

# PCC Rise 2021

How will a tolling scheme impact the inner city of Copenhagen?



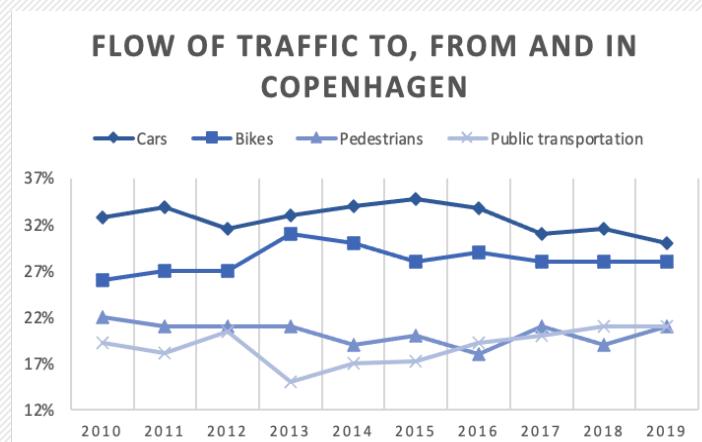
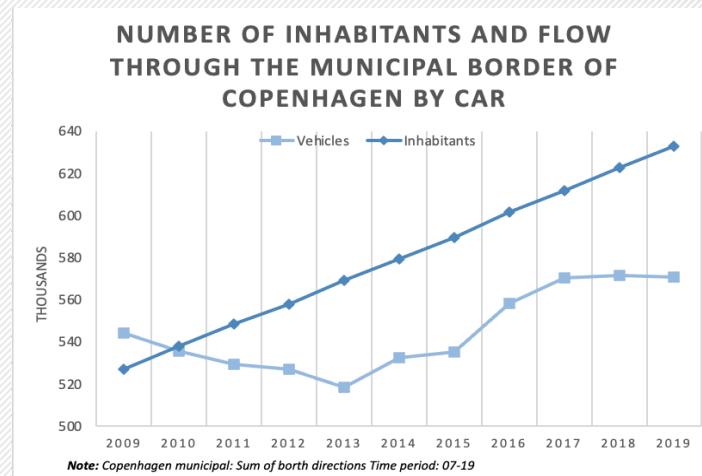
Harry Politer and the Case Competition

- Gustav Holm, Jeppe Vanderhaegen and Asger Damgaard-Sørensen



An increase in inhabitants of Copenhagen and flow through the municipal border of Copenhagen has been leading to higher  $CO^2$ -emissions and higher congestion.

- An increase in inhabitants of 22.5% since 2008.
- An increase in flow through municipal border of 5%
- No major change in mode of transportation



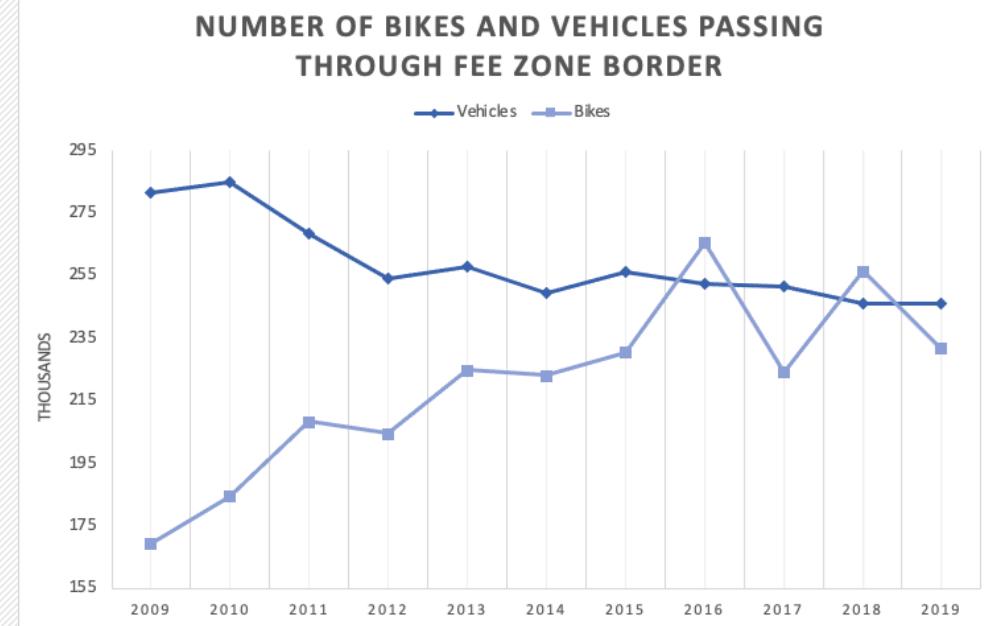


Data shows the quantity of vehicles in the proposed fee zone has been relatively steady over the past years. Therefore, a need for political intervention

Equilibrium reached for traffic flow in proposed fee zone without consideration of congestion etc.

No further short term decline in number of cars in the proposed fee zone

A necessary political intervention



**Our recommendation: Implementing the proposed fee zone would reduce total amount of vehicles in the proposed zone significantly**



- Having a flat fee in the proposed fee zone will decrease the flow of traffic between 14.2% or 15.31%
- Expected reduction in absolute numbers when equilibrium is reached between 34,986 or 37,697
- An increase in fee zone would cause further decrease in number of cars

	Stockholm	London
Congestion reduce in fee zone.	25%	18%
Payment system.	0-26DKK (Variable Fee)	96DKK (Flat Fee)
Size of fee zone.	35km <sup>2</sup>	21km <sup>2</sup>
Expected congestion reduce in proposed fee zone calculated on city comparison.	14.2%	15.31%
Expected total car reduce in Copenhagen fee zone.	34,986	37,697

Implementing the fee zone will give the City of Copenhagen a net loss of 1.346bn DKK



Total Cost	1356158
Total Benefits	9337
Net cost	1346820

- The operating system constitutes the majority of the cost.
- No consideration of the increase in public transport revenue and bike sales

*Note: In thousands DKK. The cost-benefit analysis is based on an average of the two expected congestion reduces*



Implementing a toll fee proportional to the value of the vehicle would have a positive effect on the socio-economic benefits and cost.

- The proposed fee zone would lead to fewer accidents involving vehicles and less noise pollution
- A flat fee would have a greater impact on low-income inhabitants
- A fee proportional to the value of the vehicle would level out socio-economic differences

Fewer accidents involving vehicles		1,090,235 DKK
Less noise pollution		726,823 DKK

**Note:** In thousands DKK

# Appendices



## Full Table of Cost-Benefit

Cost	1.000 kr.	
System		1350000
Utility loss		908,52953
Expenses for car owners		5248,9705
Total costs		1356158
Benefit	1.000 kr.	
Less congestion		1817,0591
Fewer accidents involving vehicles		1090,2354
Less noise pollution		726,82362
Less air pollution		454,26476
Tax revenue		5248,9705
Total benefits		9337,3534
Result		-1346820