

Intelligence MEMOS



From: Ian Irvine and Rosalie Wyonch
To: Anil Arora, Chief Statistician, Statistics Canada
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Re: **PRICING CANNABIS ON THE STREET**

The appropriate pricing and taxation of legal cannabis are critical to the success of the legalization process. Too large a gap between street prices and legal retail prices will see the illegal sector continue to prosper.

In this note, we look at data that suggest the street price is substantially lower than official estimates. In particular, using data from Statistics Canada's crowd-sourced data bank on illegal prices we show that the average price of cannabis, Canada-wide, is likely in the neighbourhood of \$5.70 per gram. This contrasts with Statistics Canada's own estimate of \$6.86 per gram for the average transaction.

Since provincial and territorial governments are likely benchmarking legal prices to illegal market price estimates, this 20 percent excess could result in legal prices that are higher than the black market and lead to the legal market securing a lower percentage of the total market.

At the start of 2018, Statistics Canada undertook the remarkably valuable exercise of collecting crowd-sourced data on cannabis prices. These data could be used to establish baseline prices pre-legalization and their collection was a very important step for studying the changes occurring as the process rolls out. The dataset contains about 20,000 observations, collected from mid-January to the end of September, that are now available from Statistics Canada.

The averages produced by Statistics Canada are for all three quality categories combined – high, medium and low, and for all types of user – recreational, medical with medical document, and medical without medical documentation. The agency stresses the limitations of these calculations. A critical element is that the estimates are averages of the prices paid per transaction. Suppose two transactions are recorded, one in which four grams are purchased for an expenditure of \$20, and one in which one gram is purchased for \$10. The price per gram is \$5 in the first case, \$10 in the second. The average price paid per gram is \$6 on a weighted basis ($\$30 / 5 \text{ grams} = \6), and the average price per gram on an unweighted basis for the transactions is \$7.50 ($\$5 + \$10 / 2 = \7.50). Statistics Canada uses the latter method to calculate average prices.

Another important characteristic of the cannabis market is that a disproportionate amount of all cannabis consumption is attributable to a small percentage of users who are daily or almost daily users. This group is particularly price sensitive, because expenditures on cannabis form a larger part of their budget. In the Statistics Canada data, if large purchases are generally undertaken by heavy consumers, then the typical price paid by heavy users is less than the average price paid by all participants in the illegal market. When a buyer purchases an ounce (28.4 grams) on average he or she obtains a 35 percent discount per gram relative to a purchase of one gram or one-eighth of an ounce (roughly 3.5 grams).

So in any examination of prices, the gradient of the quantity discount of legal sales is key, just as it is in computing the illegal price. Since most cannabis is consumed by heavy users, the price set for an ounce or a half ounce will be more important to the success of the legalization project than the price set for a single gram. In provinces where the maximum quantity sold in a single package is less than an ounce the price for lower quantities will be the important metric.

The retail street price we have arrived at (\$5.70) probably lies in the same price band as legal wholesale prices. Limited information is available at this time on wholesale transactions between provincial monopolies and suppliers. But the LP Hydrothecary announced in 2018 that the average price for wholesale marijuana sold to Quebec, would be \$5.40 per gram. This means that black market marijuana is likely priced similarly to *wholesale* legal marijuana. The addition of retail markups and taxes will likely push the price of legal marijuana above that in the black market.

Statistics Canada has developed an enlightened project in gathering crowd-sourced data that can inform policy. The public availability of the resulting data is extremely valuable. Much work remains to be done on the data. For the moment, the public availability of the data means that we can produce overall price indices for street cannabis along a variety of dimensions, and these can inform pricing and taxation decisions for provincial agencies and private retailers.

Ian Irvine is Professor of Economics, Concordia University and Research Fellow C.D. Howe Institute, and Rosalie Wyonch is a Policy Analyst at the C.D. Howe Institute.

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