

# Road Pricing for Luxembourg

*Should the City of Luxembourg introduce road user  
charges?*

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**Abstract**

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# Contents

<b>1</b>	<b>Reasons for choice</b>	<b>4</b>
<b>2</b>	<b>Introduction</b>	<b>4</b>
<b>3</b>	<b>Road Pricing - Literature Review</b>	<b>4</b>
3.1	A brief History of Road Pricing . . . . .	4
3.2	Benefits of Road Pricing . . . . .	4
3.3	The Current State of Road Pricing . . . . .	5
3.3.1	Singapore . . . . .	5
3.3.2	London . . . . .	5
3.3.3	Stockholm . . . . .	5
3.3.4	Luxembourg . . . . .	5
3.4	Hypothesis . . . . .	5
<b>4</b>	<b>Data</b>	<b>6</b>
<b>5</b>	<b>Implementation</b>	<b>6</b>
<b>6</b>	<b>Predictions</b>	<b>6</b>
6.1	Immediate Impact . . . . .	6
6.1.1	Resulting Impact on Traffic Jams & Time spent travelling . . . . .	6
6.1.2	Resulting Impact on Accidents . . . . .	6
6.1.3	Resulting Impact on the Environment . . . . .	6
6.1.4	Government Revenue & Impact on Public Transport . . . . .	7
6.2	Social Consequences . . . . .	7
6.3	Political Viability (Public Opinion) . . . . .	7
<b>7</b>	<b>Discussion of Approach</b>	<b>7</b>
7.1	A fairer road pricing . . . . .	7

<b>8 Conclusion</b>	<b>7</b>
<b>9 RPPF</b>	<b>7</b>

# 1 Reasons for choice

Road pricing is a personal interest of mine. Since I am an avid cyclist, I dislike overly congested streets. They pollute the air and waste many people's time. Sadly, Luxembourg has a very car-focused culture. We own almost 1 vehicle per capita [1] [2] and 0.676 passenger cars per person - the highest number in Europe. [3]

My aim is to explore ways to reduce automobile traffic in Luxembourg, and the most reasonable option to pursue is road pricing.

## 2 Introduction

Road Pricing and congestion charges are becoming ever more popular. Big cities such as Singapore, London and Stockholm already have well established road pricing systems. Smaller cities are now also falling into their footsteps. [citation needed]

Considering this, it is time to consider the viability of introducing a road usage charge in the city of Luxembourg, which is what I will be attempting to scratch the surface of in this essay.

## 3 Road Pricing - Literature Review

### 3.1 A brief History of Road Pricing

- First mentioned by Prof. Arthur Pigou in 1920 [4]
- First road pricing scheme in Singapore [5]
- Strong political opposition (Hong Kong 1983-5 [6], New York 2007)

### 3.2 Benefits of Road Pricing

- Lessens Traffic jams
- Reduces number of Accidents

- Better for the environment (both because of decreased emissions and the use of less raw materials)
- Increases Government income (for reinvestment into public transport)
- Improves liveability of a city [reference needed]

### **3.3 The Current State of Road Pricing**

#### **3.3.1 Singapore**

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#### **3.3.2 London**

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#### **3.3.3 Stockholm**

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#### **3.3.4 Luxembourg**

Luxembourg City currently has no form of road pricing. However, there is a nation-wide annual tax on owning a vehicle [reference needed]. There is also a national road toll for trucks weighing more than 12 tons. The toll amount depends on the truck's size and its vehicle emissions class. [7]

### **3.4 Hypothesis**

Based on the available theoretical literature and case studies of applications in other cities, I hypothesize the following:

Introducing a road user charge will have an overall positive outcome due to it decreasing automobile use, thus decreasing negative factors such as pollution and time waste through traffic jams. [8] However, negative externalities may accompany an implementation of road

pricing, such as an increase in social inequality due to driving a car becoming a status symbol (although it could be argued that it already is) [citation needed]

I will try to find out if this hypothesis is applicable to an implementation of road pricing in Luxembourg.

## 4 Data

- 549379 vehicles in luxembourg as of february 2019 [1]

## 5 Implementation

- Will delivery services be exempt from the tax?
- What methods to use to enable and enforce charges?

## 6 Predictions

### 6.1 Immediate Impact

- impact of car usage
  - probe elasticity of automobile usage in Luxembourg

#### 6.1.1 Resulting Impact on Traffic Jams & Time spent travelling

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#### 6.1.2 Resulting Impact on Accidents

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#### 6.1.3 Resulting Impact on the Environment

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#### **6.1.4 Government Revenue & Impact on Public Transport**

Road usage fees contribute to government budget and thus can be used to improve public transport.

### **6.2 Social Consequences**

- Impact on individual social classes
  - Will a congestion charge increase social inequality?
- Impact on the “frontaliers”

### **6.3 Political Viability (Public Opinion)**

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## **7 Discussion of Approach**

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### **7.1 A fairer road pricing**

- Instead of flat-fee road pricing, an idea would be to introduce road pricing based on income. This way, the social inequality of road pricing will be eliminated and public transport no longer seen as “transport for the poor”.

## **8 Conclusion**

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## **9 RPPF**

- Idea proposal meeting:

- Research meeting:
- Final draft meeting:



## References

- [1] Le Gouvernement du Grand-Duché du Luxembourg. Types de véhicules par localité.
- [2] Eurostat. Passenger cars, by type of motor energy and size of engine.
- [3] Eurostat. Number of passenger cars per 1000 inhabitants, 2018.
- [4] AC Pigou. The economics of welfare (london, 1920). *his italics*, page 12, 1920.
- [5] Singapore Land Transport Authority. A world class land transport system. In *White paper presented to Parliament*, volume 2, 1996.
- [6] Timothy D Hau. Electronic road pricing: developments in hong kong 1983-1989. *Journal of Transport Economics and Policy*, 24(2):203–214, 1990.
- [7] Eurotoll. Eurotoll - tariffs in euros.
- [8] Reuben J Smeed. Traffic studies and urban congestion. *Journal of Transport Economics and Policy*, pages 33–70, 1968.