Mining and Alcohol Consumption: New Evidence from Northern Canada

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New Evidence from Northern Canada

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Background

- Mines have been sources of wealth and economic development for thousands of years, but mineral output has drastically increased in the last 20 years.
- Mines can have both positive and negative effects on individuals living nearby, this includes:
  - Economic (Van der Ploeg., JEL 2011)
  - Environmental (Palmer et al., Science 2010)
  - Social (Phelan et al., Ecological Econ 2017)

Surface mine in Peru

Objectives

- Estimate the effect the presence of a mine nearby has on the number of alcoholic drinks consumed by individuals living in Northern Canada

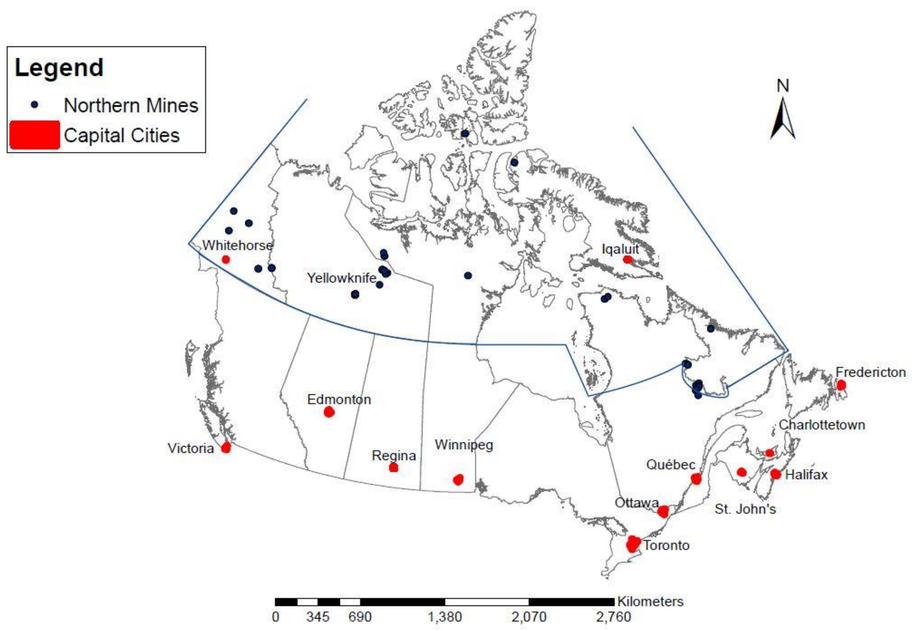
From Mining to Alcohol

- Pathways through which mining may lead to increased alcohol consumption (Parkins et al., Community, Work and Family 2011):
  - Multiple divergent economic sectors
  - Transience
  - Shift Work
  - High Income

Data

- Canadian Community Health Survey (2000-2012)
  - Large cross-sectional Statistics Canada micro-data file
  - Three surveys, over 380,000 respondents across Canada
- Natural Resources Canada GEOSCAN data for all producing mines in Northern Canada

2000-2012 Operating Mines in Northern Canada



Model and Methods

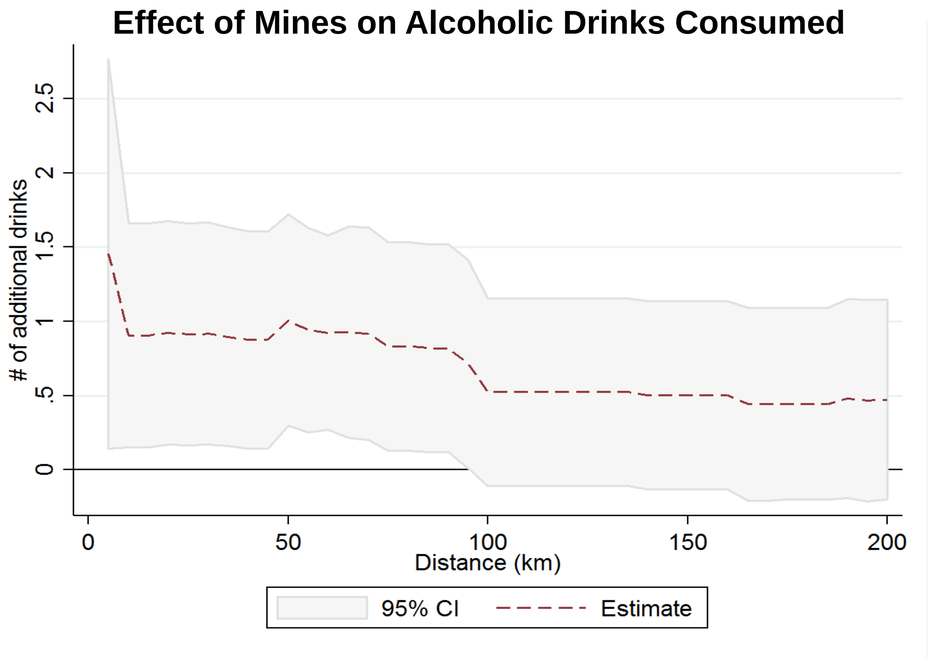
- Calculated the Euclidean distance between the respondent's dwelling and all mines using Statistics Canada's Postal Code Conversion File and mine GPS points

$$Y_i = \alpha + \beta M_i + X_i\Lambda + Z_{jt}\Gamma + \gamma f(L_i) + \lambda_j + \mu_t + \varepsilon_i$$

- i: Respondent. j: Forward Sortation Area (FSA). t: Survey time period
- Y: Number of alcoholic drinks in last week. M: Number of mines nearby. X: Socio-economic control variables. Z: FSA control variables. L: Latitude. λ: FSA fixed effects. μ: Survey cycle fixed effects.

Results

- Individuals living closest to a mine drink the most additional alcoholic drinks due to mining, with the effect decreasing as the distance to mines increases



Regressors of Alcohol Consumption

	5 Km	10 Km	30 Km	50 Km	100 Km
Number of Mines	1.456**	0.906**	0.916**	1.007***	0.524
Age	0.174**	0.173**	0.174**	0.172**	0.175**
Age Squared	-0.003***	-0.003***	-0.003***	-0.003***	-0.003***
Married	-1.494***	-1.487***	-1.490***	-1.487***	-1.485***
Male	2.761***	2.762***	2.760***	2.765***	2.762***
White	1.677**	1.677**	1.674**	1.661**	1.708**
Number in Household	-0.233**	-0.233**	-0.232**	-0.228**	-0.249**
Aboriginal Ethnic Origin	1.484**	1.474**	1.469**	1.483**	1.467**
R Squared	0.096	0.096	0.096	0.097	0.095

N=3608, *** p < 0.01, ** p < 0.05, * p < 0.1

Discussion and Conclusions

- Mines are found to have a positive and significant effect on the number of alcoholic drinks consumed in Northern Canada, with individuals living closest affected the most
- Provides quantifiable empirical evidence of the relationship between mining and substance use

References

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