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neobi



Clearing the smoke

Insights to Canada's
illicit cannabis market

Introduction

Hailed at the time of legalization five years ago as a huge economic opportunity, things aren't going great for the legal cannabis market in Canada. Why isn't it thriving?

What are the gaps between the illicit and legal markets in terms of product offerings? What are the key differences in the major product categories that are affecting where consumers shop? What key operational tactics are helping the illicit market? This report seeks to answer these and other questions to support the creation of a more viable and secure legal market in Canada.

Impacting the financial objectives of legal cannabis companies and the health and social policy objectives of federal and provincial regulators, Canada's illicit cannabis market has been little studied and poorly understood. Through our research, we gained several insights that we hope will help legal cannabis companies and regulators work toward that stronger future together.

Estimates for the illicit players' share of the market are substantial, ranging from 25% to 52% in various government sources.* This presents a considerable opportunity for legal cannabis companies and regulators to start collaborating to develop an appropriate response. The benefits of doing so are clear—the financial viability of legal cannabis companies would improve as their potential market share would increase and government regulators would reduce public health and safety risks by ensuring more supply is from legal, regulated sources with controlled product safety and quality requirements.

For this study, we conducted data analysis with our publication collaborator Neobi, comparing the legal recreational and illicit cannabis markets in Canada. It involved publicly available cannabis product data gathered in May and June 2023 from 624 legal private recreational cannabis stores and 57 illicit online stores. We collected product names, product categories, prices, weights, stock counts, stores, and dates, among other variables. The analysis encompassed various cannabis product categories, including in-stock flower products, pre-rolls, edibles, extracts, vapes, beverages, topicals, seeds, and, for the illicit online stores only, psychedelics. To ensure confidentiality, the identities of all stores have been anonymized. Note that we did not collect data from government-owned legal recreational cannabis stores, private recreational cannabis stores without online product menus, or bricks-and-mortar illicit cannabis stores.

*Statistics Canada, "[StatsCannabis data availability: Crowdsourced cannabis prices, fourth quarter 2019](#)", January 23, 2020; Ontario Cannabis Retail Corporation (OCRC), [OCRC 2021-2022 Annual Report](#), September 26, 2022; Alberta Gaming, Liquor and Cannabis Commission (AGLC), [AGLC Annual Report 2021-22](#), September 19, 2022; Société québécoise du cannabis (SQDC), "Annual Report 2023", accessed in October, 2023; Government of Canada, "[Canadian Cannabis Survey 2022: Summary](#)," December 16, 2022.

Overview of findings

The most notable discovery we made is the pricing gap for flower products: the average price differential is now only about 20%.

The categories of analysis we primarily focused on were overall unique stock-keeping unit (SKU) count and distribution, inventory composition, and flower product package size composition in inventory and pricing.

Overall, the illicit stores offered a larger SKU variety with more focus on the flower and extract categories—likely owing to illicit purchasers being more sophisticated legacy cannabis users. In the flower products category, we also noted more focus on larger package sizes (more than 3.5 grams) and the narrowing price gap, although it was widest for the most common package size in the legal recreational market: 3.5 grams.

KEY FINDINGS



1. Unique SKU count was higher for illicit websites and they had a significantly higher average SKU count than the legal recreational stores.



2. Illicit websites were over-indexed on flower and extract products and under-indexed on pre-rolls, beverages, and vapes compared to legal recreational stores.



3. The standard size format in the legal recreational market was 3.5 grams—60% of its flower products were offered in this size—whereas the illicit websites had a relatively even distribution of size varieties at 3.5 grams and larger.



4. With an average price differential of about 20%, the pricing gap for flower products between the legal recreational and illicit markets has narrowed significantly from the 55% measured by Statistics Canada in Q4-2019.

1. Unique SKU count

Illicit websites have a wider distribution of unique SKUs and a higher average unique SKU count than legal recreational stores.

Unique SKU count per store was more evenly distributed for legal recreational stores, with an average count of 538, while illicit websites had a significantly larger distribution range: the average SKU count was 918. Excluding accessories, the count narrows to 357 for legal recreational stores and 591 for illicit websites, indicating a greater volume of accessory products in the illicit market.

The wider variety of SKUs in the illicit market is likely attributable to a variety of factors, including:

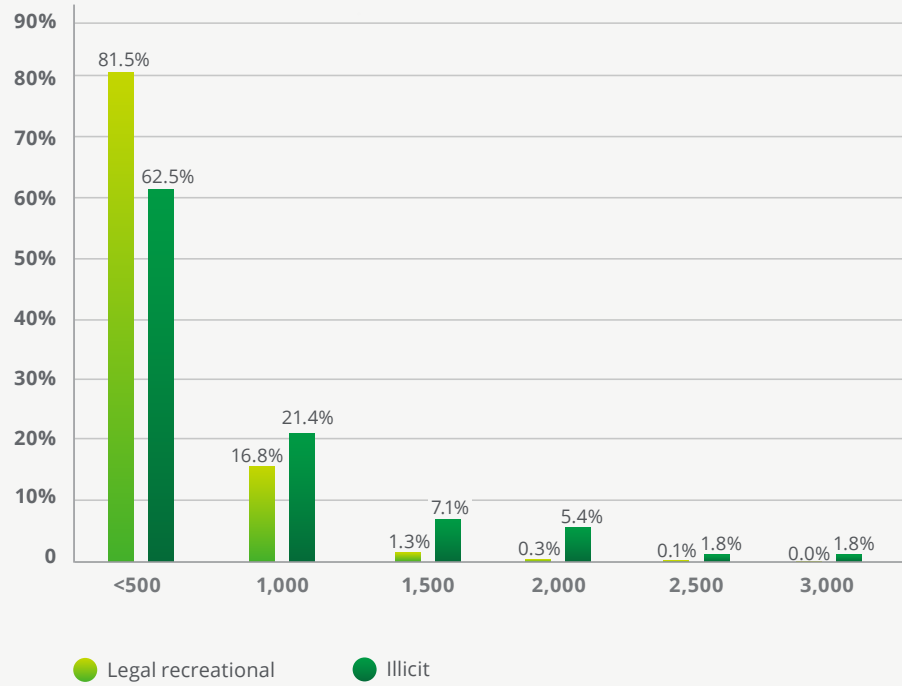
- No purchase limits (vs. a 30-gram daily purchase limit in the legal recreational market), allowing for the sale of a wider variety of package sizes
- Greater strain variety for inhalable products, given the restrictions that are imposed on licensed producers to obtain new genetics
- Illegal psychedelic products (e.g., psilocybin mushrooms, LSD, DMT) being offered with a corresponding multitude of sizes and product sub-types (edibles, capsules, teas, etc.)

- Greater format variety—particularly for edible products—as there are no restrictions on THC potency (vs. a 10-milligram limit on edibles in the legal market) or on mirroring non-cannabis products like candy, which Health Canada restricts because such products may be appealing to children

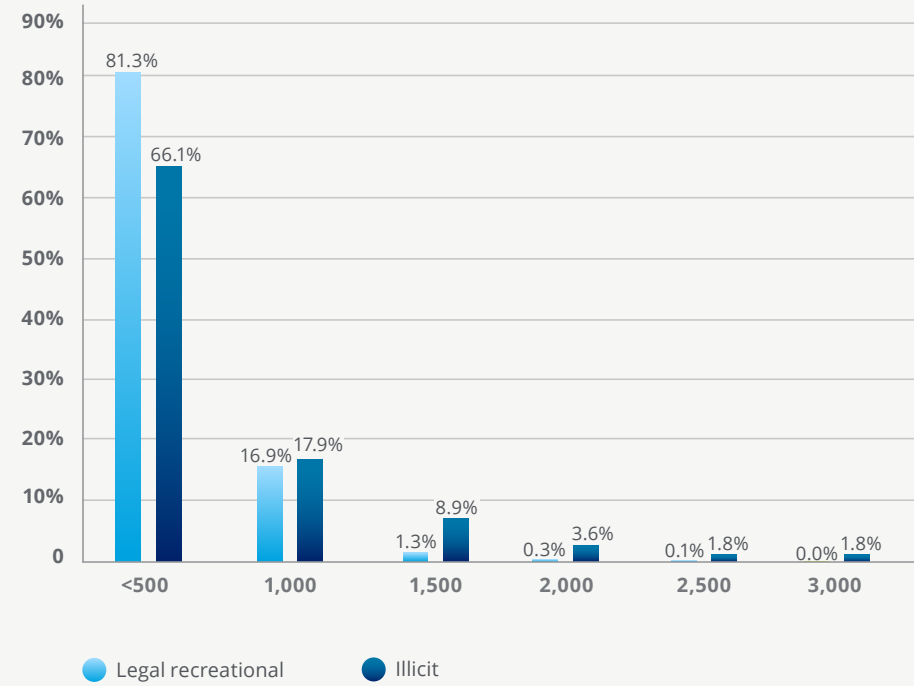


UNIQUE SKU COUNT (CONT'D)

Unique SKU count distribution: including accessories



Unique SKU count distribution: excluding accessories



2. Composition of inventory product categories

Inventories for illicit websites are over-indexed on flower and extract products compared to legal recreational stores. Over-indexed product categories in the illicit market include flower, extract, and psychedelic products, the latter of which cannot be sold in the legal recreational market.

Flower may be over indexed partly due to:

- Lower pricing than the legal recreational market (refer to our analysis of flower pricing below)
- The ability to sell at a higher volume (above the 30-gram limit in the legal recreational market) means more size varieties are available
- Greater strain variety, which largely impacts flower inventory, but also other categories such as pre-rolls and vapes
- Previous [Deloitte research into cannabis consumers](#) revealed that the illicit market enjoys the patronage of more experienced/educated cannabis users with a stronger preference for

flower products over novel categories (novelty products appear to be more appealing to new or occasional cannabis users)

Extracts may be over-indexed due to:

- More experienced users prefer the potent extract products that are available
- The less experienced users of the legal recreational market aren't as knowledgeable about extract products
- More abundant feedstock from shake and trim—the lower quality of illicit flower products make them less valuable as stand-alone products—to create more expensive extract products

Manufacturing vapes, pre-rolls, and beverages is complex, which is likely why they are more abundant in the legal recreational market.

Over-indexed categories in the legal market include those that are more complex to manufacture at scale so aren't as appealing to low-cost illicit producers that may not want to invest in automated pre-roll, vape production, and beverage infusion equipment.

Furthermore, many of these products are generally more appealing to new or inexperienced cannabis users, who prefer discrete consumption methods.

Edibles, topicals, and seed product categories are at relative parity, being over-indexed by only 0.3% to 1.3% in the legal recreational stores. That edibles have roughly the same composition in both markets is interesting, given the restrictions on edible products in the legal recreational market (though we note this is relative as, given the higher average SKU count in illicit stores noted above, we made the assumption that there are more edible products available in the illicit market).

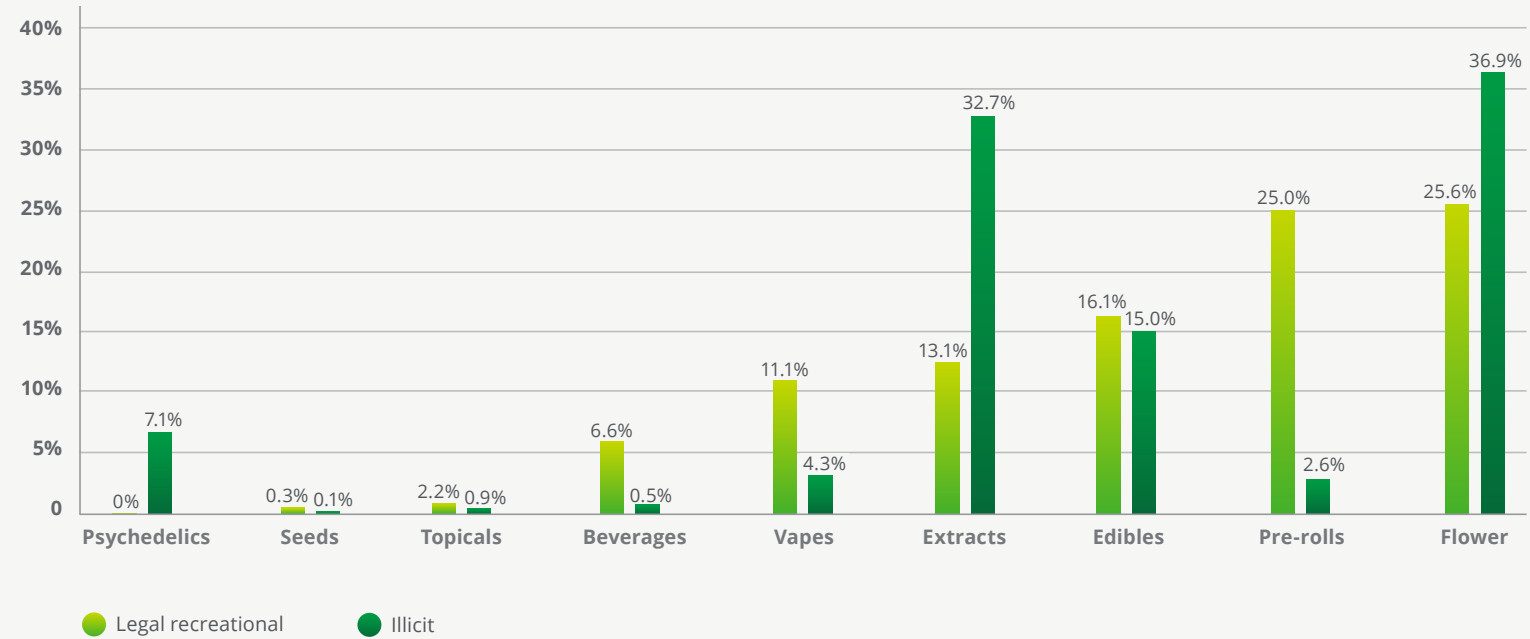
While this relative parity isn't indicative of sales, it could be attributable to:

- Many of the edibles available in the illicit market (particularly sweet or baked goods) are likely hand-crafted or otherwise not being produced at scale, reducing possible output
- Edibles are more appealing to new or inexperienced cannabis consumers, who primarily obtain cannabis through the legal market, while the illicit market is dominated by experienced users with a preference for flower products and extracts

- THC content restrictions in the legal recreational market necessitate small package sizes for edibles (two- to four-piece chocolate bars, two to four gummies, etc.); the illicit market, on the other hand, faces no size restrictions so may choose to offer a smaller stock of larger-sized edible product packages (up to 24-piece chocolate bars, up to 30 gummies, etc.)

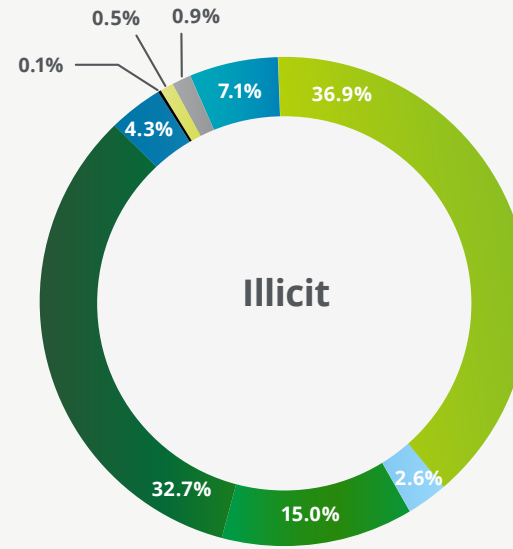
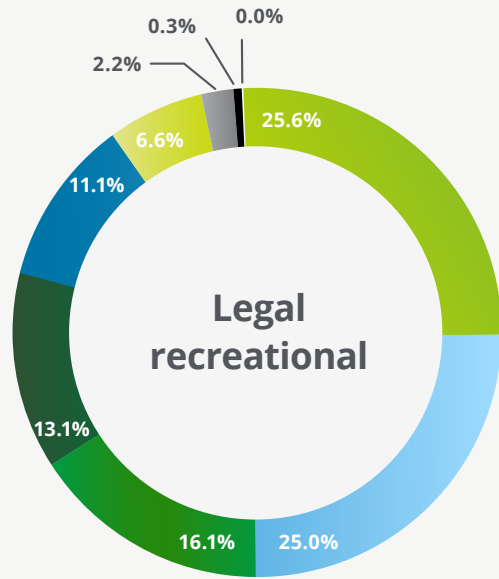
COMPOSITION OF INVENTORY PRODUCT CATEGORIES (CONT'D)

Product category composition



COMPOSITION OF INVENTORY PRODUCT CATEGORIES (CONT'D)

Composition of inventory



● Flower
 ● Pre-rolls
 ● Edibles
 ● Extracts
 ● Vapes
 ● Beverages
 ● Topicals
 ● Seeds
 ● Psychedelics

3. Flower products package sizes

Illicit market flower variety is largely evenly distributed in 3.5-gram and above size varieties, while the legal recreational market is highly concentrated on the 3.5-gram size.

In terms of flower product composition by size, we made several observations about the legal recreational and illicit markets, including:

- Both markets offer most of their flower products at 3.5 grams and above (96% legal recreational and 97% illicit), indicating little interest in smaller package sizes in either market
- The illicit market is more evenly distributed above the 3.5-gram package size, with the largest category being 28 grams (23.9%), which is nearly the 30-gram limit in the legal recreational market
- While there is variability in the legal recreational stores for packages of 3.5 grams and above, three sizes collectively represented 88% of all flower products offered—60% in 3.5-gram packages and 14.4% each for seven-gram and 28-gram packages
- In the illicit market, 17.3% of flower products were in the greater- than-28-gram package sizes, including 56 grams (0.6%), 112 grams (6%), 224 grams (6.1%), and 448 grams (4.6%)

Operational efficiency is likely the driver of 3.5 grams being the standard package size for flower products in the legal recreational market—illicit sellers have no cause to adhere to packaging guidelines.

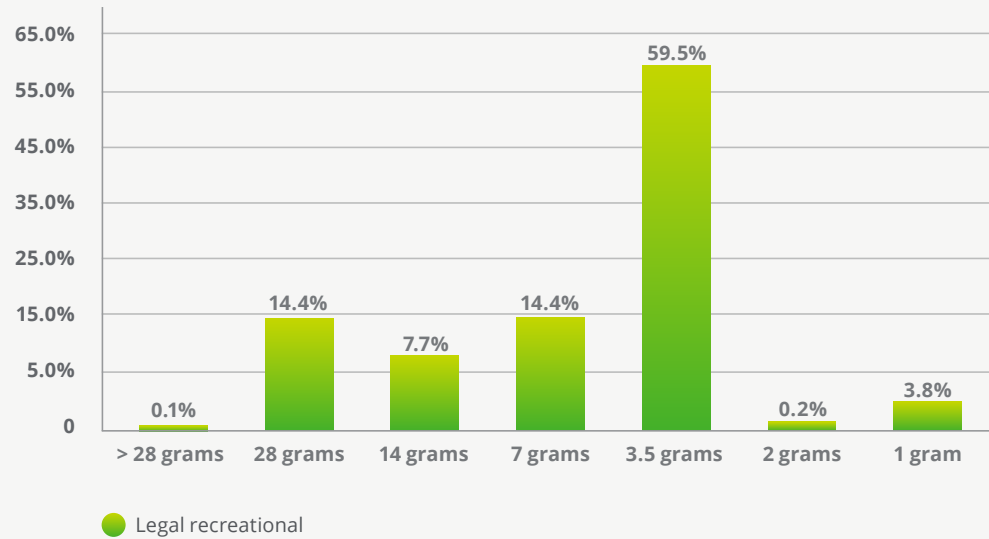
In the legal recreational market, the higher cost of packaging is likely influencing producers to seek savings through scale by centring their flower offerings around a few key size varieties. This is less of a concern in the illicit market, where flower products are often shipped in vacuum-sealed bags, without the need for special label requirements, child-resistant packaging, and other packaging costs the legal market faces.

In the illicit market, the bias toward larger package sizes is likely indicative of its customer base, which consists of more experienced cannabis users with potentially heavier consumption patterns. Further, having 17.3% of flower products being offered in package sizes above 28 grams could be indicative of a secondary illicit market that the illicit websites are selling into, effectively acting as wholesalers.

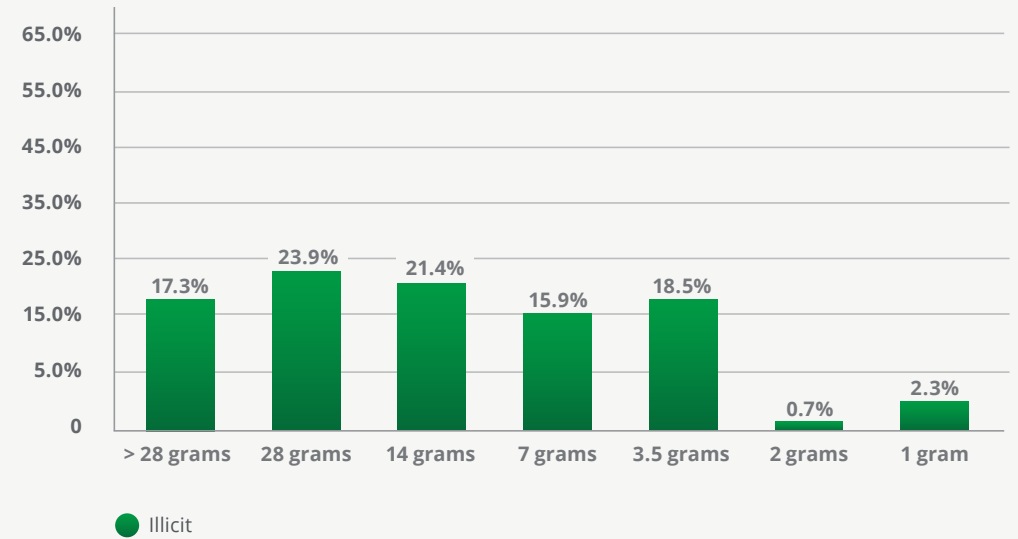


FLOWER PRODUCTS PACKAGE SIZES (CONT'D)

Flower size variety distribution: legal recreational

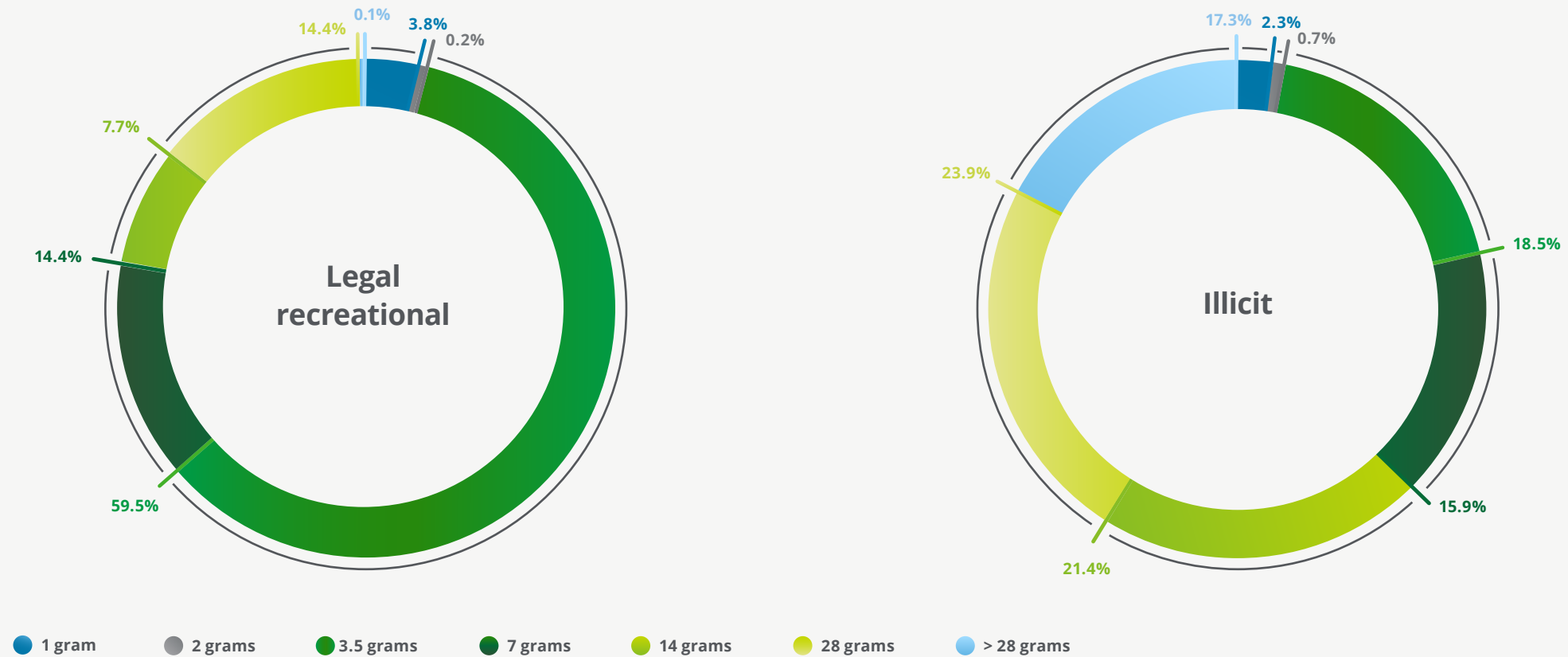


Flower size variety distribution: illicit



FLOWER PRODUCTS PACKAGE SIZES (CONT'D)

Flower size variety composition



4. Flower products pricing

With lower prices across all size categories from one gram to 28 grams, illicit market flower products cost about 20% less than their legal recreational market counterparts.

Pricing is a major strain on legal producers and has been cited as a primary factor in the overall decline of the Canadian cannabis industry's revenue and profitability. Consistent with these claims, we observed lower illicit market prices among all size categories from one gram to 28 grams, with an average price of \$6.24 per gram compared to \$7.96 per gram in the legal market. On average, illicit flower product prices were 78.4% of those in the legal market.

The gap in prices has considerably narrowed since the last pricing comparison performed by Statistics Canada in Q4-2019, when illicit flower products were priced 55% lower, with the current average price at \$5.73 per gram compared to \$9.69 per gram for the legal market—indicating that declining prices in the legal market may have contributed to more capture of the market.

Due to a general lack of publicly available data

on pricing, however, the perception of cheaper prices in the illicit market is likely to still have a pull for cannabis users—particularly with current inflationary pressures, which risk widening the gap between the markets as legal producers attempt to recover increasing input costs and operational expenses.

The pricing differential between legal recreational stores and illicit websites is highest for the 3.5-gram size variety.

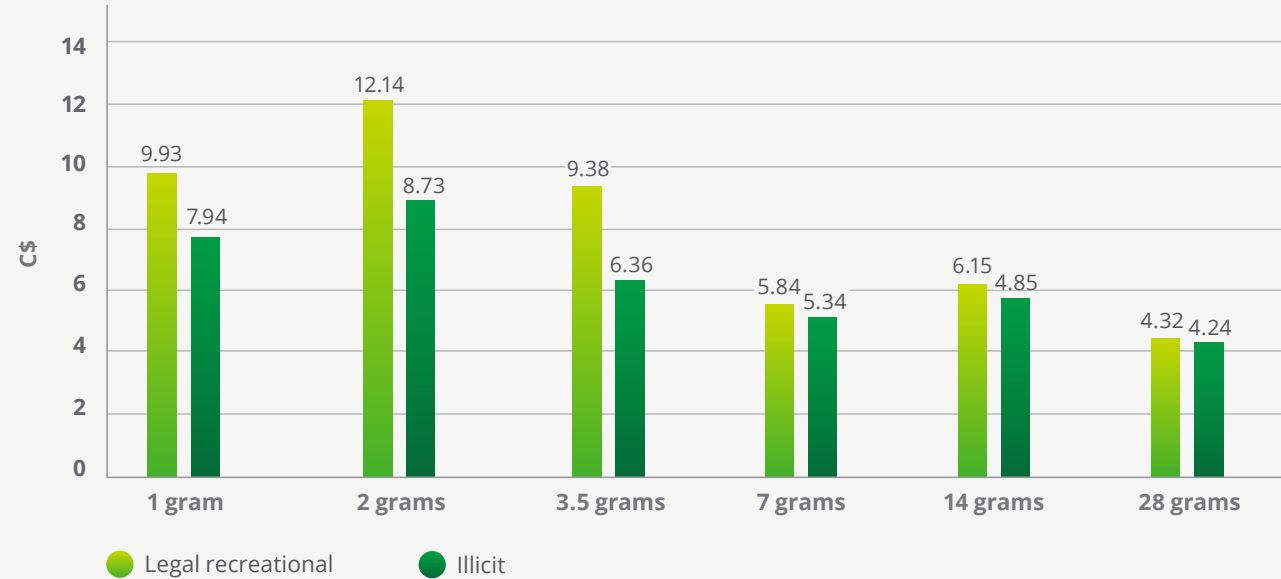
Viewing size varieties individually, we observed that the price differential was largest for the 3.5-gram package size, with average illicit market prices being 67.8% of average legal recreational prices. This is interesting to note, given that it's the most prevalent size in the legal recreational market—and may indicate that illicit players are selectively pricing based on sales volume in the legal recreational market. The difference in pricing was lowest for 28-gram packages, with prices almost at parity between the two markets—average illicit prices were 98.1% of average legal recreational prices.



FLOWER PRODUCTS PRICING (CONT'D)

Generally, pricing differences were smaller for the size varieties above 3.5 grams, with an average illicit to legal recreational market price of 89.5%. For smaller size varieties (3.5 grams and below), the average price differential was 73.2%. Excluding the one-gram size category, there was a linear trend of lower price differentials as package size increases—indicating that legal players may be more competitive in terms of pricing at scale.

Flower pricing differential by size category



Flower pricing differential by size category (legal recreational less illicit)

1 gram	2 grams	3.5 grams	7 grams	14 grams	28 grams
C\$1.99	C\$3.41	C\$3.02	C\$0.50	C\$1.30	C\$0.08
Price diff.	Price diff.	Price diff.	Price diff.	Price diff.	Price diff.
80.0%	71.9%	67.8%	91.4%	78.9%	98.1%
% of legal price	% of legal price	% of legal price	% of legal price	% of legal price	% of legal price

Other illicit market insights: shipping, payments, malware, and branding



Beyond the key insights already detailed, other observations of note include:



Nearly all the reviewed websites indicated Canada Post as the primary method for shipping orders. Many of these sites also indicated that orders are aggregated weekly and then manually shipped from one or more Canada Post locations. Packaging was often noted to be vacuum-sealed bags, which are sent in standard mailers.



All sampled websites offered e-transfer as the primary payment method, with some sites also accepting bitcoin (13%) or cash (4%), delivered either in person or by mail. There were a few instances of credit cards being accepted (4%). E-transfers are likely the preferred method of payment for sellers because payments are received in real time, with immediate confirmation.



The majority (78%) of websites had no age-gating on entry, though some asked customers to confirm they were of legal age prior to purchase. The lack of age-verification methods indicates a risk that sales could be to those under the legal age for cannabis consumption.



Illicit drugs—including psilocybin mushrooms, LSD, and DMT—were offered on 63% of the websites. The prevalence of such products was interesting, given that having these products available for sale could cause potential customers to question the legitimacy or legality of the website.



A significant volume of products (primarily accessories and flower-strain names) incorporated common television, film, and other media brands. Though these products would be unlicensed, they could provide significant pull for consumers, who do not see such brands incorporated into legal cannabis products given current marketing restrictions.



There were several instances of the websites containing malware and even some instances of possible identify-theft phishing schemes (e.g., requiring a scanned copy of a driver's licence or other personal identification to make a purchase).



All the websites selling illicit cannabis added tax for all products at checkout. It's uncertain whether these taxes are remitted to the appropriate authorities.

Conclusion

In comparing the legal recreational and illicit cannabis markets in Canada, we uncovered numerous insights that legal cannabis companies and regulators can leverage. While the illicit market is buoyed by federal and provincial regulations that effectively create a competitive barrier for legal recreational players, legal companies and regulators should consider all the levers at their disposal, individually and collaboratively, to combat the illicit market. This will allow them not only to improve the financial viability of the legal market, but also to achieve government health and social policy objectives and a better, stronger future for the industry.



Contact

Christopher McGrath
Senior Manager
Deloitte Canada
cmcgrath@deloitte.ca

Nish Sampath
Chief Operating Officer
Neobi
nish@neobi.io

Contributors

Rishi Malkani
Partner
Deloitte Canada

Mary-Beth Williamson
Senior Advisor
Deloitte Canada

Zara Munir
Senior Manager
Deloitte Canada

Joseph Luiz
Data Science Lead
Neobi

Valentina Vaguengueim
Senior Manager
Deloitte Canada

Jeff Woods
Co-Founder
Neobi

This report represents findings regarding the illicit cannabis market in Canada. The scope of this study is limited to inventory composition, general findings, and the flower product category for a sample of legal recreational cannabis retail stores and illicit cannabis websites and does not represent a comprehensive study of the illicit cannabis market in Canada.

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