

Simulating the cocaine trade in the Netherlands



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1a. Introduction

Cocaine trade is a major illicit drug trade in the Netherlands (NL). In this project we aim to analyze, model and simulate the cocaine market in NL, in order to find effective policy levers to fight this form of serious crime.

1b. Key data used in the model

- 2015 - 2023
- Import data based on confiscations at main ports
- Cocaine use based on two yearly quiz
- Prices, export rates and dealers based on police data

1c. Key assumptions in the model

- All cocaine is imported – mainly from South America
- Most (<85%) cocaine is pre ordered and exported within 24 hours
- This wholesale export is the most important driver for the import
- The cocaine use in the Netherlands determines the size of the retail market
- Profits are the most important drive for dealing cocaine

1d. Cocaine market trends

↓	Wholesale price
↓	Distributive trade price
=	Retail price
↑	Retail quality

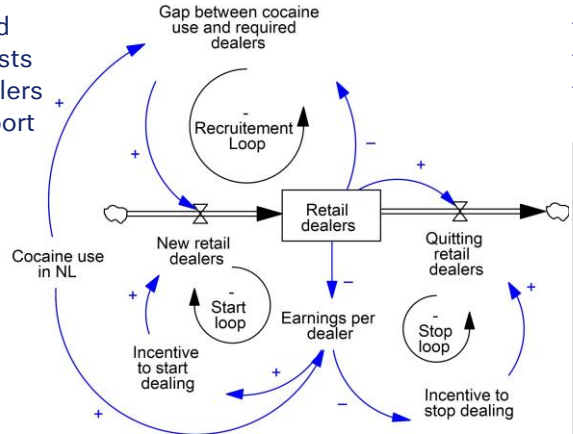
2a. Retail market CLD

Retail dealer population is modelled with 3 balancing loops. This suggests that the number of active retail dealers is hard to change. Police data support that finding; yearly arrests are relatively constant.

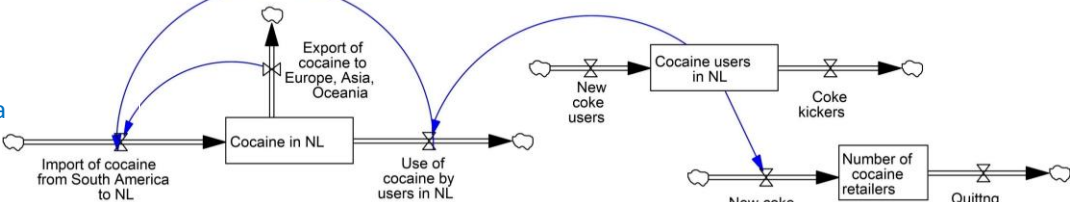
2b. Model outcome on retail dealers earnings dependance on user/dealer ratio

1	100 ^a	2,6 K€/Y
1	1500	31 K€/Y ^b

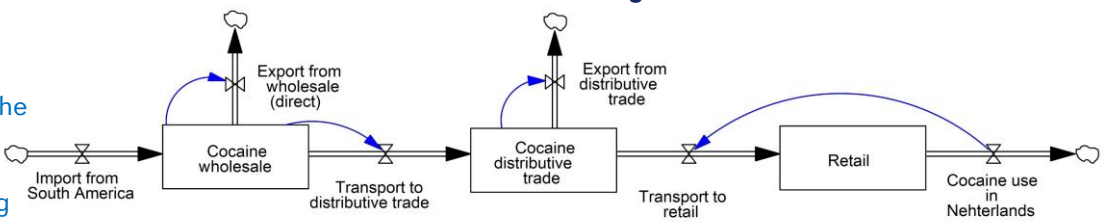
a Police estimate, b ~Dutch nominal income



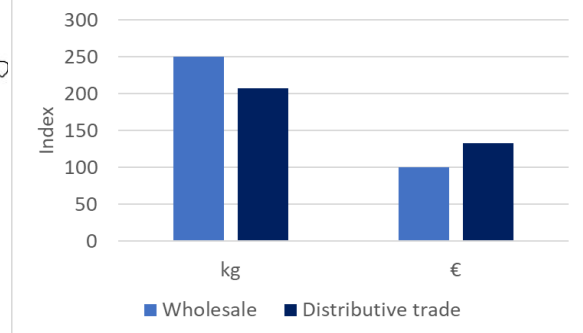
3a. Outline of the cocaine market model



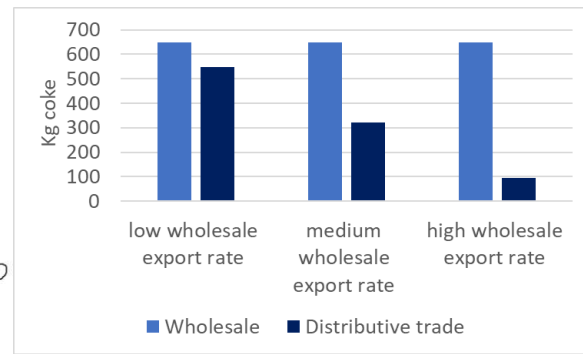
3b. Outline of the 3 market segments submodel



3c. Model outcomes of the volume and value of the market segments at FINAL TIME indexed to the retail market (index = 1). The distributive trade is relatively profitable, but also risky due to longer stashing.



3d. Scenario analysis shows that wholesale direct export rates mainly affect distributive trade. This is due to the faster dynamics of direct export compared to the rest of the logistic chain. FINAL TIME



4. Conclusion and discussion

- Cocaine use in NL is small compared to the import. Fluctuations in import volume are unlikely to affect the retail price
- Different market segments have different dynamics and influence each other
- The wholesale market behaves more like a monopolistic competition, while the retail market behaves like a free market
- Due to the fast export dynamics, stocks are relatively empty. Any confiscation policy should be a combination of interventions in transport and stashes simultaneously.