

Freight Day V

Parking Enforcement Policies for Commercial Vehicles

Mehdi Nourinejad, Ph.D. Candidate

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Civil Engineering
UNIVERSITY OF TORONTO

UTTRI University of Toronto Transportation Research Institute

66%

Downtown

700,000

Tickets



\$32 Million

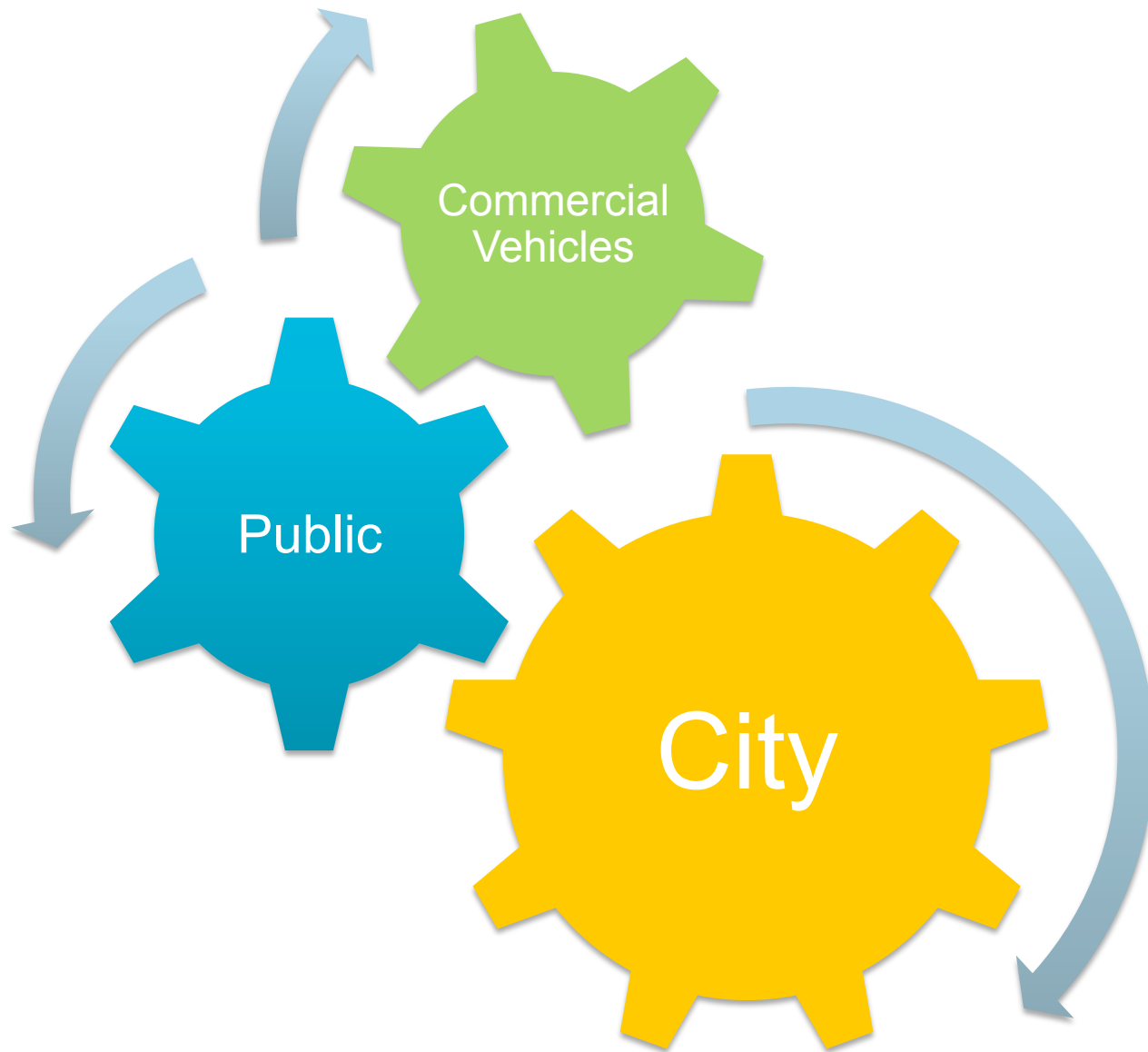


Congestion

500 Million Vehicle-Hours

Safety

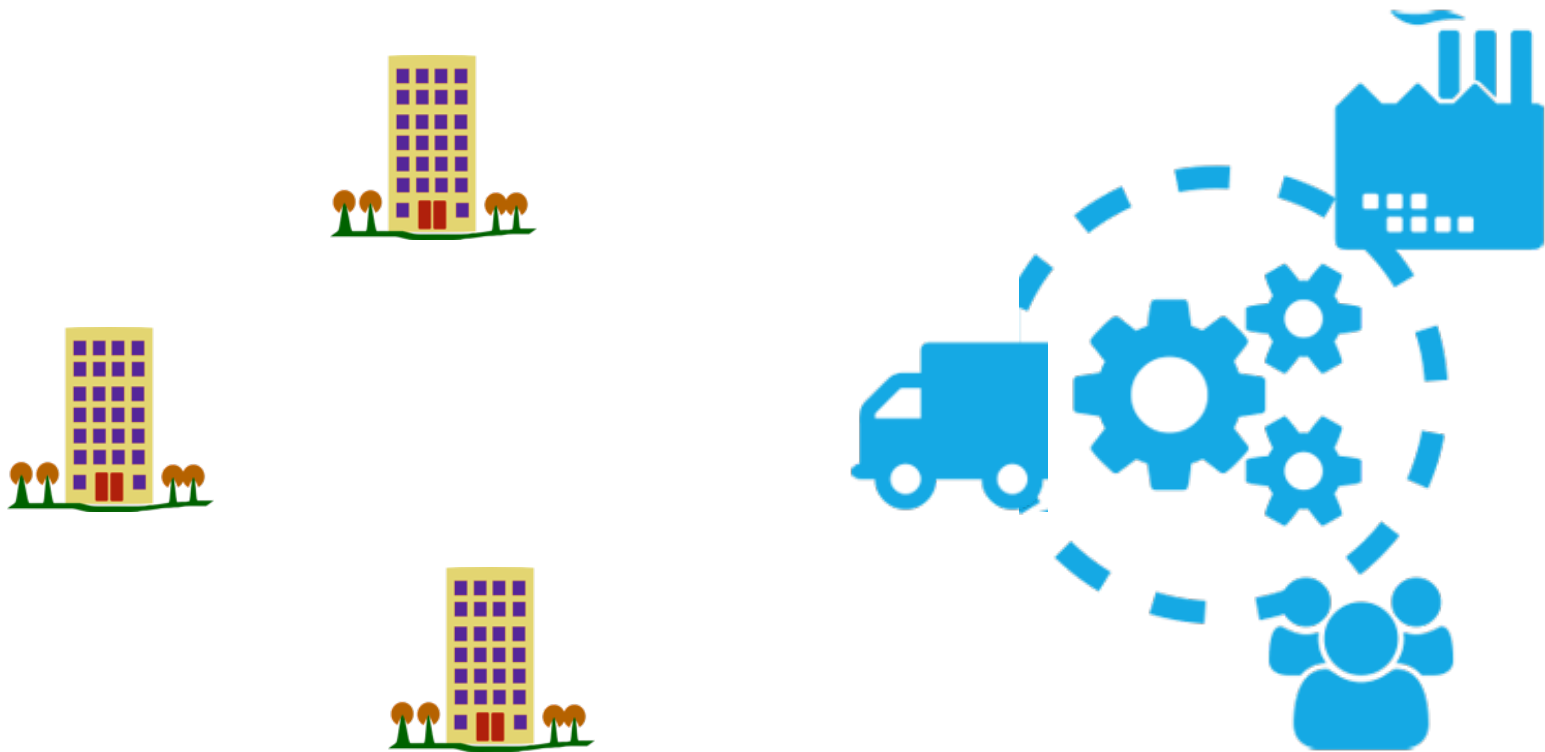
14% of illegal parking

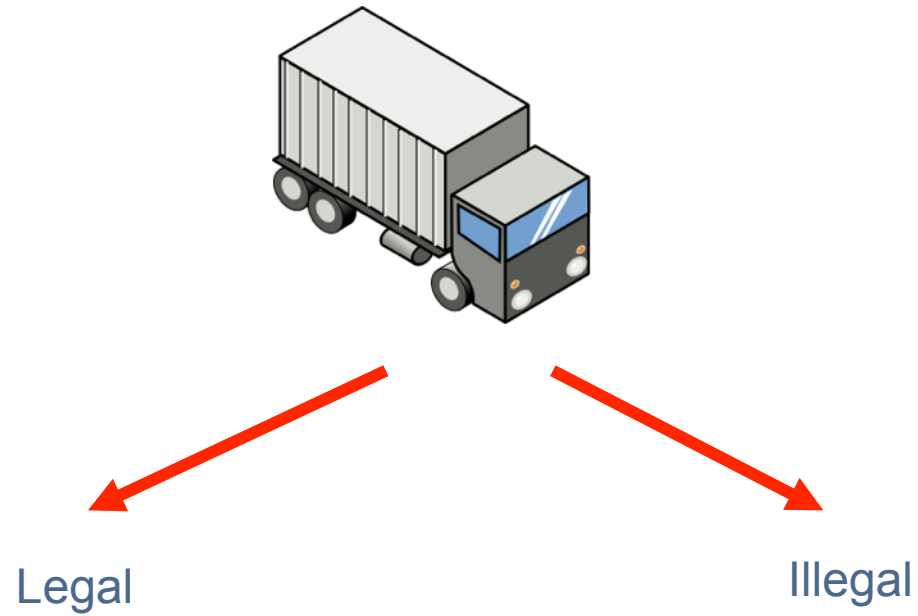


Overview

- Why park illegally
- Parking Enforcement
- Reaction to Enforcement
- Optimal Policies

The Last Mile



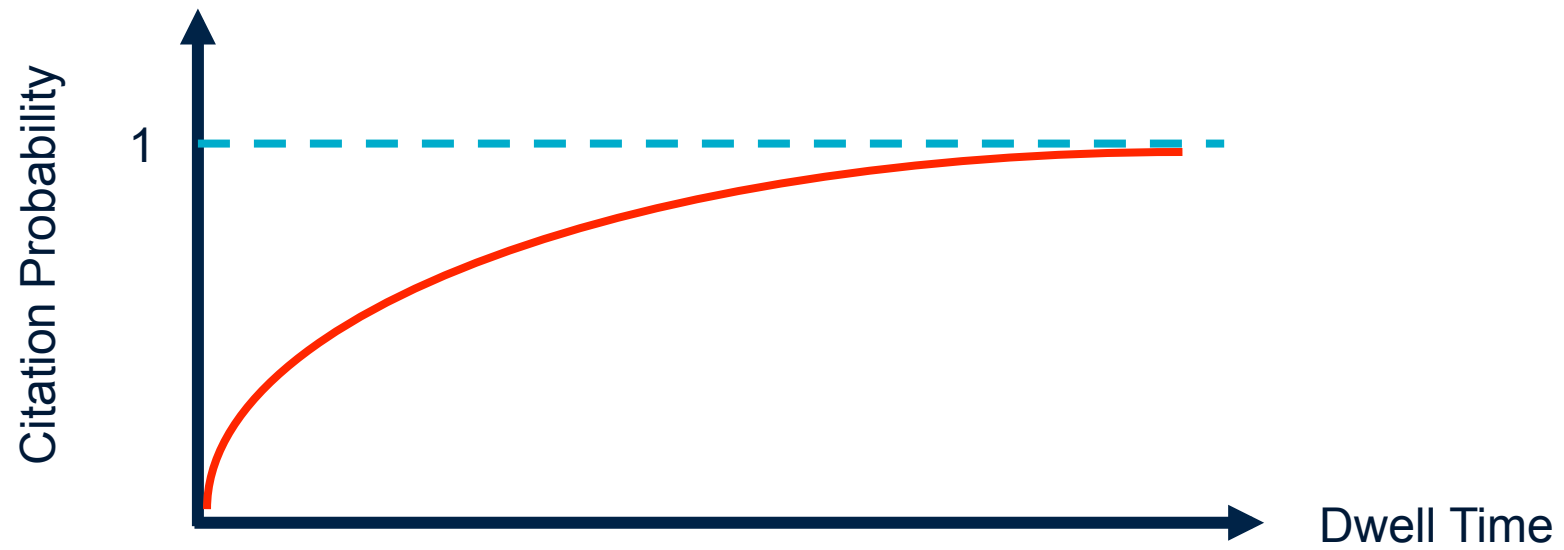


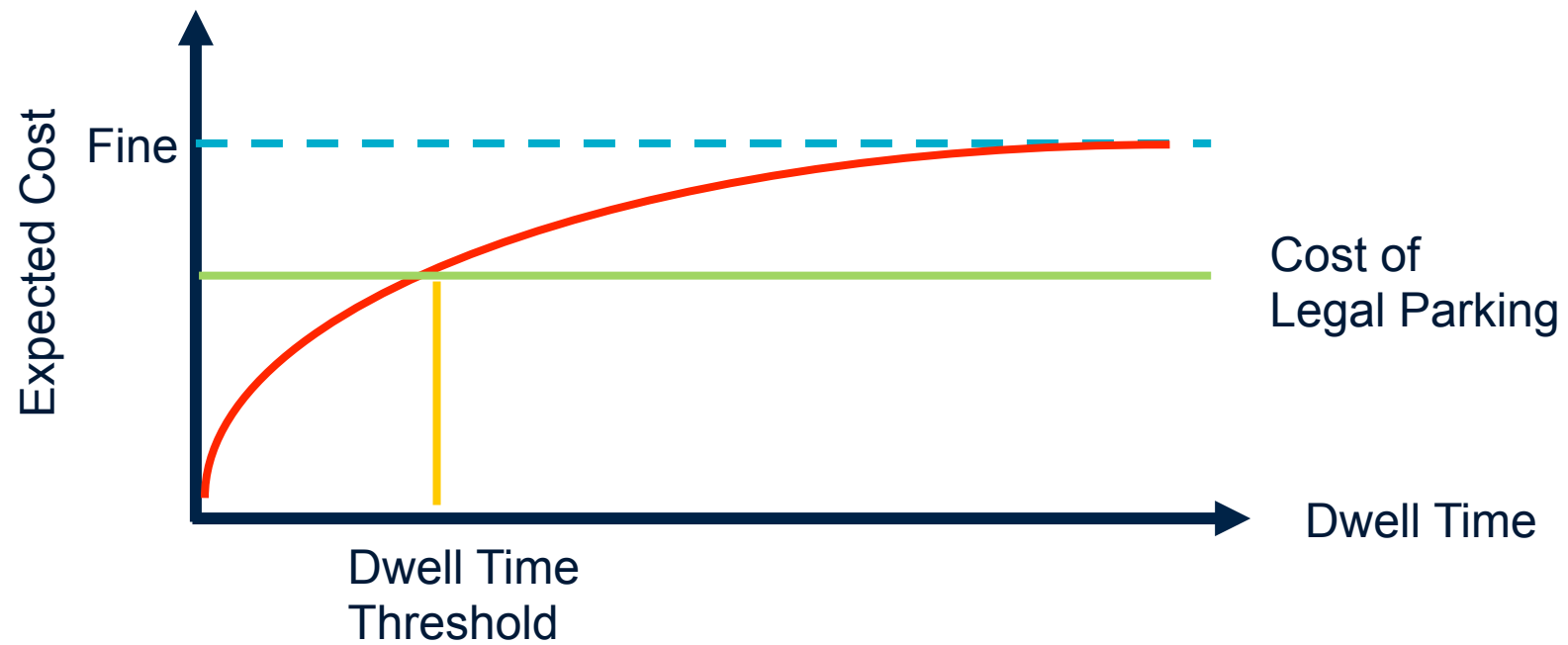
Dwell Time

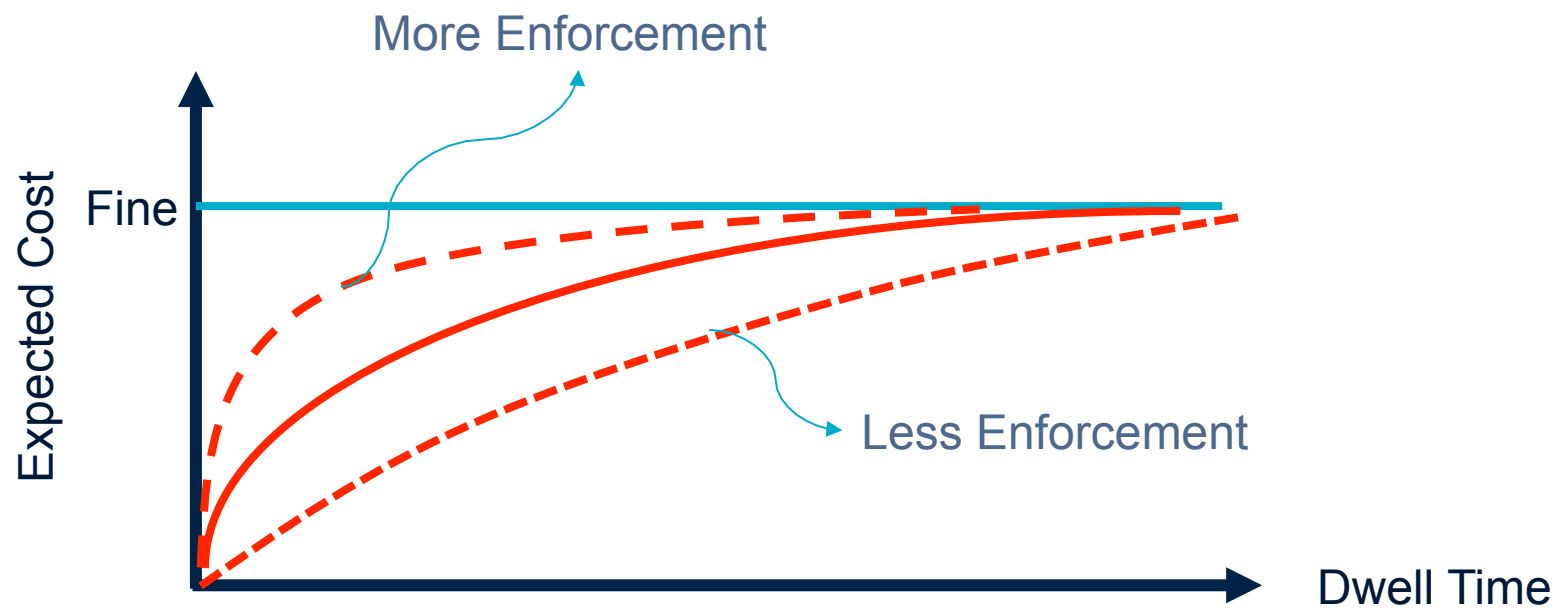
Citation Probability

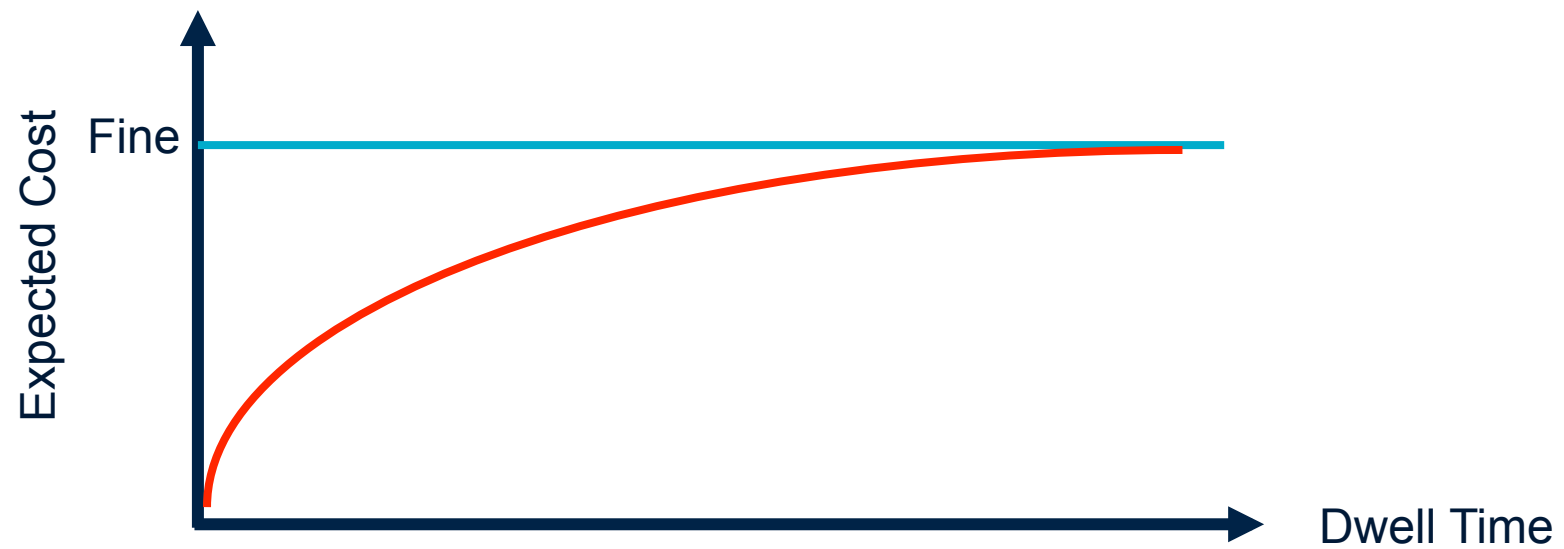
Fine

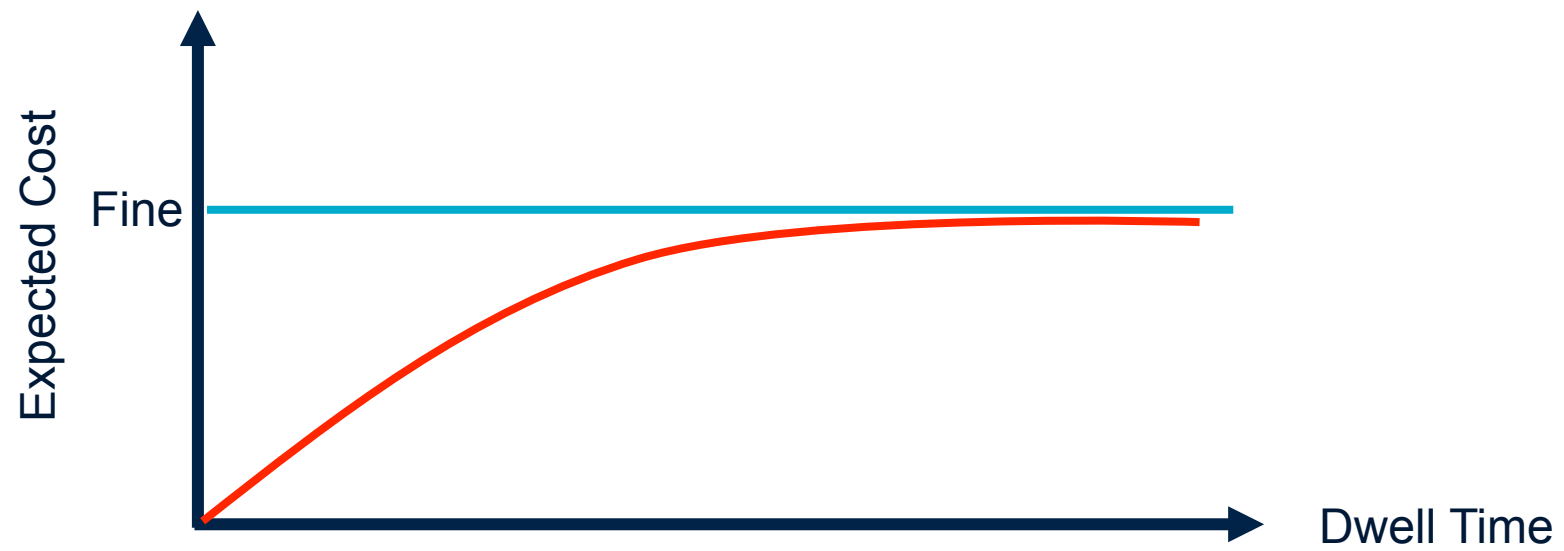
Parking History

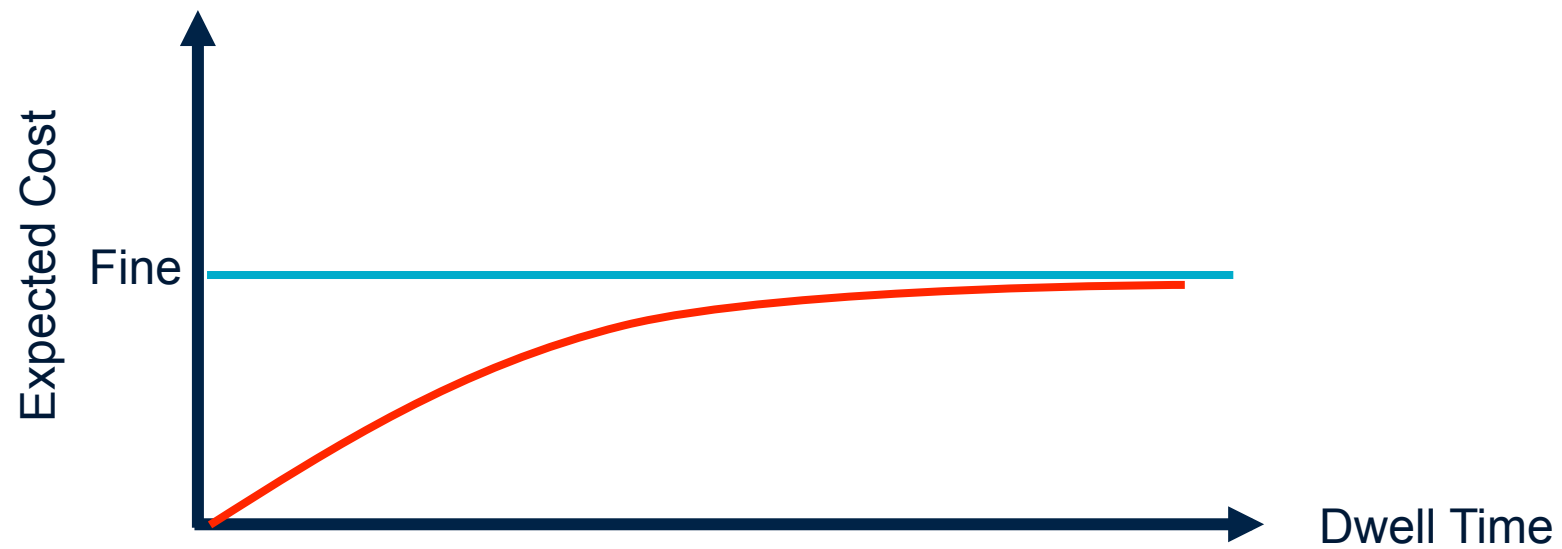


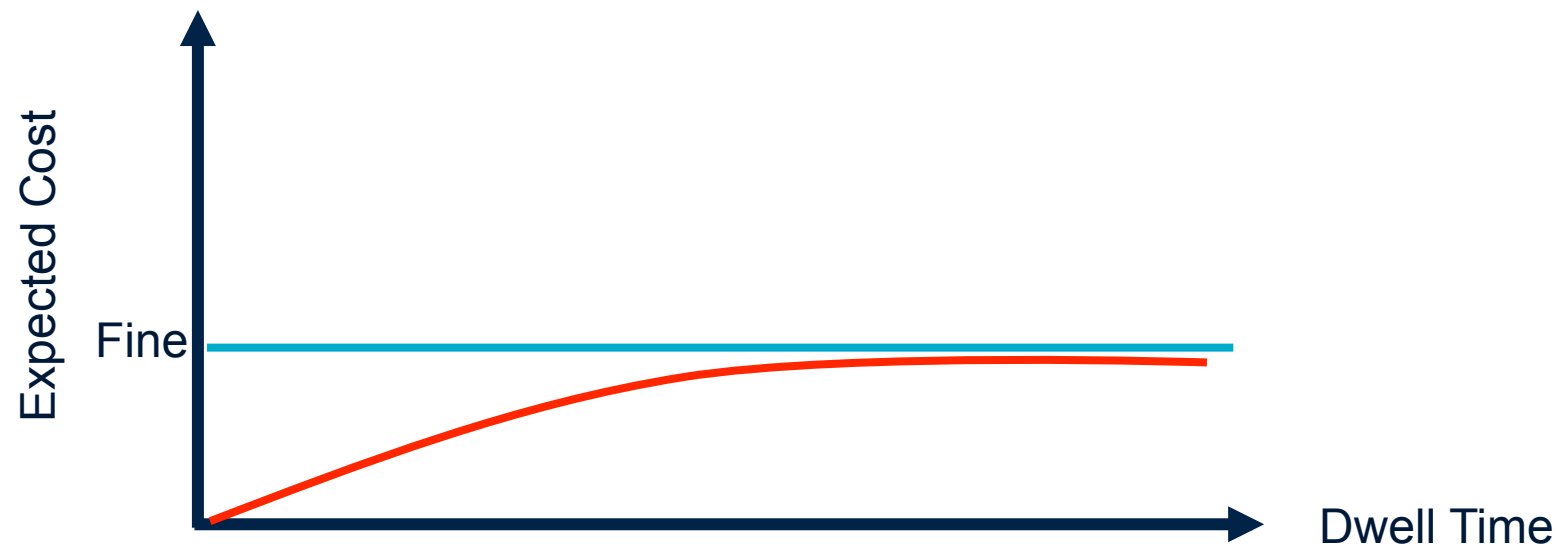


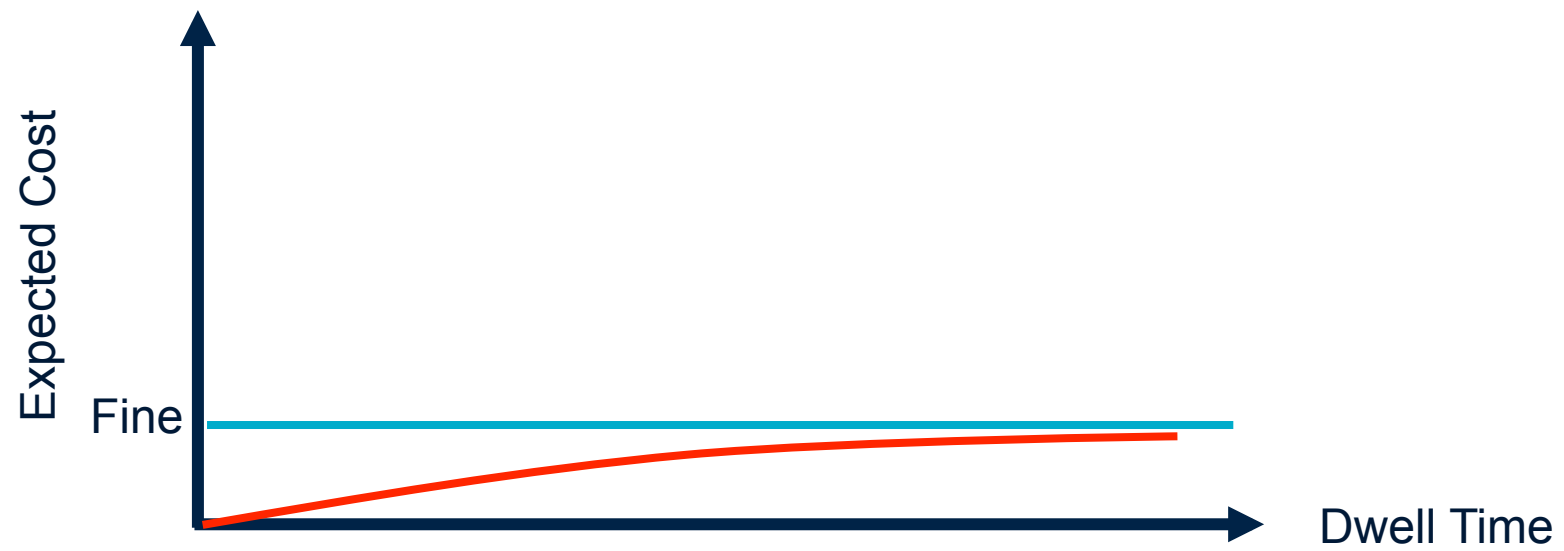


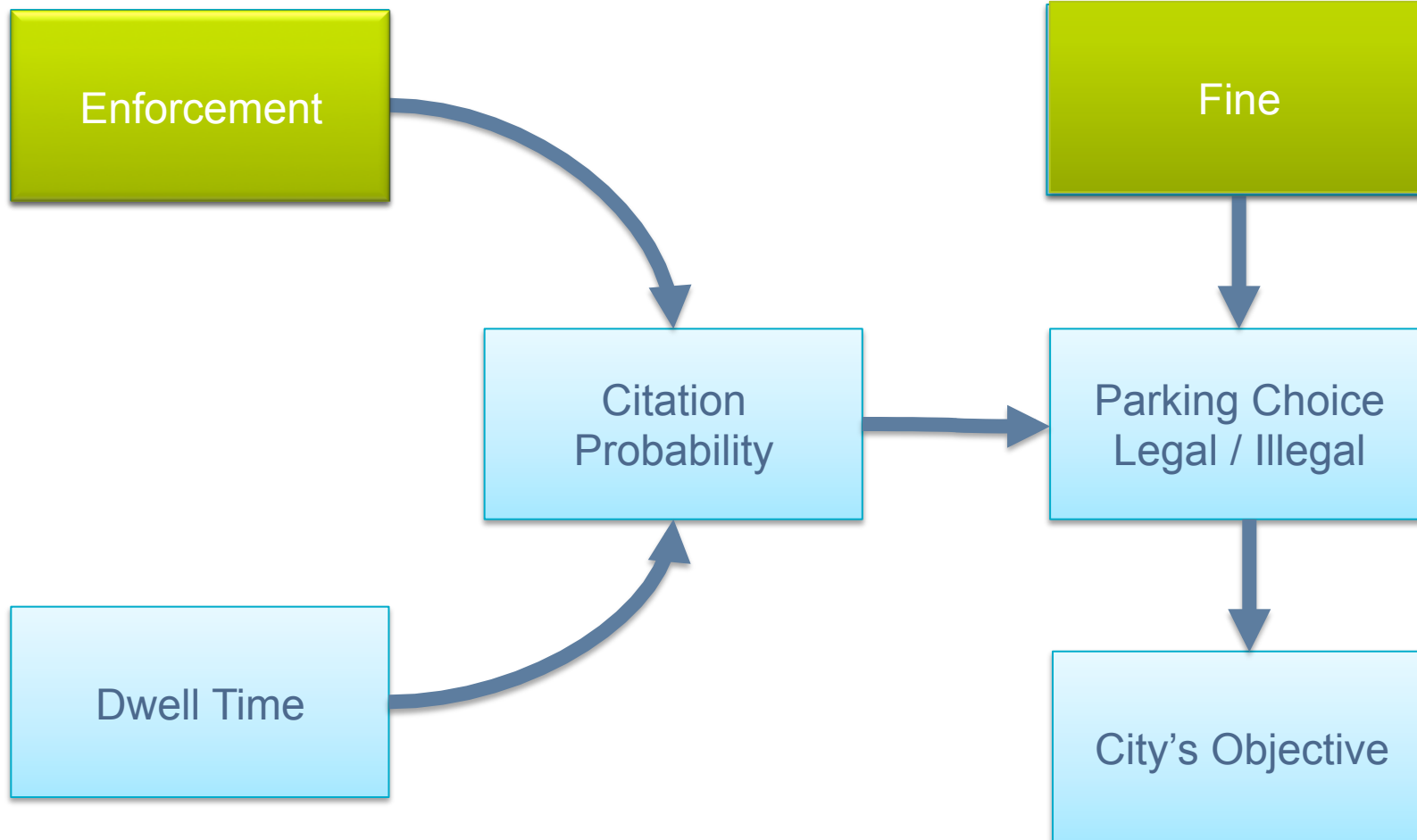












Social Welfare Maximization

Profit Maximization

Social welfare

Congestion



Enforcement



Distributors

Profit

Legal Parking



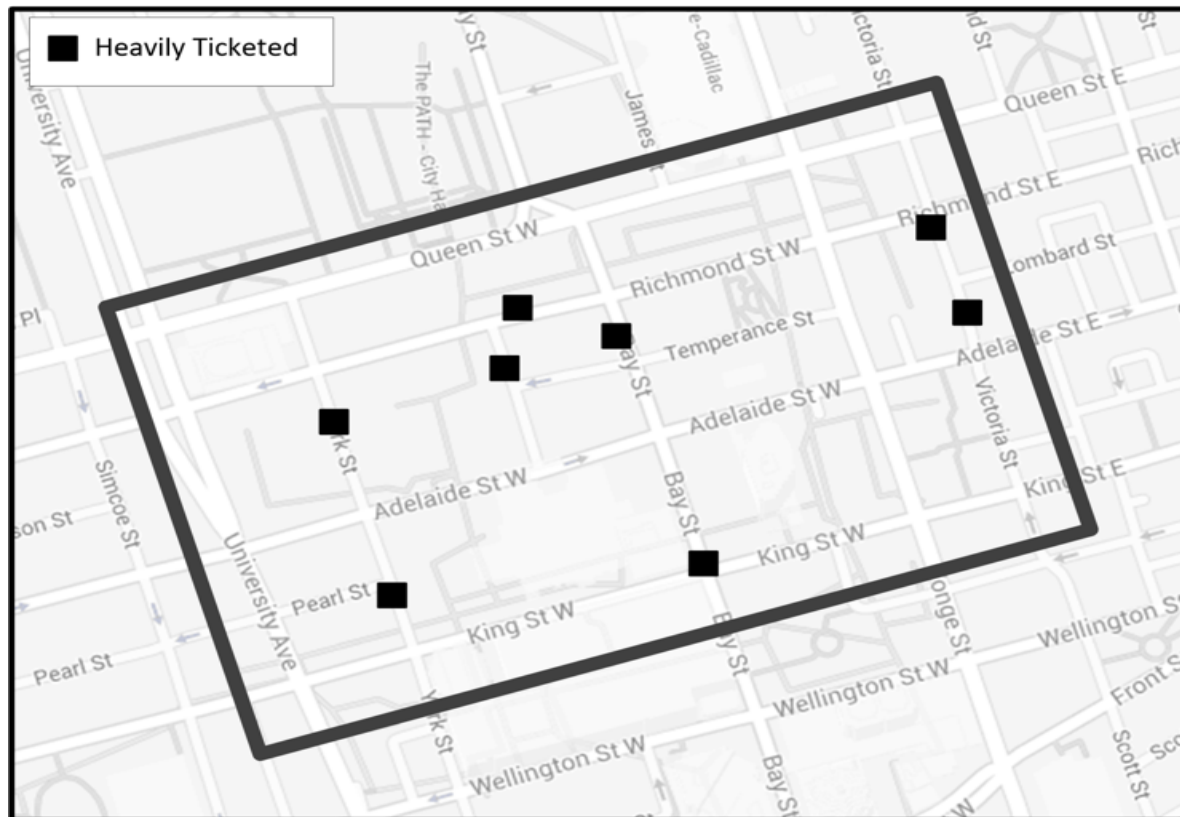
Fines

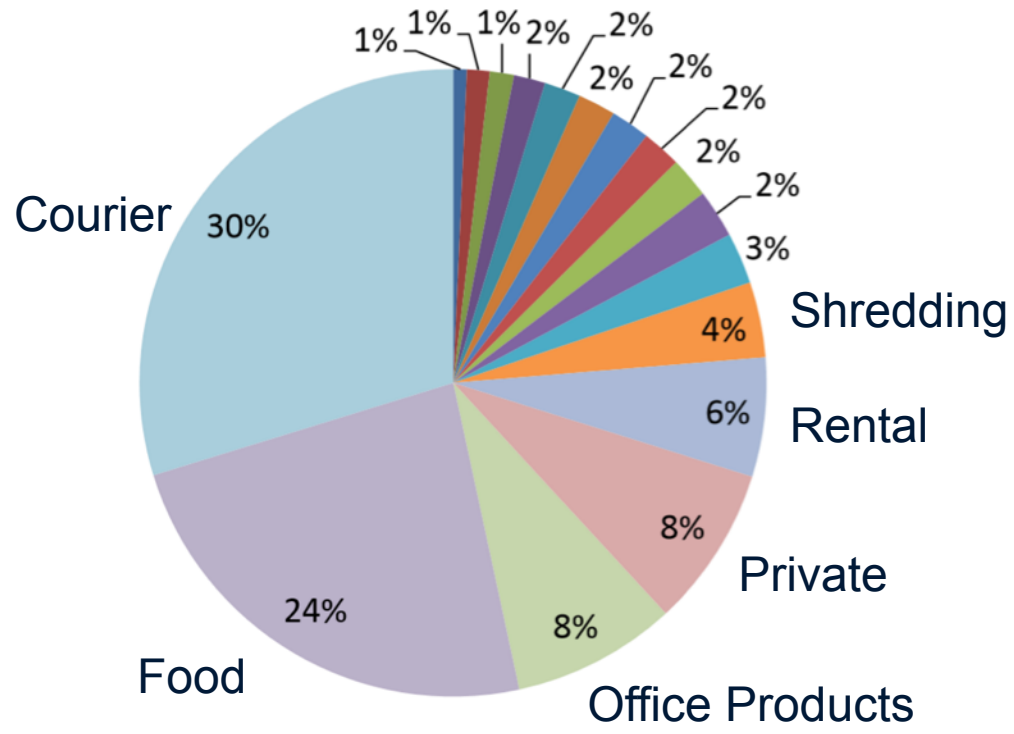


Enforcement

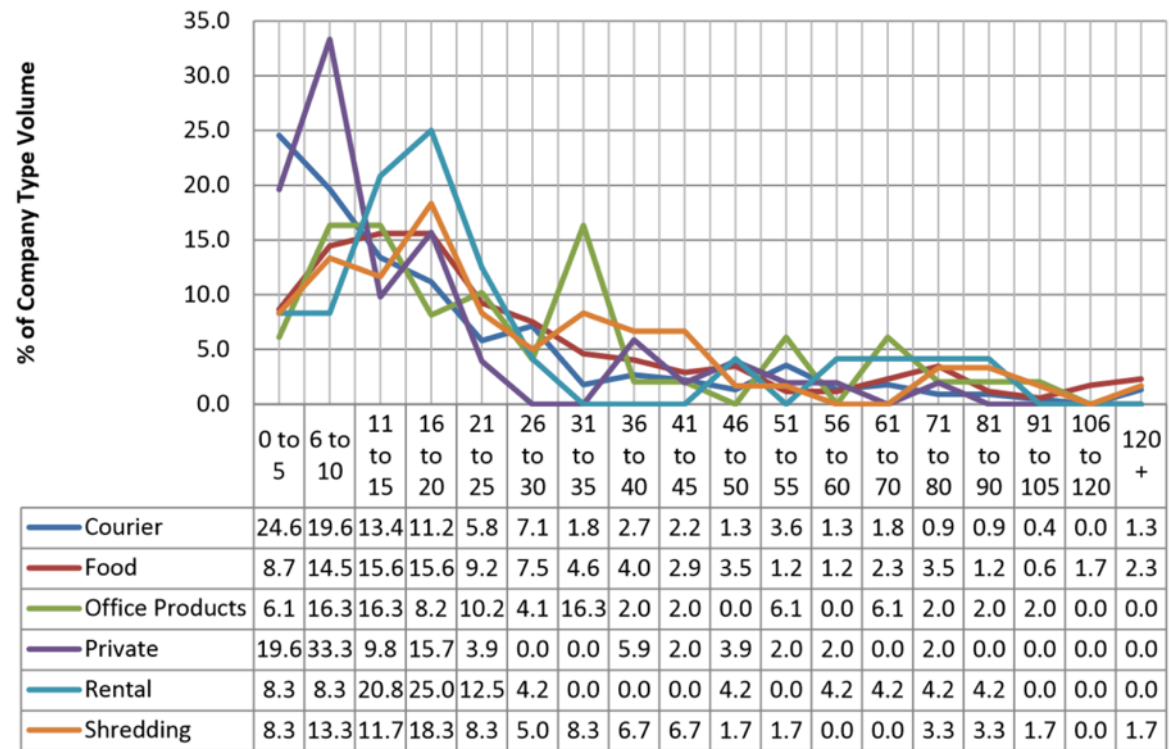
Case Study: City of Toronto

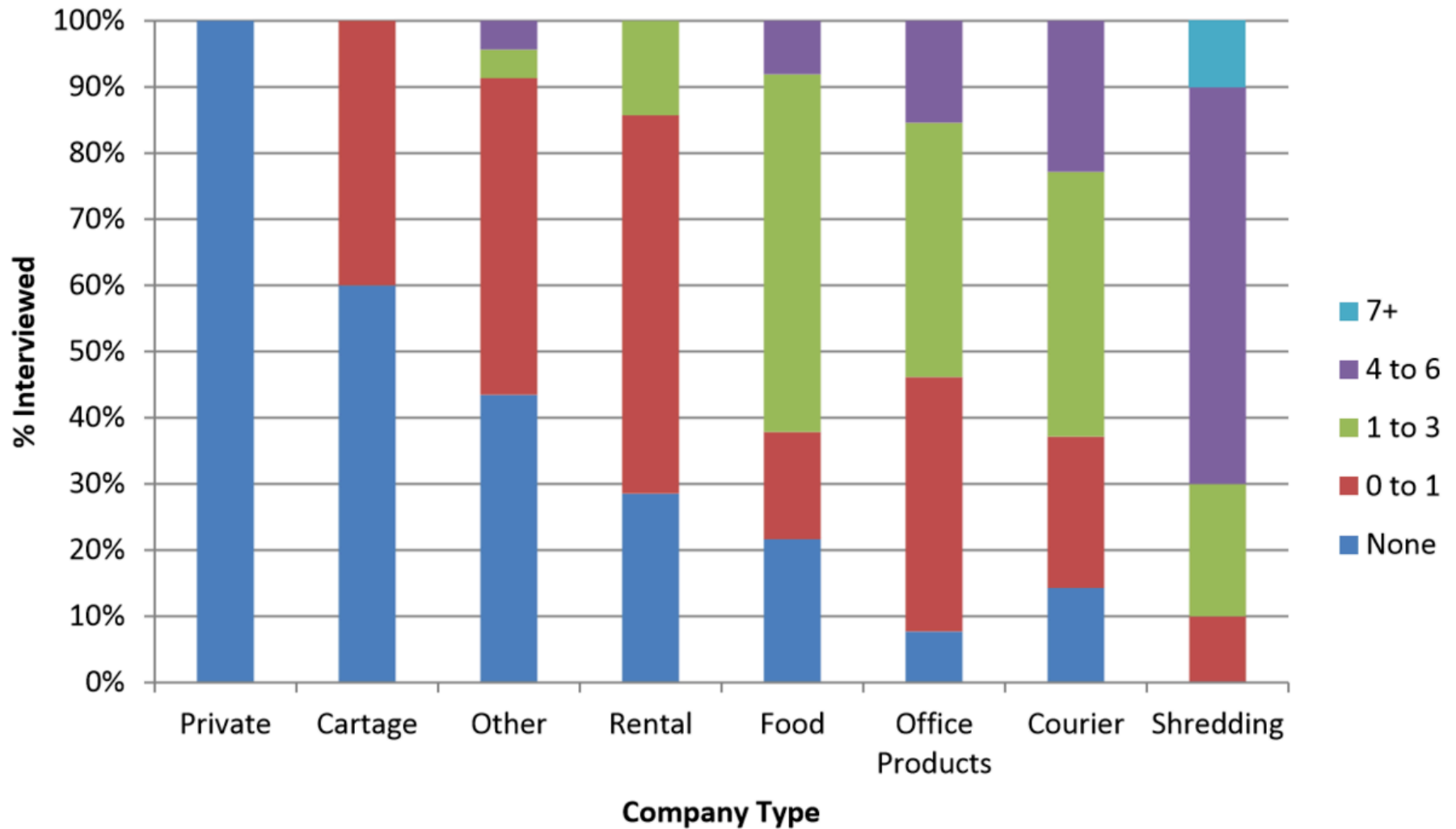
Case Study



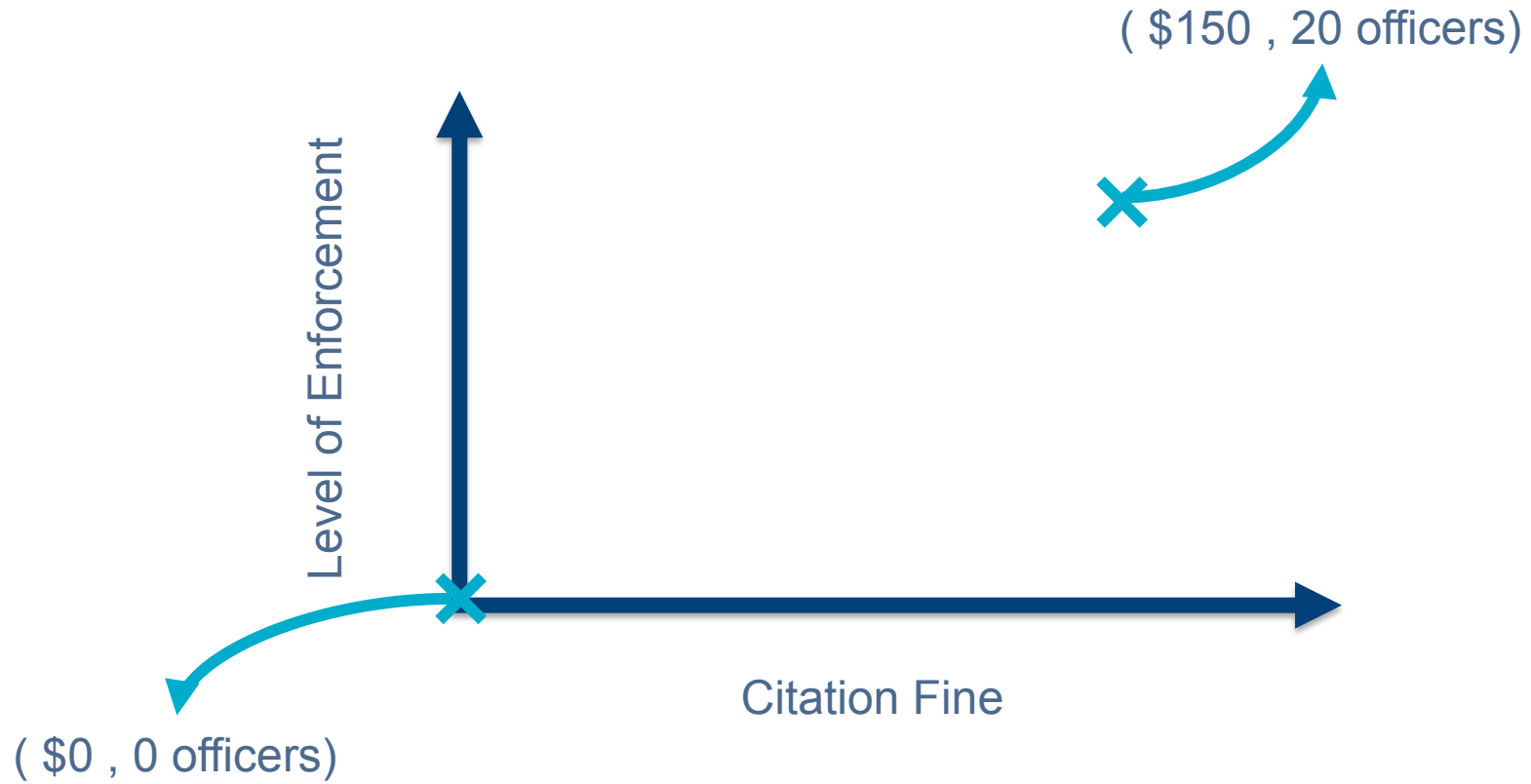


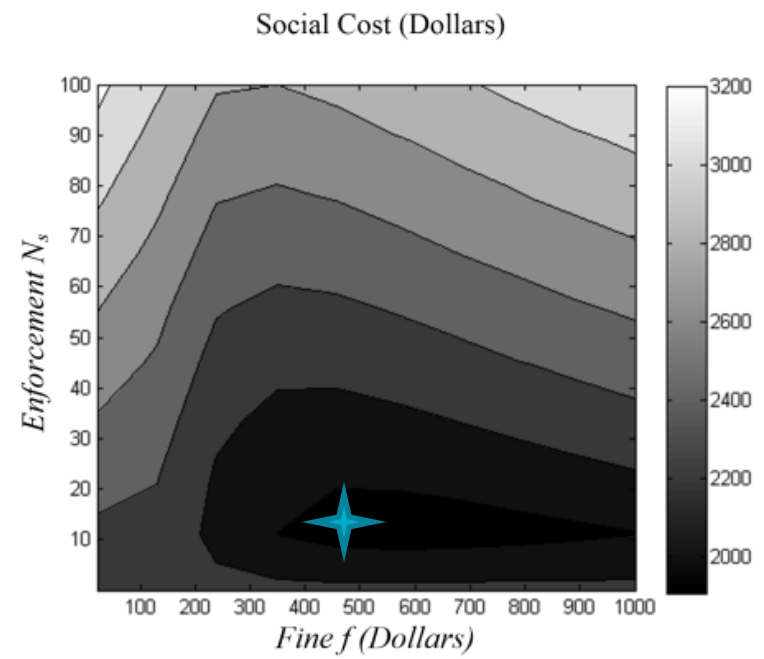
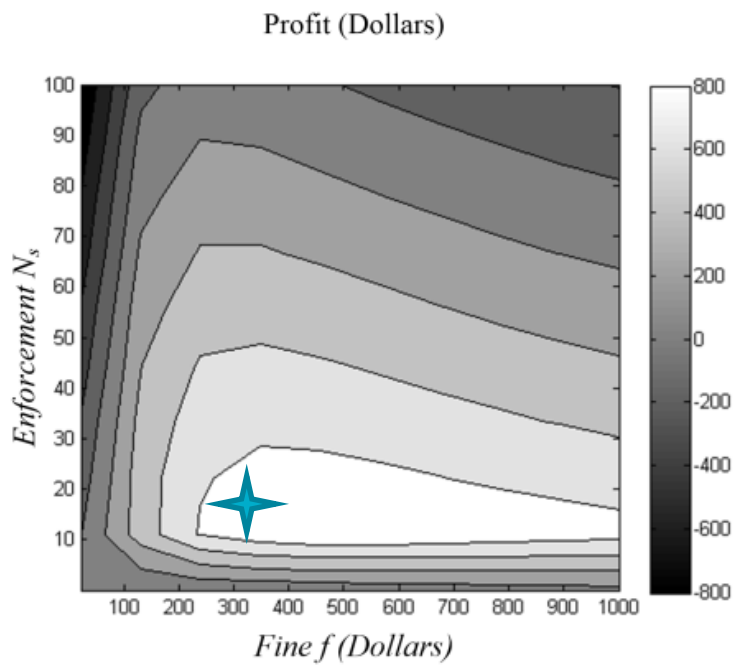
Relative Duration Between Company Types



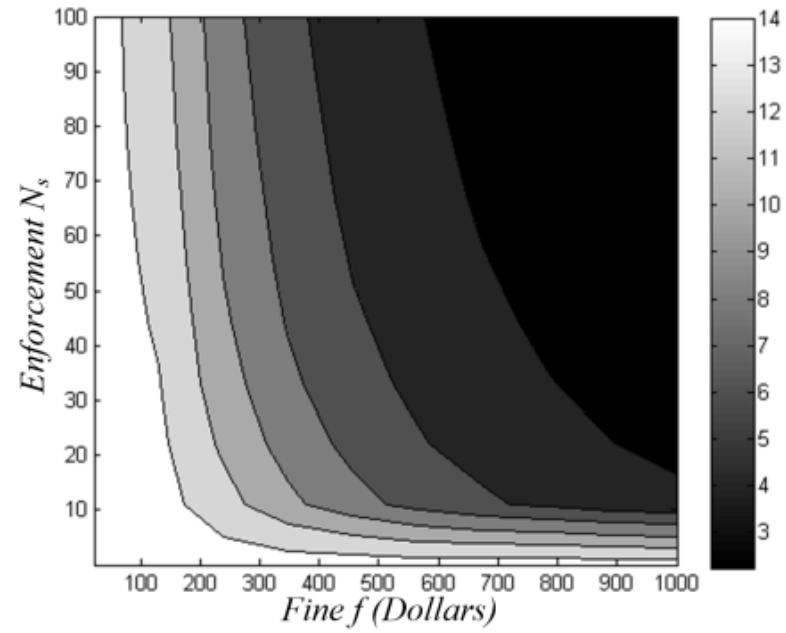


Policy Space

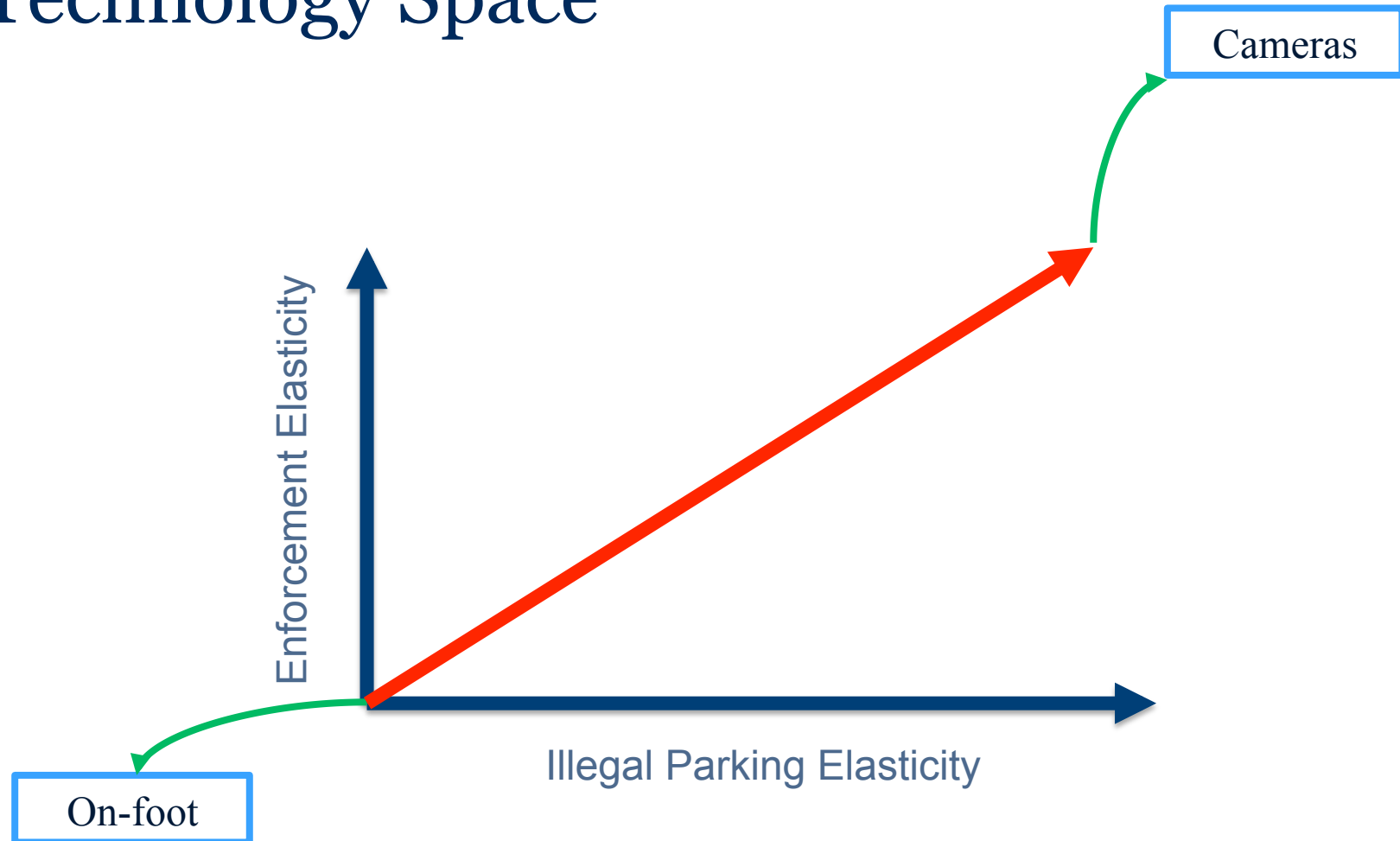




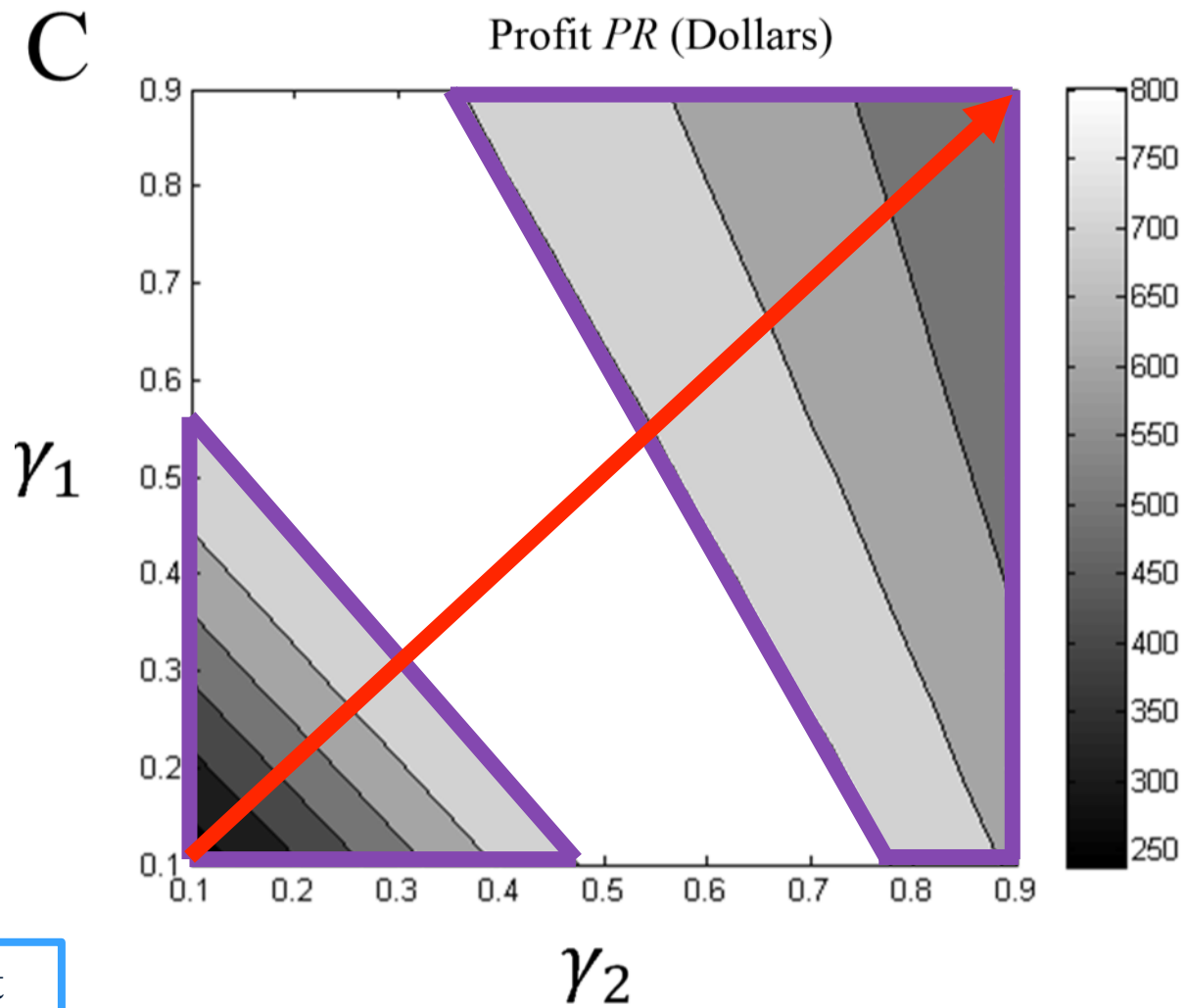
Number of illegal CVs N_e



Technology Space



Cameras



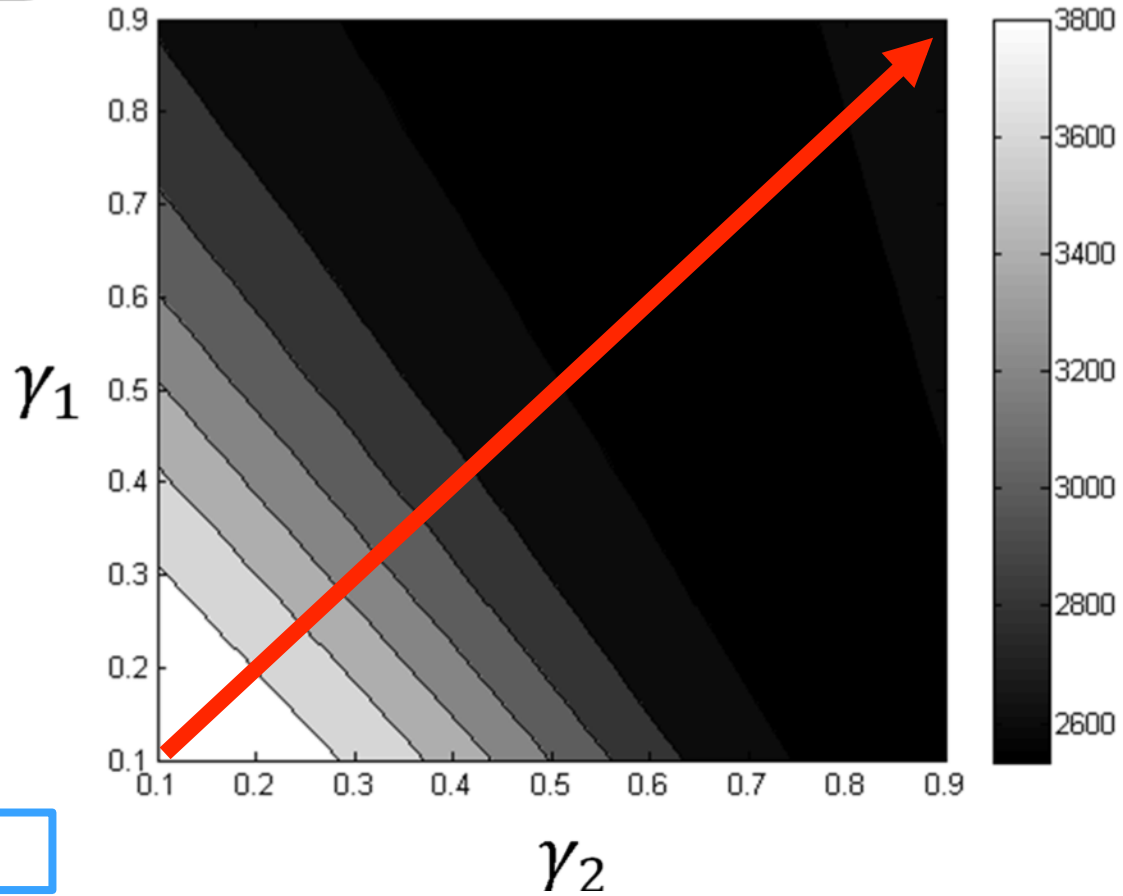
On-foot



D

Social Cost SC (Dollars)

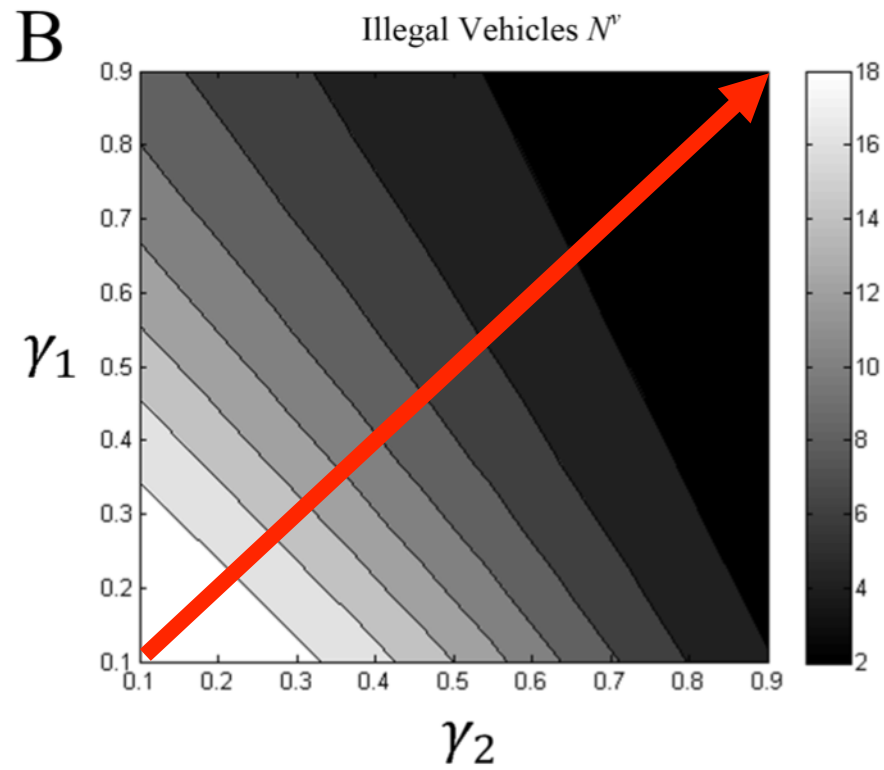
Cameras



On-foot



Cameras



On-foot

Key findings

- Too much enforcement is bad for social welfare AND profit
- Advanced enforcement technology decreases profit but increases social welfare
- Fine and enforcement are sometimes substitutable

Thank You

Questions?



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