GreensKeeper
ASSET MANAGEMENT INC.

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Investment Memo – October 28, 2018

By Michael P. McCloskey
Founder and Chief Investment Officer

Tilray Inc. (Nasdaq:TLRY)

Position:	Long Tilray put options (our firm does not take short positions).
Stock Price:	$108.08
Target Price:	< $20.00
Timing:	< 6 months
Catalyst:	IPO Lock-up Expiry – January 2019

Note: All dollar figures are $US unless stated otherwise.

Investment Summary

With the recent legalization of recreational cannabis, our home country of Canada is at the global forefront of an emerging industry – the legalized production and sale of medical and recreational cannabis. Despite the opportunity, we view many Canadian cannabis sector stocks to be in bubble territory driven by rampant retail speculation.

We have identified several significantly overvalued cannabis stocks including Tilray. Our analysis of Tilray, based on what we believe are reasonable assumptions, basic laws of economics and simple math values the company's shares below $20.00 versus the current quote of $108.08.

The possibility of additional selling of Tilray shares due to the pending expiry of the IPO lock-up in January 2019 combined with nervous investor sentiment due to broader market weakness leads us to conclude that a large selloff in Tilray is entirely possible in the short-term. Accordingly, we have purchased and currently hold Tilray put options (our firm does not take short positions).

Background

On October 17, 2018, Canada legalized the production, distribution, sale and possession of cannabis (also known as marijuana) for recreational use albeit subject to significant regulation.(1) This is in addition to the use of cannabis for medical purposes which has been gradually permitted in Canada via court decisions and legislation since 2001. Edible cannabis products are still prohibited but are being legalized in October 2019.

Disclosure: The GreensKeeper Value Fund and certain accounts managed by us currently own put options on Tilray and certain other securities mentioned in this report.

1. http://www.justice.gc.ca/eng/cj-jp/cannabis/

As a result of the ongoing legalization of the sector, there has been a rush of private and publicly-traded producers, distributors and retailers looking to capitalize on this large market opportunity. According to Statistics Canada, at of October 26, 2018 there were 132 licensed producers/sellers of cannabis.(2) The lengthy lead times involved in constructing production facilities, obtaining mandatory licenses and securing distribution has led to short-term supply shortages at inception.(3) These growing pains will abate as the market evolves.

Many of these companies (more than 60 by our count) have raised capital via the public markets and secured listings on the Toronto Stock Exchange or the Canadian Securities Exchange. A select few have also listed on major US markets (NYSE:ACB, NYSE:CGC, Nasdaq:CRON, NASDAQ:TLRY) with more likely to follow to gain access to the deeper pool of US investors. There are also numerous private companies involved in the sector that have raised capital privately.

The legalization of the sector has also attracted the attention of a number of large consumer products companies. For example, beer and wine producer Constellation Brands (NYSE:STZ) has invested $4 billion in Canopy Growth (NYSE:CGC), Molson-Coors (NYE:TAP) has formed a joint venture with HEXO Corp. (TSX:Hexo)(4) and Pepsi and Coke have both been rumored to be looking at the sector.(5) We estimate that approximately $10 billion of capital will have been raised for cannabis companies during 2018 alone.(6)

Total Addressable Market

Given that the recreational market is only two weeks old, there is limited historical data on the size of the addressable market in Canada. However, we have made an educated guess based on publicly available data.

Despite the US federal prohibition of marijuana use, the state of Colorado has permitted and regulated its use since 2014.(7) The Colorado cannabis market is maturing with demand actually starting to decline. Demand in both 2016 and 2017 was approximately 208,600 kilograms (kg) with 91% coming from state residents and 9% from "visitors" - likely recreational tourists.(8)(9) These figures are for legal purchases and a sizable illicit market continues to exist.

We believe that it is reasonable to assume that per capita usage, the split between medical and recreational usage and the size of the illicit market in Canada at maturity will be similar to the Colorado experience. We do however anticipate a lower number of visitors (cannabis tourists) than the Colorado experience due to legalization throughout Canada.

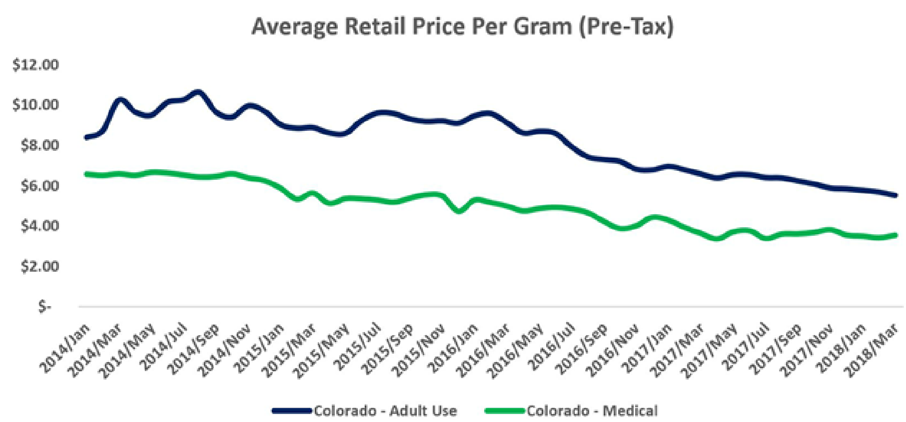
2. https://www.canada.ca/en/health-canada/services/drugs-medication/cannabis/licensed-producers/authorized-licensed-producers-medical-purposes.html#a2
3. https://www.bnnbloomberg.ca/quebec-pot-stores-to-limit-operating-hours-due-to-supply-shortages-1.1159040
4. https://business.financialpost.com/cannabis/constellation-brands-and-molson-coors-are-in-now-the-cannabis-world-is-wondering-whos-next
5. https://www.businessinsider.com/cannabis-deals-could-pay-off-for-coke-pepsi-2018-9
6. GreensKeeper estimates. See also https://mjbizdaily.com/big-hits-cannabis-companies-on-pace-to-raise-record-8-billion-in-2018/ and https://www.theglobeandmail.com/business/streetwise/article-investment-banks-reap-rewards-with-28-billion-in-cannabis-equity/
7. https://www.colorado.gov/pacific/marijuana/laws-about-marijuana-use
8. https://www.colorado.gov/pacific/sites/default/files/MED%20Demand%20and%20Market%20%20Study%20%20082018.pdf
9. Cannabis consumption/supply quantities are typically described using flower weight, such as grams/kilograms of marijuana flower equivalent. See the Appendix for additional details.

		Market Size (US$MM)		
	Population (MM)	Medical	Recreational	Total
Colorado	5.61	$417	$1,091	$1,508
Canada (adj. - legal channels)	36.71	$1,613	$4,226	$5,839

Source: GreensKeeper, Colorado Dept. of Revenue

Based on these assumptions, we estimate the Canadian retail market at maturity to be no more than US$6 billion per year. Other analysts have suggested similar estimates.(10) Tilray's most recent investor presentation (October 2018) cites a recreational market opportunity of $1.4 to $3.2 billion in 2019 and a long-term market opportunity of US$4.7 to $7.6 billion. We believe that the top end of the company's range is a little high.

We also anticipate that average retail prices will decline over time as production (supply) increases due to limited barriers to entry. This has been the experience in the Colorado market: (11)



It is also helpful to measure the market size in terms of kilograms (kg) of annual demand. Using current Canadian retail prices(12) of CAD$8.50-$12.50/g (US$6.50-$9.57/g) as a guide, this implies a total Canadian legal market of approximately 610K-900K kg of cannabis demand per year. Other analysts have estimated the market at between 600K-800K kg/year.(13)

On the supply-side, the top-ten licensed producers alone have already announced capacity plans exceeding 900K kg by the end of 2019.(14) That figure doubles to 1,800K kg (or twice predicted domestic demand) if we include the remainder of the publicly-listed licensed cannabis producers. There will also be additional supply from private companies and many of the hundreds of additional late-stage license applicants. The current situation of limited supply is unlikely to last for very long. In addition, in order to eliminate the illicit market, legal channels will need to be price competitive with the black market where cannabis is estimated to sell for approximately CAD$6.83/g (US$5.23/g).(15) This future supply glut will put downward pressure on pricing and margins throughout the value chain. Even if the above production figures are inflated (which we believe to be the case), supply should exceed domestic demand within a few short years.

10. *See https://www.bnnbloomberg.ca/canadian-legal-pot-sales-could-reach-6-5b-by-2020-and-even-top-spirits-cibc-says-1.1074098 and https://www2.deloitte.com/content/dam/Deloitte/ca/Documents/consulting/ca-cannabis-2018-report-en.PDF*
11. *https://www.coloradopotguide.com/colorado-marijuana-blog/article/marijuana-prices-in-denver-and-colorado-winter-20172018-and-spring-2018-update/*
12. *https://globalnews.ca/news/4563144/heres-how-much-cannabis-costs-across-canada/*
13. *Cormark Securities - Canadian Marijuana Sector note, March 23, 2018.*
14. *Ibid.*
15. *https://globalnews.ca/news/4073296/marijuana-legalization-price-of-pot-canada/*

Tilray's IPO prospectus prominently acknowledges the risk of an oversupplied market (**emphasis added**):[16]

> *In anticipation of a surge in demand for cannabis as a result of the expected implementation of the Cannabis Act and the legalization of adult cannabis use, we and other cannabis producers in Canada may produce more cannabis than is needed to satisfy the collective demand of the Canadian medical and proposed adult-use markets, and we may be unable to export that oversupply into other markets where cannabis use is fully legal under all federal and state or provincial laws. As a result,* ***the available supply of cannabis could exceed demand, resulting in a significant decline in the market price for cannabis. If this were to occur, there is no assurance that we would be able to generate sufficient revenue from the sale of adult-use cannabis to result in profitability.***

Industry Consolidation

Mergers and acquisitions (M&A) in the cannabis sector are already taking place. We believe that the Canadian cannabis industry will continue its consolidation and eventually mature into a handful of large-scale producers. Given the industry's limited barriers to entry, low cost of production will become increasingly important, especially once the market is oversupplied. Production at scale and cultivation expertise should both drive down unit production costs. We also believe that retail buyers (including provincial distributors) will ultimately prefer to deal with a few reputable suppliers that can consistently produce high-quality product at volume.

Given this backdrop, the winners are likely to be cannabis producers that: (i) have access to capital, (ii) are able to ramp production quickly and (iii) are able to establish and maintain relationships with major buyers/distributors. Cannabis companies with large market capitalizations and inflated market valuations are the likely consolidators given their advantage of using their overvalued stock as M&A currency.

SELECTED CANNABIS STOCKS AND ETFS

Ticker	Name	Market Cap
WEED	Canopy Growth Corporation	$11,399,106,144
TLRY:US	Tilray Inc.	$10,179,712,350
ACB	Aurora Cannabis Inc.	$9,071,384,978
CGC:US	Canopy Growth Corporation	$8,688,539,523
ACB:US	Aurora Cannabis Inc	$6,971,349,766
GWPH:US	GW Pharmaceuticals Plc	$3,848,481,203
APH	Aphria Inc.	$3,654,668,028
CRON	Cronos Group Inc.	$1,787,004,460
CRON:US	Cronos Group Inc.	$1,363,484,402
HEXO	HEXO Corp.	$1,076,967,963
TRST	CannTrust Holdings Inc.	$1,065,811,881
TGOD	The Green Organic Dutchman Holdings	$977,429,168
HYYDF:US	HEXO Corp - Ordinary Shares	$827,444,276
HMMJ	Horizons Marijuana Life Sciences Index ETF	$786,324,842
CARA:US	Cara Therapeutics Inc.	$699,370,259
OGI	OrganiGram Holdings Inc	$643,775,675
HMMJ.U	Horizons Marijuana Life Sciences Index ETF	$601,332,020
XLY	Auxly Cannabis Group Inc.	$575,647,079
MJ:US	ETFMG Alternative Harvest	$556,311,000

Source: GreensKeeper, Quotestream. Non US-listed companies are quoted in Canadian dollars.
Based on closing prices on October 26, 2018.

16. *Source: Tilray IPO Prospectus - https://ir.tilray.com/static-files/e9b9f309-2970-4d62-ade7-4d873ed8636c*

Tilray Inc. (Nasdaq:TLRY)

Despite the sizable opportunity presented by Canada's recent cannabis legalization, we view many of the publicly-traded cannabis producers to be overvalued. We believe that Tilray falls into that category and have purchased and currently hold Tilray put options (our firm does not take short positions).

On its website, Tilray defines itself as follows:[17]

> *Tilray is a global leader in medical cannabis research, cultivation, processing and distribution. We aspire to lead, legitimize and define the future of our industry by building the world's most trusted cannabis company.*

To be clear, we have no reason to believe that Tilray and its management is anything but earnest in pursuing their mission. It seems to us that they believe in cannabis legalization, their product(s), their strategy and are doing their level best to successfully execute. Our negative view of the stock is strictly a valuation call combined with a short-term catalyst.

Key Events and Analysis

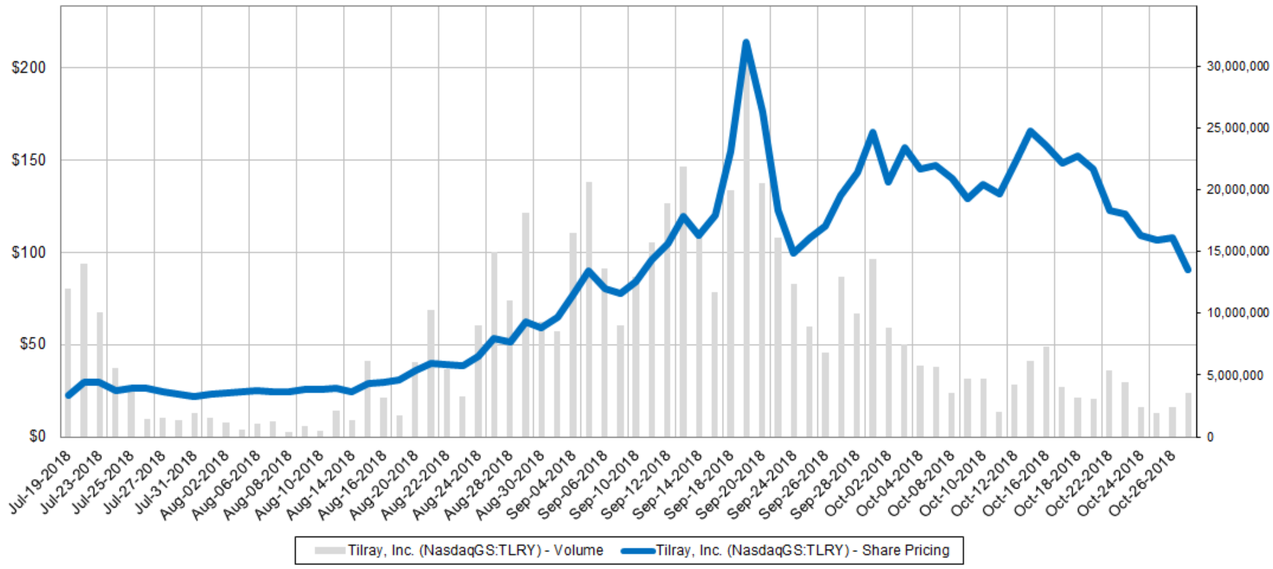
Tilray was one of the first cannabis company to list its shares on Nasdaq after completing its IPO in July 2018.[18] The company raised $176 million at a price of $17.00 per share including the underwriter's exercise of the greenshoe option. The company has a dual-share structure with control residing with cannabis-focused venture capital firm Privateer Holdings Inc. Brendan Kennedy – the CEO of Tilray – is also the Executive Chairman and a founder of Privateer.[19]

The table below sets out Tilray's equity outstanding. Privateer's multi-voting shares alone entitle them to a 68% voting interest. Combined with their ownership of most of the sub-voting shares, Privateer controls over 92% of the votes and has an 80.5% equity interest in Tilray. The multi-voting shares are convertible one-for-one into subordinate voting shares at Privateer's option and a mandatory conversion is triggered upon the occurrence of certain events.

Ownership	Shares	
Privateer	58,333,333	Sub-voting (1 vote)
Others	7,794,042	" "
Issued on IPO	10,350,000	" "
	76,477,375	Total Sub-Voting
Privateer	16,666,667	Multi-voting (10 votes)
	93,144,042	Shares outstanding

Source: GreensKeeper and SEC filings.

17. https://www.tilray.com/
18. https://www.businesswire.com/news/home/20180723005661/en/Tilray-Announces-Closing-Initial-Public-Offering-Full
19. https://www.privateerholdings.com/about



Privateer is the sponsor and longtime backer of Tilray and funded the company as it has grown. A portion of the IPO proceeds went towards the repayment of debt facilities previously extended by Privateer. Post-IPO, Privateer's ownership interest in Tilray is via equity (sub-voting and multi-voting shares).

Since the IPO, Tilray's stock has traded as low as $20.10 per share and as high as $300.00 per share. The stock peaked on September 19, 2018 – the day after the company's announcement of its US Drug Enforcement Agency (DEA) approval to import cannabis into the US for a clinical trial and the CEO's appearance on CNBC's Mad Money with Jim Cramer.[20]

The current stock price of $108.08 gives the company a market capitalization of $10.2 billion. Tilray smartly took advantage of investor interest by recently issuing US$450 million of 5-year convertible debentures (5% coupon) in a private placement.[21] With a conversion price of $167.41, we view the debentures as debt and a cheap source of financing. The offering's use of proceeds was described as being for working capital, future acquisitions, general corporate purposes and the repayment of a mortgage.

Tilray is targeting both the medical and recreational segments of the cannabis market. The company has production facilities in Canada and Portugal and sales offices in Europe and Australia. All facilities require a government-issued production and other licenses. In order to supply the medical market, an additional Good Manufacturing Practice (GMP) certification is required and import/export licenses by jurisdiction. Tilray has already secured most of these licenses.

Tilray's strategy is to continue to develop a high-quality medical cannabis brand in various form factors (flower, oils, etc.). The company is also targeting the recreational use segment via newly created brands and brands licensed from Privateer. Building a recognized consumer brand in a new market takes time and considerable investment. Tilray will be up against many other deep-pocketed competitors and will be further constrained by cannabis-related regulations that mandate plain packaging and largely restrict advertising.

20. https://www.cnbc.com/video/2018/09/18/tilray-ceo-investing-in-pot-great-hedge-for-alcohol-drug-companies.html
21. https://www.businesswire.com/news/home/20181004005887/en/Tilray-Upsizes-Prices-Offering-US450-Million-Convertible

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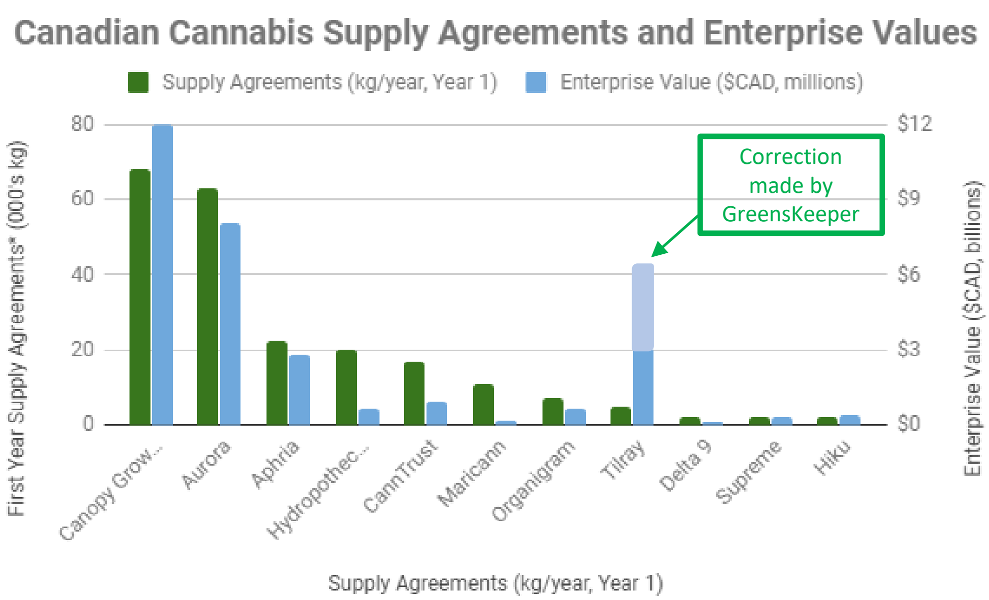
To date, Tilray has announced a number of successful agreements and milestones including:

- Became the first company to legally export medical cannabis products from North America to the European Union in 2016
- The entering into an agreement with Sandoz Canada (Novartis) to collaborate on the creation and sale of co-branded and co-developed non-combustible medical cannabis products
- Supply agreements and/or Letters of Intent (LOIs) with major Canadian pharmacies (Shoppers Drug Mart, Pharmasave) and eight Canadian provinces and territories
- A partnership agreement with a German wholesaler to distribute medical cannabis products to pharmacies in Germany
- Participation in five clinical trials
- US DEA approval to import a medical cannabis product to the US for a clinical trial

We came across an interesting chart (reproduced below) that was published online in August 2018.[22] The data is incomplete as it excludes supply agreements in certain provinces (e.g. Ontario, British Columbia) where supply agreement volumes have not been disclosed. However the methodology is consistent for all companies and provides an interesting comparative ranking of the major publicly-traded cannabis producers.

Tilray's October 2018 investor presentation discloses 5,650 kg of supply agreements which is consistent with the green bar for Tilray in the chart below. However we noticed that the chart contains an error – Tilray's enterprise value at the time of publication was approximately CAD$6.2 billion. We have taken the liberty of correcting the chart in order to highlight the fact that Tilray's relative valuation (based on EV / Yr1 Supply Agreements) was even more out of step with the industry than originally shown. In addition, Tilray's stock has increased considerably since this analysis was published. The company's current enterprise value is approximately CAD$13.8 billion which would put Tilray's blue bar completely off the chart at the top.



22. https://seekingalpha.com/article/4202607-cannabis-chronicles-possible-cannabis-bubble-nova-scotia-supply-agreements

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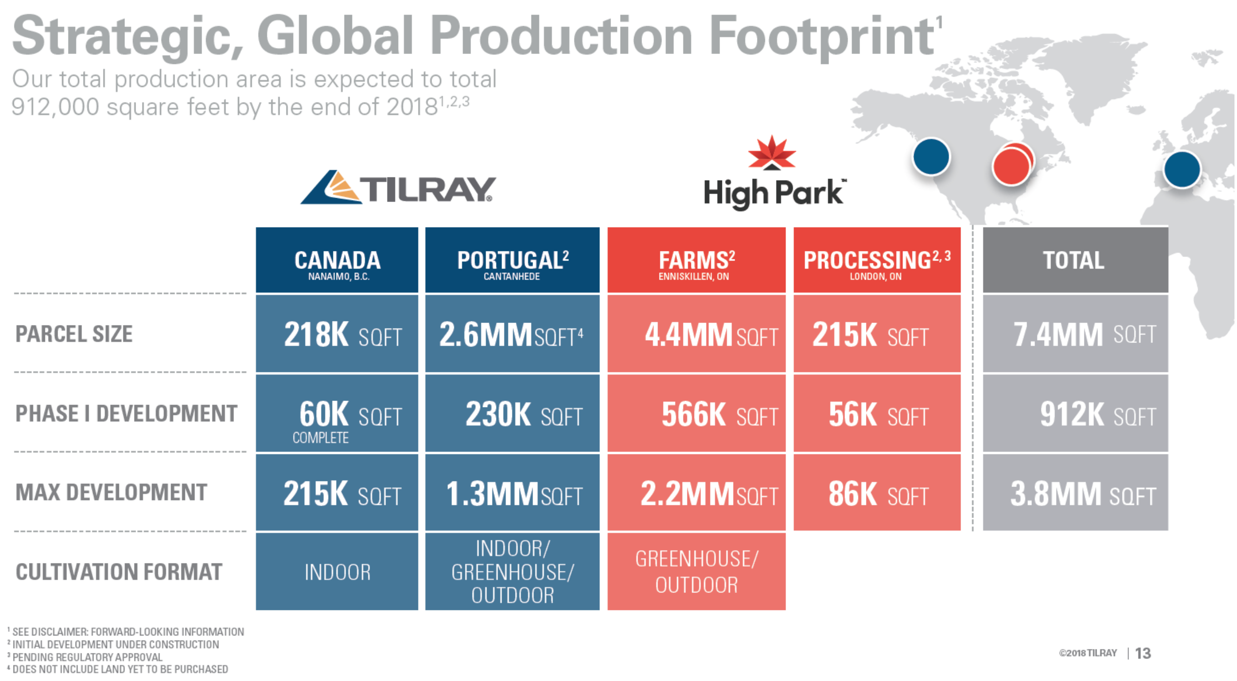
Production Capacity

Tilray's investor presentation details the company's existing and proposed production capacity:



	CANADA NANAIMO, B.C.	PORTUGAL[2] CANTANHEDE	FARMS[2] ENNISKILLEN, ON	PROCESSING[2,3] LONDON, ON	TOTAL
PARCEL SIZE	218K SQFT	2.6MM SQFT[4]	4.4MM SQFT	215K SQFT	7.4MM SQFT
PHASE I DEVELOPMENT	60K SQFT COMPLETE	230K SQFT	566K SQFT	56K SQFT	912K SQFT
MAX DEVELOPMENT	215K SQFT	1.3MM SQFT	2.2MM SQFT	86K SQFT	3.8MM SQFT
CULTIVATION FORMAT	INDOOR	INDOOR/ GREENHOUSE/ OUTDOOR	GREENHOUSE/ OUTDOOR		

Based on the production yields of other cannabis producers and discussions with industry insiders, we use a rule of thumb to estimate production capacity. A fully-operational indoor facility and outdoor growers in favourable climates can produce ~100 g/sq.ft./yr of saleable cannabis with greenhouse facilities producing at about 75% that rate. Yield is a function of growing conditions, contamination (pests, fungi, bacteria, etc.) and expertise. Other major cannabis producers have experienced crop losses and other difficulties in scaling their operations.(23)

Our rule of thumb suggests that Tilray's production footprint should yield ~67,100 kg of saleable cannabis per year. Tilray's most established production facility is its 60,000 sq. ft. facility in Nanaimo, British Columbia. That facility reached full production by the end of 2016.

Tilray harvested a total of 6,779 kg of cannabis in 2017 and another 3,154 kg through the first six months of 2018 (or ~6,300 kg annualized). Their average yield is within 10% of our rule of thumb estimate for that facility (6,000 kg). Interestingly, Tilray's kilograms harvested in H1 2018 are down 12.9% year-over-year. In addition, during 2018 Tilray had to procure third-party supply of certain products which negatively impacted gross margins. It seems that the company has struggled to produce enough product internally to meet demand. Production of high-quality product is difficult but Tilray should improve over time with experience.

23. https://seekingalpha.com/article/4212358-aphria-quarter-filled-operational-challenges

Aurora Cannabis

Facility	Type	sq. ft.	Est. Capacity (kg/yr)	Est. Yield (g/sq.ft/yr)
Aurora Mountain	Indoor	55,200	4,800	87
Aurora Vie	Indoor	40,000	4,000	100
Aurora Eau	Indoor	48,000	4,500	94
Aurora Sky	Automated greenhouse	800,000	100,000	125
Aurora Sun	Hybrid greenhouse	1,200,000	150,000	125
Aurora Nordic 1	Hybrid greenhouse	100,000	8,000	80
Aurora Nordic 2	Hybrid greenhouse	1,000,000	120,000	120
CanniMed	Indoor	97,000	19,000	196
MedReleaf Markham	Indoor	55,000	7,000	127
MedReleaf Bradford	Indoor	210,000	28,000	133
MedReleaf Exeter	Indoor	1,000,000	105,000	105
		4,605,200	**550,300**	**119**

Source: Aurora Investor Presentation, Sedar Filings, GreensKeeper

We have also reviewed the production forecasts of other major producers including Aurora Cannabis (see table above). Based on Aurora's most-recent investor presentation, they are forecasting an average yield of approximately 119 g/sq.ft./yr. We would also point out that most of these figures are production *estimates* and not realized production to date. Through discussions with other producers we have learned that cannabis is a finicky plant and difficult to grow at scale. We are skeptical that these yield targets will be met.

For instance, Aurora Mountain is Canada's first purpose-built indoor facility and is described by Aurora as "state of the art". The facility has been in operation since 2014. However its estimated annual capacity is only 4,800 kg. or 87 g/sq.ft./yr. Cannimed's indoor facility is estimated to yield 196 g/sq.ft./yr. In its last reported quarter prior to being acquired by Aurora earlier this year, that facility was yielding at the rate of 37 g/sq.ft./yr. In other words, the estimated yield is theoretical at this point. Perhaps this target will be met over time as the company scales. We will be monitoring their progress.

Our point is that an assumption of 100 g/sq.ft./yr of production from Tilray for its indoor (Nanaimo) and outdoor (Portugal) facilities and 75% of that rate for its greenhouse facilities is probably generous. Nevertheless we assume those yields in our financial model.

Based on our estimates, Tilray's current and proposed production facilities should eventually produce approximately 67,100 kg/year of saleable cannabis (24,650 kg for the medical and 42,450 kg for the recreational market). These are not current production estimates as certain facilities remain under construction.(24) We have assumed that Tilray will complete construction, obtain all necessary licenses and will achieve these production levels by the end of 2020. The table on the next page shows our production estimate by facility. The company has stated that it will have production capacity of 150,000 kg at these facilities by the end of 2019. In our opinion, that figure will prove to be overly optimistic.

24. *Source: Tilray October 2018 Investor Presentation.*

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Facility	Production Status	Licensed to Produce?	GMP Certified?	Sq. Ft.	Est. Production Capacity (kg/yr)	Desciption
Nanaimo, BC	Full utilization at end of 2016	Yes	Yes	60,000	6,000	indoor - will supply medical market
Portugal	First harvest Fall 2018	Yes	Application submitted	109,000	8,175	greenhouse - will supply medical market
Portugal	First harvest Fall 2018	Yes	Application submitted	65,000	4,875	processing facility
Portugal	First harvest Fall 2020	Yes	Application submitted	56,000	5,600	outdoor - will supply medical market
London, ON	n/a	Yes	n/a	56,000	0	processing facility
Enniskillen, ON	First harvest before legalization	Yes	n/a	435,600	32,670	greenhouse/outdoor - will suply recreational market
Enniskillen, ON	First harvest before legalization	Yes	n/a	56,000	4,200	Phase I - processing space
Enniskillen, ON	?	Yes	n/a	74,400	5,580	?
				912,000	**67,100**	

Source: GreensKeeper, Tilray Presentations and SEC filings.

Financial Analysis and Valuation

As of June 30, 2018, Tilray's sales outside of Canada have been immaterial (less than 4% of sales).[25] As legalization of the recreational market only took place in October 2018, we know that prior sales were exclusively to the medical market. The table below summarizes Tilray's realized revenues and costs per gram equivalents sold (see Appendix for definition).

US$	2015	2016	2017	H1 2018
Avg. net selling price / g	$5.86	$5.41	$6.52	$5.94
Avg. cost / g sold	$5.55	$4.04	$2.84	$2.81
Avg. Gross Profit / g	$0.31	$1.37	$3.68	$3.13
Avg. Gross Margin (%)	5.3%	25.3%	56.4%	52.7%

Source: GreensKeeper, Tilray Presentations and SEC filings.

Tilray's net selling prices appear to have stabilized at approximately $6.00/g. Production costs have declined, likely due to improving yields however they have recently stalled. Other large producers (Canopy, Aurora, Cronos, Aphria) are currently reporting gross margins in the 43%-74% range ignoring IFRS fair value adjustments. Based on conversations with industry participants, these gross margins may be overstated in certain cases as some variable "cost of goods sold" are being shifted to operating expenses (it may be an accounting grey area). Nevertheless, we will assume that Tilray's margins will remain healthy and may even improve in time. We use a range of 50% to 70% gross margins in our model.

Wholesale prices for the recreational market are estimated to be in the CAD$4.00 to $6.00/g range (US$3.05 to $4.58/g). They are also forecasted to decline as supply increases. Our model ignores that headwind and assumes that Tilray can maintain wholesale selling prices at these levels.

25. *Source: GreensKeeper, Tilray SEC filings.*

Due to lower-priced recreational cannabis and increased convenience, the medical market is likely to migrate to the recreational channel. That phenomenon appears to have happened in Colorado as medical cannabis sales are starting to decline in absolute dollars.[26] We have ignored that potentially negative impact for the purposes of our analysis. We assume that medical cannabis sales will ultimately average between CAD$5.00 to $7.00/g (US$3.81 to $5.34/g). The company recently averaged $5.94/g but that figure will likely continue to decline.

The table below summarizes our major assumptions discussed above:

Key Assumptions

		Low	Base	High
Segment	**Production Volume (kg)**		**Avg. Selling Price / g**	
Recreational	42,450	$3.05	$3.81	$4.58
Medical	24,650	$3.81	$4.58	$5.34
			Gross Margin	
Recreational		50.0%	60.0%	70.0%
Medical		50.0%	60.0%	70.0%

Our financial model also ignores the potential dilution from grants of stock-based compensation. Finally, we have made the following additional assumptions which we believe give the company a more favourable (higher) valuation:

- Operating expenses at maturity of $50 million per year. The company's current operating expense run rate is over $60 million (or $38 million excluding share-based compensation). It will likely rise above our estimate as Tilray grows its team and incurs higher depreciation expenses.
- No additional financing/dilution required to complete construction of announced production facilities
- An income tax rate of 20%
- A generous price-to-earnings (P/E) multiple of 30x at full production in 2020. We also illustrate the company's potential future valuation at a lower (but still lofty) 20x multiple.

26. *Source: GreensKeeper, Colorado Dept. of Revenue.*

Based on the foregoing, we derive a straightforward financial model for Tilray based on its announced production capacity which is scheduled to come on line by 2020. According to S&P Capital IQ, analyst consensus EBIT for 2020 is currently $52.2 million which is more than 50% below our base case scenario and also below our low case scenario. In other words, we believe that the favourable assumptions that we have made throughout our model will be difficult for Tilray to actually achieve.

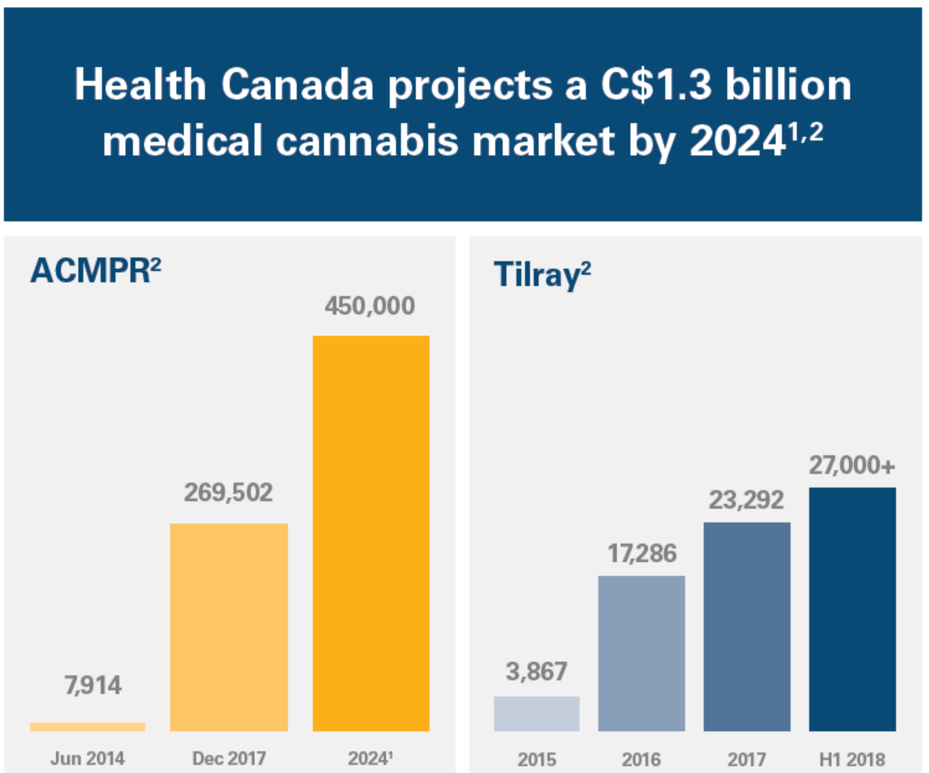
Our fair value estimate in our base case scenario is $15.85 to $23.77. This is a significant discount to the current stock price of $108.08.

	Low	Base	High
Revenue	$223,450,625	$274,614,375	$325,778,125
Gross Profit	$111,725,313	$164,768,625	$228,044,688
Gross Margin	50.0%	60.0%	70.0%
OPEX	$50,000,000	$50,000,000	$50,000,000
EBIT	$61,725,313	$114,768,625	$178,044,688
Interest Expense	$22,500,000	$22,500,000	$22,500,000
EBT	$39,225,313	$92,268,625	$155,544,688
Income Tax (20%)	$7,845,063	$18,453,725	$31,108,938
Net Income	$31,380,250	$73,814,900	$124,435,750
P/E M(x)	30.0x	30.0x	30.0x
Implied Market Cap.	$941,407,500	$2,214,447,000	$3,733,072,500
Shares o/s (basic)	93,144,042	93,144,042	93,144,042
Implied Fair Value	$10.11	$23.77	$40.08
P/E M(x)	20.0x	20.0x	20.0x
Implied Market Cap.	$627,605,000	$1,476,298,000	$2,488,715,000
Shares o/s (basic)	93,144,042	93,144,042	93,144,042
Implied Fair Value	$6.74	$15.85	$26.72

Source: GreensKeeper estimates.

As one last check of the reasonableness of our estimates, consider Tilray's October 2018 investor presentation (excerpt below). The company cites Health Canada data showing 269,502 Canadian patients registered to use cannabis for medical purposes at the end of 2017. Tilray's corresponding number for that period is 23,292 patients implying an approximate 8.6% market share.

With a medical market estimate of CAD$1.3 billion (US$1.0 billion) in 2024, assuming that Tilray maintains a constant market share produces future medical revenues for Tilray of CAD$112 million (US$85 million). Our model predicts revenues for Tilray from medical cannabis in Canada of US$94 to $132 million by 2020 (four years earlier). It would be difficult to argue that our model is conservative.



Bull Case – International and Other Opportunities

So what are we missing? Our understanding of the bull case for Tilray and many other cannabis producers is as follows. Investors are really excited about the Canadian recreational market and the possibility of (i) other global markets opening up in the future and (ii) other uses such as cannabis-infused beverages. In other words, Canada's cannabis companies are at the forefront of a massive global market. International opportunities are certain to open up once Canada is oversupplied. There will be plenty of money to be made by everyone involved.

Certain Canadian cannabis companies are in a globally-leading position and potentially deserve a premium valuation as they are well-positioned to capitalize on future opportunities. Analysts have largely bought in to this narrative, simply projecting future revenues and applying ever-increasing revenue multiples to generate escalating price targets.

The problem we have with this view is that we believe that the future of the cannabis market will prove to be much more difficult than the current valuations can possibly justify. At $108.08 Tilray is massively overvalued even applying reasonable assumptions, basic laws of economics (supply and demand) and simple math. At our assumed valuation of 20 to 30 times 2020 earnings, we believe that we have given Tilray plenty of credit for any future international and other opportunities that may arise and that they are actually able to capture.

Tilray opens its outdoor facility in Portugal in 2020. The Canadian market (both medical and recreational) is likely to be oversupplied by that time. Oversupply will create downward pressure on selling prices and margins and we believe that near-term international and other opportunities will be insufficient to make up the valuation gap. We agree that cannabis for medical use will likely open up in additional markets over time. However lead times are long due to legislative and regulatory hurdles. If the market is oversupplied, additional production expansion won't help the company grow its way out of its inflated valuation.

Tilray also faces intense competition from current and future licensed producers. This includes emerging international competitors as Australia has already established a cannabis export regime and other countries appear to be contemplating it. In the recreational segment, we expect competition to be even more intense and international markets unlikely to open up quickly due to historical factors and the stigma and risks associated with recreational use.

The risk factor section of Tilray's IPO Prospectus dealing with competition[27] is sobering:

> *"There are currently hundreds of applications for Licensed Producer status being processed by Health Canada… We expect to face additional competition from new market entrants that are granted licenses… or existing license holders that are not yet active in the industry. If a significant number of new licenses are granted by Health Canada, we may experience increased competition for market share and may experience downward price pressure on our medical cannabis products as new entrants increase production. We also face competition from unlicensed and unregulated market participants, including individuals or groups that are able to produce cannabis without a license similar to that under which we currently produce and illegal dispensaries and black market participants selling cannabis and cannabis based products in Canada."*

Tilray has had a medical cannabis production facility fully operational since 2016. Its current revenue run rate is $38.2 million and the company has yet to earn a profit.

According to Tilray, the use of cannabis for medical purposes is authorized nationally/federally in 29 countries. The company states that it was the first company to legally export medical cannabis from North America to Africa, Australia, Europe and South America. The company also touts its wholesale distribution partnership in Germany to facilitate distribution of products to a network of 16,000 pharmacies announced over a year ago. Tilray's sales of medical cannabis products outside of Canada to date are approximately $1.3 million.

Tilray's investor presentation states that the company is a Global Pioneer in a $150 billion market. We are skeptical that the international opportunity will be a material financial contributor for Tilray or other cannabis companies for the foreseeable future. Despite all of the foregoing, Tilray currently has a current market capitalization of $10.1 billion.

27. *Source: Tilray IPO Prospectus - https://ir.tilray.com/static-files/e9b9f309-2970-4d62-ade7-4d873ed8636c*

Near-Term Catalyst

On or about January 15, 2019, the IPO lock-up agreement expires and a total of 66,127,375 of Tilray's sub-voting shares become free trading (including the 58,333,333 sub-voting shares and 16,666,667 multi-voting shares owned by Privateer). The company has also granted over 7.9 million stock options and restricted-stock units (RSUs) to employees with a weighted-average price of $7.44. At current market prices, if exercised these additional shares would give the company an implied market capitalization of $10.9 billion.

We would point out that in the 3½ months since the completion of the company's IPO there has been very few substantive announcements other than (i) the convertible debenture offering, (ii) supply agreements with a number of Canadian provinces and territories and (iii) receipt of a sales license from Health Canada for Tilray's Enniskellin production facility. These are all positive developments, however most were anticipated and our valuation fully accounts for them. On their own, they certainly do not justify Tilray's 535% share price increase since the IPO.

Given the company's ability and willingness to dilute at $17.00 per share, we would not be surprised to see lock-up shares come onto the market in January once released. The company's backers are financial professionals. We are financial professionals. Let's put ourselves in their shoes for a minute and assume that after having supported the company financially since startup, we took them public at $17/share in July. Soon thereafter we watched the stock rocket to $300 and then decline to below $110 in short order. We own over 80% of the equity of the company and at $108 our holdings are still being valued at $8.1 billion. However we have been restricted from doing anything. Until January 15, 2019. We wouldn't hesitate to sell a meaningful portion of our holdings at current levels if we were in their shoes.

Tilray's current free float (shares not subject to lock-up) is 10,350,000 sub-voting shares. Tilray's average daily trading volume since the IPO is 8,161,076 shares. In other words, almost 79% of the company's freely-tradeable shares have been bought and sold daily. Short interest was 3,158,530 shares as at October 15. Volume, average trade size, volatility and other factors lead us to conclude that the inflated valuation is probably entirely retail-investor driven like much of the recent Canadian cannabis stock trading frenzy.

Conclusion

We view many Canadian cannabis sector stocks to be in bubble territory driven by rampant retail speculation. Our analysis of Tilray is based on what we believe are reasonable assumptions, basic laws of economics and simple math. Our analysis provides a fair value for the company's shares below $20.00 versus the current stock price of $108.08.

The possibility of additional selling of Tilray shares due to the pending expiry of the IPO lock-up combined with nervous investor sentiment due to broader market weakness leads us to conclude that a large selloff in Tilray is entirely possible in the short-term. Accordingly, we have purchased and currently hold Tilray put options (our firm does not take short positions).

Disclosure: The GreensKeeper Value Fund and certain accounts managed by us currently own put options on Tilray and other securities mentioned in this report.

Appendix

Tilray defines **Kilogram equivalents sold** as follows:

> *We sell two product categories: (1) dried cannabis, which includes whole flower and ground flower; and (2) cannabis extracts, which includes full-spectrum and purified oil drops and capsules. The latter products are converted to flower equivalent grams based on the type and number of dried cannabis grams required to produce extracted cannabis in the form of cannabis oils. This conversion ratio is based on the amount of active cannabinoids in the products rather than the volume of oil. For example, our 40mL oil drops are converted to five gram equivalents. (Source: Tilray IPO Prospectus).*

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Regulatory Disclosures:

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