An Economic Perspective on the

Impact of Cannabis Legalization on the Illicit Market

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Legalization initiatives and policy objectives

Wave of policy reforms legalizing recreational cannabis, including in the U.S. and Canada



One shared policy goal: fighting the black market

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What to expect following legalization policies?

What can we learn from consumer preferences for cannabis?

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What should we expect from cannabis consumers?

1. Cannabis users respond to changes in $\ensuremath{\textit{risk}}$

Williams (2004); Jacobson (2004); Adda et al. (2014); Pacula et al. (2010)

2. and are sensitive to availability.

Jacobi and Sovinski (2016)

These effects drive up consumption.

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3. Cannabis users are also sensitive to prices

• of black-market cannabis

Davis, Geisler and Nichols (2016); Jacobi and Sovinsky (2016)

• and legal cannabis.

Hansen, Miller, Weber (2017); Hollenbeck and Uetake (2021)

as well as quality.

Providing potential tools to regulate the market for licit cannabis.

Legalization policies and the black market

	legal	retail
Colorado	-0.146***	-0.196***
	(0.0421)	(0.0549)
Maine	0.0382	-
	(0.0423)	
Massachusetts	0.00397	-0.0480***
	(0.0288)	(9.18e-15)
Oregon	-0.354***	-0.291***
	(0.0118)	(0.0150))
Washington	-0.296***	-0.259***
	(0.0436)	(0.0368)
Average effect	-0.151***	-0.183***
	(0.0188)	(0.0177)

* p < 0.10, ** p < 0.05, *** p < 0.01

This table extracted from Perrault (2023) reports the OLS estimates for the effects of cannabis legalization (column 1) and retail sales (column 2) on the black-market price for cannabis. The results are based on 4,718 observations of crowd-sourced prices for illegal cannabis extracted from *High Times* magazine's THMQ data between December 1999 and February 2019. Maine is not observed after the *retail* treatment. Estimates account for state and year fixed effects and standard errors in parentheses are clustered at the state level.

Legalization policies and the black market

	legal (1)	retail (2)
Colorado	0.0298***	0.0296**
	(0.00806)	(0.0108)
Maine	-0.0567***	-
	(0.00961)	
Massachusetts	0.104***	0.0609***
	(5.30e-14)	(7.82e-15)
Oregon	-0.00678	-0.000304
	(0.0120)	(0.0130)
Washington	0.0217**	0.0249***
	(0.00876)	(0.00829)
Average effect	-0.00735	0.0248***
	(0.00484)	(0.00504)

* p < 0.10, ** p < 0.05, *** p < 0.01

This table extracted from Perrault (2023) reports the OLS estimates for the effects of cannabis legalization (column 1) and retail sales (column 2) on the black-market price for cannabis. The results are based on 3,943 observations of crowd-sourced data on illegal cannabis extracted from *High Times* magazine's THMQ data between December 1999 and February 2019. Maine is not observed after the *retail* treatment. Estimates account for state and year fixed effects and standard errors in parentheses are clustered at the state level.

What do these effects tell us about the state of the black market *post-legalization*?



PRE-LEGALIZATION STATUS QUO



POST-LEGALIZATION PARTIAL EQUILIBRIUM

(ILLEGAL RETAILERS DO NOT REACT)



POST-LEGALIZATION EQUILIBRIUM

(AFTER ILLEGAL RETAILERS REACT)



POST-LEGALIZATION EQUILIBRIUM

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Lower prices do not necessarily mean that the black market shrinks!

For detail, see: Auriol, Mesnard, Perrault (2023)

What can we learn from consumer preferences for cannabis?

- How do consumers react to changes in price? in other attributes?
- To which extent do they substitute legal and black-market cannabis?
- How can the legal market compete adequately against the black market?

• ...

Measuring consumer substitution patterns between legal and black-market cannabis **requires data on...**

- legal cannabis,
- black-market cannabis,
- consumption

in the same market, at the same time!

Demand elasticities for cannabis

	Price	Quality
Prohibition		
illegal-own	-0.252	6.187
	(0.0283)	(0.544)
Legalization		
illegal-own	-0.227	6.237
	(0.0545)	(0.682)
legal-own	-0.510	0.419
	(0.249)	(0.0349)
legal to illegal	0.0293	-0.562
	(0.0284)	(0.521)
illegal to legal	0.0200	- 0.0244
	(0.0220)	(0.0254)

This table extracted from Perrault (2023) presents the elasticities of consumer participation to the legal and illegal markets for cannabis, with respect to price (column 1) and quality (column 2) in the state of Washington. Results are based on data from the BRFSS, combined with *High Times* magazine's THMQ, as well as Washington's Biotrack data, between 2011 and 2017.

- Consumers are sensitive to both price and quality.
- Yet, they do not substitute between legal and black-market cannabis based on price.
- Quality is the main driver for substitution.

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Policies cannot focus on price at the expense of quality!

Policy implications and takeaway message

- Understanding how consumers react to legalization policies and their preferences is key to build effective policies.
- It also requires to invest in data on the cannabis market.
- To weed out the dealers, quality is key!... and enables to raise the (legal) price and contain consumption.

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Food for thought:

- Legalization policies can be tailored by combining retail sales of high-quality cannabis with sanctions against the black market.
- Eradicating the black market might not be compatible with other government objectives (e.g. maximizing tax revenue) See: Auriol, Mesnard, Perrault (2023)

Thank you!

