lose their medical license (in the case something is wrongly prescribed).

- Also, the change for doctors already prescribing cannabis will be, a) that they are now allowed to do this entirely remotely (with a narcotic, the first consultation must be in person), and, b) that there will be more patients but also likely more physicians entering the telemedical cannabis market. Yes, this will put a massive price pressure on the online teleclinics. Since everyone can go to their original doctor for a prescription, why pay extra for a teleclinic? MMJ dedicated clinics will have to drastically lower their price per visit (per prescription).
- It will become easier for patients to get access to a cannabis prescription and self-medicating patients will likely migrate from illicit to medicinal market as that market is more reliable and right now cheaper than the illicit. (*Note: some of the self-medicating patients may prefer home growth and or to join the cannabis clubs*). The increasing demand will be partially covered by the multiple cannabis clinics appearing currently.
- Supply chain: The change will also make it easier for companies in terms of packaging as well as marketing (more leeway on the margin regarding how these products are promoted and marketed, although direct advertising is not allowed). By the same token, pharmacies will no longer need to keep the products in a standalone locked safe.

On Germany's regulations on Narcotics:

Narcotics are the substances and preparations listed in Annexes I to III of the Narcotic Drugs Act. Narcotic drugs ("Betäubungsmittel", BtM) as defined by the German Narcotic Drugs Act ("Betäubungsmittelgesetz", BtMG) are the substances and preparations listed in Schedules I to III of that Act. A substance or preparation is included in these Schedules if this is scientifically justified based on its mode of action. Also, a substance's potential to cause dependence, the possibility of producing narcotics from it, or the extent of abuse as well as its direct or indirect danger to health can lead to its inclusion in the Schedules.

Such substances and preparations are also subject to the BtMG if required based on amendments to the Schedules to the Single Convention on Narcotic Drugs of 1961 or the Convention of 1971 on Psychotropic Substances. In Germany, control of the legal trade in narcotic drugs belongs to the tasks of the Federal Opium Agency at the BfArM.

***Notifications:** In accordance with Section 18 of the German Narcotic Drugs Act ("Betäubungsmittelgesetz", BtMG), all participants in the trade with narcotic drugs who have been issued a licence in accordance with Section 3 BtMG, are obligated to submit regular notifications on all movements and manufacturing processes in that connection. These notifications shall be submitted to the BfArM for the preceding calendar half-year by 31 January and 31 July. The notification obligation starts when the licence is issued and does not end until it expires or is waived. Even if there was no activity with regard to participation in the trade in narcotics within a reporting period, it is still necessary to submit a notification, in such cases a so-called "Fehlanzeige" (nil notification) on the corresponding form. Notifications are to be submitted on the forms (available in German only,) issued by the BfArM - depending on the nature of the trade in narcotics.*

***Record keeping:** The holder of a licence pursuant to Section 3 of the German Narcotic Drugs Act ("Betäubungsmittelgesetz", BtMG) is obligated to document every quantity received or supplied and the resulting stock consecutively and separately for each narcotic drug and each site.*

Data: What the Numbers Imply

Big picture, we calculate there were only 28,000 patients in Germany's MMJ cash market in 2023, or 0.03% of the population. Sure, this can be seen as a glass half empty (the demand is just not there...?) or glass half full (the narcotics designation has hampered access and kept the cash market small). We think the latter scenario is more likely.

Imports and pharmacy purchases. German imports of cannabis reached 25 tons in CY22 (up 20%) and were up 39% for the Jan-Sep period yoy (quite volatile: 1Q +68%; 2Q +32%; 3Q +25% yoy). If we assume +25% yoy growth for 4Q23, then CY23 imports would amount to 34 tons. We realize some of that figure is reexported and some destroyed (as it may be in bad condition, or not meet variance standards). Indeed, pharmacy purchases of cannabis (brick & mortar as well as online pharmacies) tend to account for 55-60% of imports only. For Jan-Sep 2023, pharmacy purchases were up 34% to 14 tons (58% of imports). On a full year basis (58% x 34 tons), we calculate pharmacies bought 20 tons of cannabis. If exclude extracts for dronabinol and pharmaceuticals (Sativex, Epidyolex), we calculate the MMJ in Germany is at a 15-16 ton run rate.

About the reimbursed market. MMJ sold via reimbursed prescription were up 5% yoy for Jan-Sep 2023, and at that pace should reach € 208Mn in CY23 (CY22 €198Mn; CY21 €185Mn). If we exclude dronabinol extracts and finished pharmaceutical products (Canemes, Epidyolex, Sativex), the MMJ reimbursed market reached € 92Mn in Jan-Sep 2023, and this was up 16% yoy. At that pace, MMJ should reach €126 Mn for full CY23 (this market was up 18% yoy in CY22 and 13% in CY21). If we

assume an average price of € 12 per gram (we consider a premium for reimbursed cannabis vs. the market average of € 10/gram), in volumes the reimbursed market was worth 10.5 tons in 2023. If our total MMJ market estimate of 15-16 tons is correct, that means the cash market is one third of MMJ and the reimbursed market accounts for the other two thirds. *Note: in the reimbursed market doctors prescribe only as a last resort, and only for chronic conditions.*

How many cash market patients? We understand there are ~80,000 patients in the reimbursed market (on the €126 Mn estimate from above, that means about ~€130 spent per month). Cash payers probably spend more – let's say €150 per month. If we take our 5-ton estimate (if 10.5 ton is reimbursed, then 5 tons for cash payers gets us to the 15.5ton mid-point of our total market estimate) and assume a price of €10 per gram, that means the cash market was worth €50 Mn in CY23, for about ~28,000 patients. That is only 0.03% of the German population (85mn people)

Projections. On the one hand, our contacts in Germany indicate it is rather simple to get hold of a prescription in Germany in the cash market (even in pink sheet form, under the current narcotics law) via telehealth (after only the first Dr visit in person) and then order from an online pharmacy and have the product delivered at home. In fact, the number of online clinics is up significantly. But on the other hand, the data is clear, only 0.03% of the population is in the cash market. If we think of the 3As (assortment, access, affordability), the market should be larger. Net, we think with the change in the narcotics law there will be more doctors willing to prescribe (not just those in MMJ dedicated clinics). It will be much simpler to request an MMJ prescription from one's regular doctor during a regular visit (i.e., not MMJ originated).

- We assume the reimbursed market will remain flattish (call it €130 Mn), as the change in the narcotics law will not really impact public reinsurers strict standards in reimbursing MMJ. So, then MMJ market growth will need to be driven by the cash market.
- Assuming 1-2% of the population joins the cash market (the US MMJ markets are all cash, with zero reimbursement in practical terms), that would mean a cash market of €1.5Bn to €3Bn (taking €150/mo per patient), with 850K to 1.7mn patients. If we take the low end by Dec'25 (1%) and add the reimbursement market, then Germany's MMJ market (ex Dronabinol and Sativex/Epidyolex) would be close to €1.7Bn, or 10x current levels (now €126Mn reimbursed + €50Mn cash payers).
- In terms of comparisons, 1% of the population is in Canada's MMJ market, >3% in FL, and 4% in PA. We estimate the Israel medical market is more than 3x Germany's despite one ninth of its population. All this said, the scale and timing of the cash payer MMJ market growth (that may be triggered by the new law) is subject to debate, but we believe the growth estimates outlined above are realistic. Still, we recognize there is a scenario where home growth and clubs could slow the rise of the MMJ market.

Other Relevant Stats

German cannabis imports by countries. For Jan-Sep 2023, Canada accounted for 47% of all MMJ imported by Germany, and this was up from 32% in 2022 (31% in 2021). The next contributors for Jan-Sep 2023 were: Portugal 14% (15% in CY22); Netherlands 9% (9%); Denmark 9% (18%); Australia 4% (5%); Colombia 4% (1%). In CY22 Denmark accounted for 18% of imports, but Aurora closed its facility in Denmark and is now shipping from Canada. So, Canadian exports to Germany are set to double for CY23. Tilray supplies Germany from Portugal for the most part. Curaleaf acquired an EU GMP facility in Portugal from Clever Leaves. We understand the bulk of cannabis imported from Denmark now comes from Little Green Pharma (this Australian company bought the Danish facility from Canopy Growth).

Canadian exports. Total dry flower volumes exported from Canada (globally) for Jan-Sep 2023 reached 53.5 tons, up 56% yoy (oil extracts reached 6.2ton equiv. +53% yoy), with 3Q23 up 114% yoy (1Q +48%; 2Q +21%). The momentum is encouraging: CY22 +75%, CY21 +97%, CY20 +131%. For the 12-month period ending March 2023, 44% of Canadian exports went to Australia, 35% to Israel, and only 16% to Germany. In fact, as per our estimates, exports to Australia from Canada grew by a factor of 4x in CY22, while exports to Germany were up in the mid 20s that year (but as mentioned above, they have accelerated since then). The focus of this report is Germany, but we remind investors that Australia has become a key market for Canadian cannabis companies (see ACB's recent deal to acquire Medreleaf Australia).

Canada LP international sales. In terms of international sales disclosed (not just exports from Canada) by the various Canadian LPs (i.e., excluding non-Canadian producers), Tilray has 35% share, followed by Aurora with 30% (Canopy Growth 23%; Organigram 15%; Cronos 11%). Tilray, Aurora, and Demecan (a German company) are the only three licensees to manufacture MMJ in Germany (2.6tons all three combined); given prices were set low by the regulator, we calculate neither of these companies are fully using their allowance at present, and they supply the German MMJ market mainly through imports (Aurora from Canada [no longer from Denmark]; Tilray mostly from Portugal and little from Canada).

Table 1: Companies mentioned in this report.

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

Source: Z&A



Appendix I: Valuation Comps

Exhibit 1: Canada LP Valuation Multiples

Multiples 26-Feb-24	Z&A Spot EV / Sales			Z&A Spot EV / EBITDA			Financial Net Debt				Broadly Defined Net Debt			
							Sales		EBITDA		Sales		EBITDA	
	Current	2024	2025	Current	2024	2025	Current	CY24	Current	CY24	Current	CY24	Current	CY24
Aurora Cannabis Inc.	9.2x	7.5x	6.4x	136.8x	71.8x	47.8x	na	na	na	na	0.1x	0.1x	1.7x	0.9x
Auxly Cannabis Group Inc.	1.4x	na	na	346.5x	na	na	-1.1x	na	-273.2x	na	-1.3x	na	-310.1x	na
Avant Brands Inc	1.8x	na	na	12.7x	na	na	-0.3x	na	-2.1x	na	-0.7x	na	-4.9x	na
BZAM Ltd	0.7x	na	na	-2.0x	na	na	-0.4x	na	1.0x	na	-0.5x	na	1.4x	na
Canopy Growth Corporation	1.5x	1.3x	0.8x	-13.0x	-84.8x	-129.3x	-1.4x	-1.2x	11.8x	77.3x	-1.4x	-1.2x	11.8x	77.3x
Cronos Group Inc	0.1x	0.1x	0.1x	-0.2x	-0.5x	-1.0x	na	na	na	na	8.5x	7.9x	-13.8x	-33.5x
Decibel Cannabis Company Inc	0.8x	0.7x	0.6x	3.7x	3.0x	2.5x	-0.3x	-0.3x	-1.6x	-1.3x	-0.4x	-0.3x	-1.8x	-1.5x
High Tide, Inc.	0.5x	0.4x	0.4x	13.4x	6.3x	4.5x	0.0x	0.0x	-0.7x	-0.3x	-0.1x	-0.1x	-2.6x	-1.2x
Nova Cannabis Inc	0.5x	0.5x	0.4x	4.8x	4.5x	3.5x	0.0x	0.0x	-0.1x	-0.1x	-0.2x	-0.2x	-2.0x	-1.8x
OrganiGram Holdings Inc	1.1x	1.0x	0.9x	304.7x	29.7x	11.7x	na	na	na	na	0.6x	0.6x	168.9x	16.4x
Rubicon Organics, Inc.	0.6x	0.5x	na	5.3x	3.1x	na	0.0x	0.0x	-0.3x	-0.2x	0.0x	0.0x	-0.3x	-0.2x
SNDL Inc.	0.4x	0.4x	0.4x	5.9x	9.3x	5.5x	na	na	na	na	0.1x	0.1x	0.9x	1.5x
Tilray Brands, Inc.	2.1x	1.8x	1.7x	40.2x	16.6x	10.1x	-0.2x	-0.2x	-4.8x	-2.0x	-0.4x	-0.3x	-7.2x	-3.0x
Village Farms International, Inc.	0.5x	0.4x	0.4x	9.8x	8.4x	5.5x	0.0x	0.0x	-1.0x	-0.8x	-0.1x	-0.1x	-2.1x	-1.8x

Source: FactSet, company reports, and Z&A estimates

26 February 2024

Germany: Fact and Fiction

Exhibit 2: Canada LP EV Calculations

C\$Mn 26-Feb-24	FactSet Spot EV	Z&A Spot EV	C\$ price	mn shares	mn deriv	Total Mkt Cap	Financial net debt	Gross leases	ST income tax liab.	Conting Cons.	ITM deriv inflow	Total BDND	Pref Stock Min Int
Aurora Cannabis Inc.	2,393	2,380	4.42	545.4	16.5	2,410	89	-48		-11		30	
Auxly Cannabis Group Inc.	149	162	0.02	1,009.0	249.9	17	-128	-17		0		-145	
Avant Brands Inc	36	46	0.11	258.3	3.4	28	-7	-10				-18	
BZAM Ltd	49	63	0.10	180.8	0.2	18	-31	-14				-45	
Canopy Growth Corporation	na	467	4.55	9.1	1.7	41	-426					-426	
Cronos Group Inc	50	17	3.02	381.1	7.8	1,152	1,138	-3				1,135	
Decibel Cannabis Company Inc	93	98	0.12	409.0	16.7	51	-42	-6				-48	
High Tide, Inc.	201	228	2.45	75.1	0.5	184	-12	-31				-44	
Nova Cannabis Inc	4	130	1.36	57.2		78	-4	-49				-53	
OrganiGram Holdings Inc	177	166	2.74	94.1	4.2	258	92					92	
Rubicon Organics, Inc.	27	24	0.41	56.1	6.9	23	-1	0				-1	
SNDL Inc.	234	379	1.86	236.7	12.8	439	232	-171				61	
Tilray Brands, Inc.	2,126	2,197	2.39	742.7		1,772	-262	-102		-28		-391	34
Village Farms International, Inc.	136	171	1.08	110.2		119	-17	-19				-36	16

Source: FactSet, company reports, and Z&A estimates

26 February 2024

Germany: Fact and Fiction

Exhibit 3: Canada LP Consensus Estimates

C\$Mn Estimates	REVENUES			Adj EBITDA			Adj EBITDA Margins		
	Current	2024	2025	Current	2024	2025	Current	2024	2025
Aurora Cannabis Inc.	258	317	375	17	33	50	6.8%	10.4%	13.3%
Auxly Cannabis Group Inc.	113	na	na	0	na	na	0.4%	na	na
Avant Brands Inc	26	na	na	4	na	na	13.9%	na	na
BZAM Ltd	84	na	na	-32	na	na	-37.9%	na	na
Canopy Growth Corporation	314	346	607	-36	-6	-4	-11.5%	-1.6%	-0.6%
Cronos Group Inc	133	144	171	-82	-34	-16	-62.0%	-23.5%	-9.5%
Decibel Cannabis Company Inc	121	139	160	27	32	39	22.2%	23.3%	24.0%
High Tide, Inc.	497	543	627	17	36	51	3.4%	6.7%	8.1%
Nova Cannabis Inc	271	287	322	27	29	37	10.0%	10.2%	11.4%
OrganiGram Holdings Inc	146	164	188	1	6	14	0.4%	3.4%	7.5%
Rubicon Organics, Inc.	40	48	na	5	8	na	11.4%	16.1%	na
SNDL Inc.	950	999	1,056	64	41	68	6.8%	4.1%	6.5%
Tilray Brands, Inc.	1,051	1,206	1,307	55	133	218	5.2%	11.0%	16.7%
Village Farms International, Inc.	373	406	457	17	20	31	4.7%	5.0%	6.8%

Note: for Decibel and VFF, we use our 2024-2025 estimates; for the rest, we use FactSet consensus if available. Current means latest qtr annualized

Source: FactSet, company reports, and Z&A estimates

26 February 2024

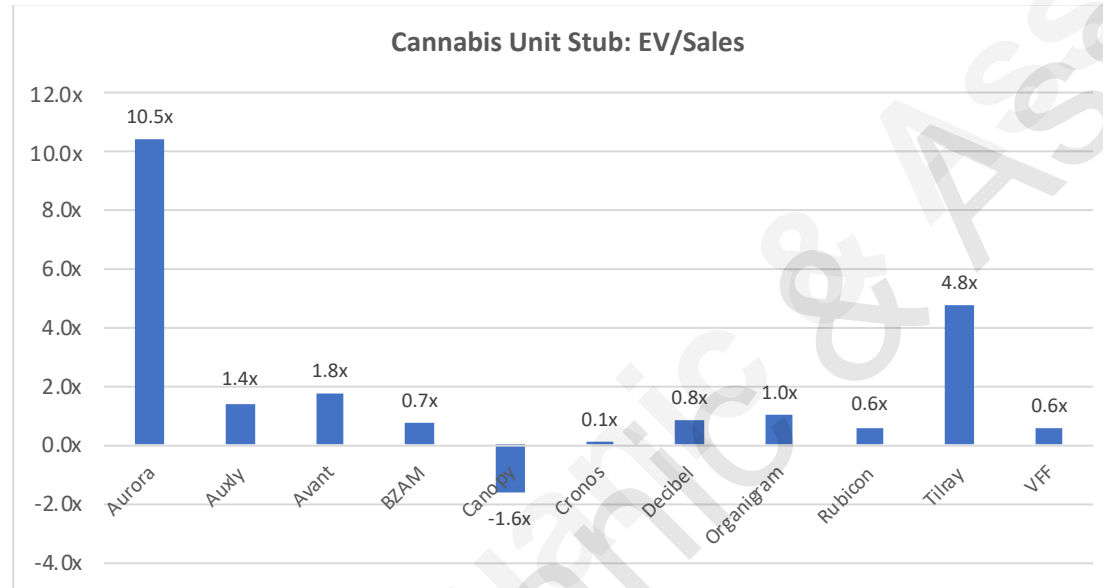
Germany: Fact and Fiction

Exhibit 4: Implied Value of Cannabis Strip for Canada LPs

C\$Mn	Aurora	Auxly	Avant	BZAM	Canopy	Cronos	Decibel	Organigram	Rubicon	Tilray	VFF
Total EV	2,380	162	46	63	467	17	98	166	24	2,197	171
MJ EV	2,335	162	46	63	-306	17	98	166	24	1,800	90
MJ Sales (ann.)	223	113	26	84	192	133	121	167	40	376	155
MJ multiple	10.5x	1.4x	1.8x	0.7x	-1.6x	0.1x	0.8x	1.0x	0.6x	4.8x	0.6x

Source: FactSet; Z&A Estimates

Exhibit 5: Implied Value of Cannabis Strip for Canada LPs



Source: FactSet; Z&A Estimates

Exhibit 6: US MSOs

US\$Mn 26-Feb-24	Z&A Spot EV / Sales			Z&A Spot EV / EBITDA			Financial Net Debt				Broadly Defined Net Debt			
							Sales		EBITDA		Sales		EBITDA	
	2023	2024	2025	2023	2024	2025	CY24	Current	CY24	Current	CY24	Current	CY24	Current
US MSOs	2.2x	2.0x	1.9x	10.8x	9.1x	8.0x								
Acreage Holdings	1.3x	1.2x	na	9.4x	6.0x	na	-0.8x	-0.9x	-4.2x	-3.7x	-1.0x	-1.2x	-5.3x	-4.6x
Ascend Wellness	1.8x	1.6x	1.6x	9.0x	7.6x	6.6x	-0.4x	-0.4x	-2.0x	-2.1x	-1.0x	-1.0x	-4.7x	-4.8x
Ayr Wellness	1.8x	1.7x	1.6x	7.5x	6.6x	5.9x	-0.8x	-0.9x	-3.2x	-3.7x	-1.3x	-1.4x	-5.1x	-5.7x
Cannabist Co	1.4x	1.3x	1.2x	9.4x	7.2x	5.8x	-0.5x	-0.5x	-2.7x	-3.3x	-1.0x	-1.1x	-5.5x	-6.9x
Consortium	1.3x	na	na	3.9x	na	na	na	na	na	na	na	na	na	na
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	4.1x	3.9x	3.6x	18.4x	15.6x	12.5x	-0.5x	-0.5x	-1.9x	-2.2x	-1.0x	-1.0x	-3.9x	-4.6x
4Front Ventures	2.9x	2.6x	na	26.1x	12.6x	na	-0.7x	-1.0x	-3.5x	-6.9x	-2.1x	-3.0x	-10.3x	-20.1x
Glass House	4.3x	3.3x	na	27.2x	13.1x	na	-0.1x	na	-0.5x	na	-0.4x	-0.4x	-1.6x	-2.0x
Gold Flora	1.2x	1.0x	na	na	na	na	na	-0.1x	na	na	na	-0.5x	na	na
Goodness Growth	1.2x	1.1x	na	5.0x	4.6x	na	-0.5x	-0.5x	-2.1x	-1.8x	-0.6x	-0.6x	-2.6x	-2.1x
Green Thumb	3.8x	3.6x	3.3x	12.6x	12.0x	10.7x	-0.1x	-0.1x	-0.5x	-0.5x	-0.3x	-0.3x	-1.2x	-1.2x
Grown Rogue	3.1x	na	na	13.1x	na	na	na	na	na	na	na	na	na	na
iAnthus	1.8x	na	na	na	na	na	na	-0.8x	na	-7.5x	na	-1.1x	na	-9.3x
Jushi	1.7x	1.6x	1.5x	10.8x	8.2x	7.2x	-0.7x	-0.7x	-3.4x	-4.7x	-1.0x	-1.1x	-5.2x	-7.3x
MariMed	1.3x	1.1x	1.0x	7.3x	5.1x	3.9x	-0.2x	-0.2x	-1.0x	-1.6x	-0.4x	-0.4x	-1.7x	-2.7x
Planet 13	2.5x	1.6x	1.6x	-13.8x	14.5x	8.9x	0.1x	0.1x	0.6x	10.8x	-0.1x	-0.2x	-1.1x	-21.1x
Schwazze	2.6x	2.2x	na	8.0x	5.5x	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	3.0x	2.6x	2.3x	13.3x	10.3x	8.4x	-0.5x	-0.5x	-2.0x	-1.9x	-0.8x	-0.8x	-3.2x	-3.1x
TILT	0.7x	0.7x	0.6x	21.2x	12.4x	8.6x	-0.3x	-0.3x	-4.9x	-5.7x	-0.6x	-0.6x	-10.7x	-12.3x
Trulieve	2.5x	2.5x	2.4x	9.0x	8.9x	8.6x	-0.5x	-0.5x	-1.7x	-1.7x	-0.7x	-0.7x	-2.6x	-2.6x
Verano	3.0x	2.8x	2.7x	9.1x	8.8x	8.3x	-0.3x	-0.3x	-0.9x	-0.8x	-0.6x	-0.7x	-2.0x	-1.8x
Vext	1.9x	1.2x	na	9.9x	4.9x	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 consensus estimates for Consortium, Grown Rogue, iAnthus, and StateHouse, we take "current" sales for each of them

Source: FactSet; Z&A Estimates

26 February 2024

Germany: Fact and Fiction

Exhibit 7: Others

			2/26/24	Mkt							Consensus		Cons	Net debt
US\$Mn			Price	Cap	(mn)	Net	Ent		1yr Forward	Consensus	1yF Estimates (US\$Mn)		EBITDA	to Cons
Company name	Ticker	Listing	US\$	US\$MN	Shares	(Debt)	Value		EV/Sales	EV/EBITDA	Sales	EBITDA	mgn %	1yF EBITDA
Service Providers														
AFC Gamma	AFCG	NASDAQ	11.24	229	20	-17	246	<i>finco</i>	3.8x	#N/A	65	#N/A	#N/A	#N/A
Chicago Atlantic	REFI	NASDAQ	16.07	286	18	-52	338	<i>finco</i>	5.5x	#N/A	61	#N/A	#N/A	#N/A
Innovative Industrial Prop	IIPR	NYSE	90.72	2,538	28	-14	2,552	<i>finco</i>	8.2x	10.2x	311	250	80%	-0.1x
New Lake Capital Partners	NLCP	US OTC	16.00	343	21	42	301	<i>finco</i>	6.4x	#N/A	47	#N/A	#N/A	#N/A
River North	CNPOF	US OTC	0.09	12	136	-12	25	<i>finco</i>	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
SHF Holdings	SHFS	NASDAQ	0.99	24	24	7	16	<i>finco</i>	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Silver Spike BDC	SSIC	NASDAQ	10.05	62	6	85	-22	<i>finco</i>	-1.8x	#N/A	12	#N/A	#N/A	#N/A
Leafly	LFLY	NASDAQ	3.60	8	2	-4	11	<i>tech</i>	0.3x	-2.5x	39	-5	-12%	0.8x
Springbig	SBIG	US OTC	0.15	4	27	-6	9	<i>tech</i>	0.3x	2.3x	31	4	13%	-1.3x
WM Technology	MAPS	NASDAQ	0.95	53	55	0	53	<i>tech</i>	0.3x	1.8x	201	29	14%	0.0x
Greenlane Holdings	GNLN	NASDAQ	0.45	1	2	-8	8	<i>vape parts</i>	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
GrowGeneration	GRWG	NASDAQ	2.02	123	61	23	100	<i>pix & shovel</i>	0.5x	-98.7x	222	-1	0%	-22.7x
HydroFarm	HYFM	NASDAQ	0.89	40	45	-165	205	<i>pix & shovel</i>	0.9x	18.5x	226	11	5%	-14.9x
Scotts Miracle Gro	SMG	NYSE	58.84	3,324	57	-2,874	6,199	<i>pix & shovel</i>	1.7x	10.7x	3,648	579	16%	-5.0x
urban-gro	UGRO	NASDAQ	2.32	25	11	6	19	<i>pix & shovel</i>	0.2x	500.2x	116	0	0%	142.1x
CBD, CPG, Pharma, International														
Charlotte's Web	CWBHF	US OTC	0.14	21	152	9	12	<i>CBD</i>	0.2x	-1.1x	78	-12	-15%	-0.8x
Clever Leaves	CLVR	NASDAQ	4.30	6	1	4	2	<i>CBD</i>	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
CV Sciences	CVSI	US OTC	0.03	5	152	-1	6	<i>CBD</i>	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Turning Point Brands	TPB	NYSE	22.68	397	17	-314	711	<i>CPG</i>	1.9x	7.4x	380	96	25%	-3.3x
IM Cannabis	IMCC	NASDAQ	0.33	3	8	-7	9	<i>Intl</i>	0.2x	21.0x	42	0	1%	-15.3x
InterCure	INCR	NASDAQ	1.89	86	46	-2	89	<i>Intl</i>	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Ispire Tech	ISPR	NASDAQ	10.00	542	54	45	497	<i>Intl</i>	1.8x	10.6x	276	47	17%	1.0x
Little Green Pharma	LGPPF	US OTC	#N/A	#N/A	298	0	#N/A	<i>Intl</i>	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
PharmaCielo	PCLOF	US OTC	0.13	20	155	-9	29	<i>Intl</i>	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Smoore Intl	SMORF	US OTC	0.70	4,226	6,078	2,106	2,121	<i>Intl</i>	0.2x	0.8x	13,958	2,652	19%	0.8x
Jazz Pharma	JAZZ	NASDAQ	132.28	8,362	63	-4,936	13,298	<i>pharma</i>	3.2x	7.0x	4,129	1,893	46%	-2.6x

Source: FactSet; Z&A Estimates

26 February 2024

Germany: Fact and Fiction

Exhibit 8: Stock Performance

26-Feb-24	Stock Performance		
	Last	Last	Last
Ticker	30d	90d	12mo
US MSOs			
FFNTF	1%	-43%	-60%
ACRDF	-15%	-11%	-77%
AAWH	25%	32%	34%
AYRWF	-21%	14%	102%
CXXIF	28%	81%	31%
CBSTF	-20%	6%	-37%
CRLBF	2%	24%	10%
CURLF	14%	53%	45%
GLASF	23%	44%	134%
GRAMF	-5%	186%	12%
GDNSF	20%	99%	184%
GTBIF	11%	40%	68%
ITHUF	-42%	-40%	-18%
JUSHF	18%	10%	16%
LOWLF	5%	-35%	-72%
MRMD	-4%	-5%	-38%
PLNH	-6%	6%	-16%
RWBYF	na	na	na
SHWZ	70%	131%	-1%
STHZF	14%	115%	-48%
TSNDF	-5%	15%	10%
GNRS	na	na	na
TLLTF	46%	-6%	-46%
TCNNF	41%	86%	61%
VRNOF	18%	38%	99%
VEXTF	1%	-2%	32%

	Stock Performance		
	Last	Last	Last
Ticker	30d	90d	12mo
Canada			
ALEAF	na	na	na
ACB	-21%	-32%	-63%
CBWTF	1%	8%	-21%
AVTBF	-21%	-25%	-53%
BZAMF	-18%	-33%	-74%
CGC	-28%	-40%	-86%
CRON	9%	9%	3%
DBCCF	-7%	-15%	-27%
ETRGF	0%	-21%	-53%
HITI	-2%	21%	30%
NVACF	32%	84%	79%
OGI	7%	57%	-34%
ROMJF	-15%	-3%	-44%
SNDL	-6%	-9%	-31%
TLRY	-13%	-2%	-38%
VFF	-5%	-9%	-22%
YOLO ETF	8%	25%	7%
CBD, CPG, Pharma, International			
CWBHF	-25%	-34%	-70%
CLVR	56%	112%	-68%
CVSI	-9%	6%	-34%
TPB	-9%	-2%	5%
IMCC	61%	-18%	-70%
INCR	51%	67%	-33%
ISPR	-5%	-17%	#N/A

	Stock Performance		
	Last	Last	Last
Ticker	30d	90d	12mo
Service Providers			
AFCG	-6%	-3%	-29%
AGFY	-10%	-60%	-93%
REFI	-1%	5%	8%
IIPR	-5%	13%	8%
NLCP	-2%	22%	-14%
PW	11%	-1%	-87%
CNPOF	-3%	19%	-22%
SHFS	-13%	31%	27%
SSIC	27%	6%	6%
LFLY	-22%	-32%	-72%
SBIG	4%	10%	-81%
MAPS	8%	13%	-14%
GNLN	-2%	-10%	-87%
GRWG	-17%	-26%	-53%
HYFM	-7%	2%	-57%
SMG	-1%	5%	-29%
UGRO	50%	105%	-38%
CBD, CPG, Pharma, International			
LGPPF	#N/A	#N/A	#N/A
PCLOF	-15%	-11%	-35%
SMORF	3%	-24%	-45%
JAZZ	10%	9%	-9%
Index			
S&P 500	5%	12%	28%
MSOS ETF	14%	43%	43%

Source: FactSet



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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