Tiffanie Perrault

Université de Montréal ◦ Department of Economics

✉ tiffanie.perrault@umontreal.ca ◦ ▯ (+1) 438-499-8568 ◦ ◉ tiffanieperrault.github.io

RESEARCH SUMMARY

My main research interests lie at the intersection of Public Economics and Industrial Organization. My current research agenda mainly studies the economics of cannabis legalization. These recent policy changes, driven by evolving social values, have motivated various contributions to the understanding of criminal behavior, as, well as, more generally, choice in risky environments and consumption of spychotropic substances. Ultimately, this insight can be used to build more informed policies, to improve public health and fight against crime – among other goals. I analyze changes in market equilibrium after the introduction of newly legalized cannabis, with a focus on consumption responses, both empirically, in my job market paper, and theoretically, in another co-authored project. The *behind the doors* character of the cannabis market involves considerable data limitation, which feeds interest for challenging econometrics problems.

In this statement, I summarize three of my current research projects, with a greater emphasis on my job market paper, and I discuss future directions for my work.

1 Flying High? Legalization and the Black Market for Cannabis

How does the black market for cannabis react to legalization? To which extent and on which terms can a legal market undermine it using competition? My job market paper attempts to answer this question empirically, using both reduced-form and structural estimation techniques. I exploit an original crowd-sourced dataset that includes information on cannabis quality – which has been overlooked – the Trans-High Market Quotation (THMQ) data. This enables me to document sensitivity with respect to this dimension. I also contribute to the literature by modeling consumer responses and substitution patterns on *both* legal and illegal markets simultaneously.

Using difference-in-difference and event-study estimation techniques, I first show that legalizing recreational cannabis resulted in illegal cannabis prices dropping by more than 18% and quality rising by almost 2%. This suggests legalization would reduce market power on the black market for cannabis. Yet, the extent to which – or whether at all – legalizing recreational cannabis causes its black market to shrink is unclear. Such a response could indeed be symptomatic of reduced costs or enhanced competition on the black market itself, when legalization brings down the risk of being detected for the illegal branch and, thereby, lowers entry and production costs on this market. Besides, the price effect of legalization is heterogenous across products of different THC potencies: it is driven by low and medium potency products, whereas the price of more potent products does not decrease. This result, new to the literature, suggests that, after legalization, the black market targets the demand for more potent products, which are more damageable to health.

This analysis motivates the evaluation of a random utility discrete choice model that accounts for preferences with regards to quality. I combine the THMQ data with legal price data from the Washington State Liquor and Cannabis Board and consumption microdata from the WA BRFSS. Consumers are sensitive to both price and THC potency. I then use the demand estimates obtained to esimate the marginal cost of legal and illegal cannabis. This enables me to derive the best-response functions of the black market to changes in legal price and quality. This counterfactual analysis presents high quality provision as a creditable tool to drive illegal retailers out of the market.

Data limitation resulted in two main challenges.

The first one relates to data gathering itself. The nature of the illegal cannabis market leaves little room to data. Crowd-sourced data from websites such as `www.priceofweed.com`, which has been used by the literature and policy makers, do not provide much information for time periods prior to 2010, which corresponds to the primer of the legalization policy wave. To properly estimate the effect of legalization, I then turned to an original crowd-sourced dataset: *High Times* magazine's Trans-High Market Quotation. Collecting this data involved in part the use of Optical Character Recognition techniques, as well as considerable manual processing. The THMQ data not only contains information on prices, it also contains information on cannabis strains. To make most of this data, I web-scapped Leafly's strain browser to obtain strain information – including expected THC potency – and matched it to the THMQ.

The second one relates to the fact that the BRFSS does not allow to distinguish legal from illegal consumption without any supplementary assumption. One issue I encountered was to design a model that would account for this feature and yet yield estimates for consumer sensitivity to price and quality on *both* markets, legal and illegal.

2 Weeding Out the Dealers? The Economics of Cannabis Legalization

The results of my job market paper are in line with the theoretical project on which I have been collaborating with Emmanuelle Auriol and Alice Mesnard. To which extent can a government legalize cannabis and push the illegal dealers out of the market? In this article, we propose a theoretical framework to model the choices of cannabis consumers confronted to risk, both before and after legalization. If legalization harms the black market, it is also at the cost of booming consumption, mostly through risk- and availibility-related mechanisms. Such an increase might not be politically desirable, which motivates our question. We show that combining legalization with sanctions against the illegal market can overcome the trade-off between the cost of prohibitive policies and the rise in consumption associated to legalization. We propose an eviction strategy for a government aiming at eradicating the black market by regulating a retail market for cannabis. Numerical applications underline the importance of setting high quality standards. We add to this analysis by studying the compatibility of the diverse policy goals that have been considered by governments while legalizing cannabis. By providing a framework and tools to reflect on cannabis policy, our project aims at enhancing the understanding of current regulations – and their failures – and conscious design of upcoming policies.

3 Controlling Illegal Migration: Can a Market for Temporary Foreign Work Permits Help?

The type of framework we propose in "Weeding Out the Dealers? The Economics of Cannabis Legalization" is very general and can be used to think various questions involving risky behavior. One example is irregular migration.

In this paper, we model the choices of low-skilled potential migrants and the supply of human smuggling services. We study whether and how temporary visa schemes can be implemented to eradicate human smugglers. Analogously to our theoretical paper, we show that controls – and inherent sanctions – are not incompatible with more liberal policies, they are complementary. Here combining a regulated market for temporary visas with border enforcement can overcome the tradeoff between migration control and free borders. We set visa duration and price at eviction levels, which drive smugglers out of business. We calibrate such eviction schemes on two route: Senegal to Spain and the Democratic Republic of Congo to South-Africa. Our results highlight the challenges of such schemes, especially on South-North routes where differences in income make individual choices more sensitive to variations in risk and constraints linked to overstay tighter.

4 Future projects

To conclude this statement, I should mention two future projects that are part of my research agenda.

The first one is in continuity of my job market paper. Gathering the THMQ data, I observed that a substantive number of illegal retailers offer quantity discounts. Besides, due to data limitation, my project for now limits the definition of market quality to average THC potency. Future research therefore would refine the analysis of this paper and consider multi-dimensional price and quality responses.

The second one relates to the market for irregular migration. Reading testimonies from clandestine Congolese migrants who reached South Africa, I realized that in some instances searching costs for international migration can be higher on the legal market than on the illegal market. Measuring the magnitude of this cost and its effect on migration choices would enable policy makers to build more effective policies to tackle human smuggling issues. To do so, one could collect and exploit experimental data that measures the effect of information related to ambassy services on migrants' behavior.