Sustainability of innovative economic models with a focus on mobility – EXECUTIVE SUMMARY

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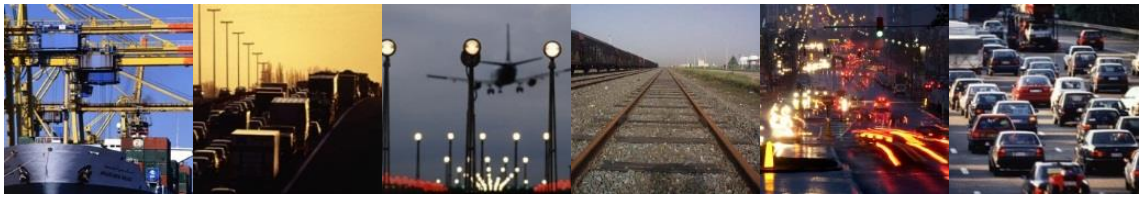

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This study is the result of work performed by the consultancy TML acting on instruction from the FRDO-CFDD. The study does not therefore represent the position of its members.

1 Executive summary

1.1 Context of the study

The initial FRDO-CFDD research question: Which innovative economic models should we support, and what is the best way for us to do that?

The FRDO-CFDD wishes to improve its knowledge in the discussions concerning innovative economic models (IEM). The research questions which the FRDO-CFDD set for this assignment were thus:
Which innovative economic model should the government support to achieve a sustainable society as efficiently as possible?
How should the government support this innovative economic model?

In order to produce relevant results with limited resources, the FRDO-CFDD also requested that analysis should concentrate on the mobility sector. However, before focusing on the mobility sector we zoomed out to look at the phenomenon of the IEM in a broader perspective.

The research question reformulated: which "no regret" measures should authorities take?

On the basis of a broader look at society and the development of economic models it seems to us that the initial research question is hard to answer. For example, an important basic principle of the circular economy, one of the IEMs, is to use raw materials as efficiently as possible. But working efficiently is also a basic principle of organisations in the "classic linear" economy. So the dividing line between the "circular" economy and the "classic linear" economy is not always that clear; that is also the case for other IEMs.

If the aim is to choose a single economic model to promote, the unclear dividing line between economic models makes this difficult. And it is not risk-free to choose a model that looks promising today, but is still fairly marginal. It could well happen that this model turns out to look far less interesting at a later stage of development.

We therefore broadened the scope of the study and considered whether any 'no regret' measures might exist. By 'no regret measures' we mean measures which will move society in the right direction with more or less 100% certainty, or in other words, measures which also move traditional models in the right direction instead of promoting one or more of the current marginal models. To find out how to influence society and economic models, we analysed the influencing factors. We found five factors which influence the economy.

Figure 1 clarifies this. The red box represents the economy as a whole, enclosing a number of economic models. The dotted line around these models makes it clear that there is no strict dividing line between them. The orange boxes surrounding the economy show the "buttons" or factors which influence the operation of the economy. These are the values and motivations of consumers and organisations (1), the relative prices of products and services (3), technological developments (4), the availability of resources (5), and the regulatory framework (2).

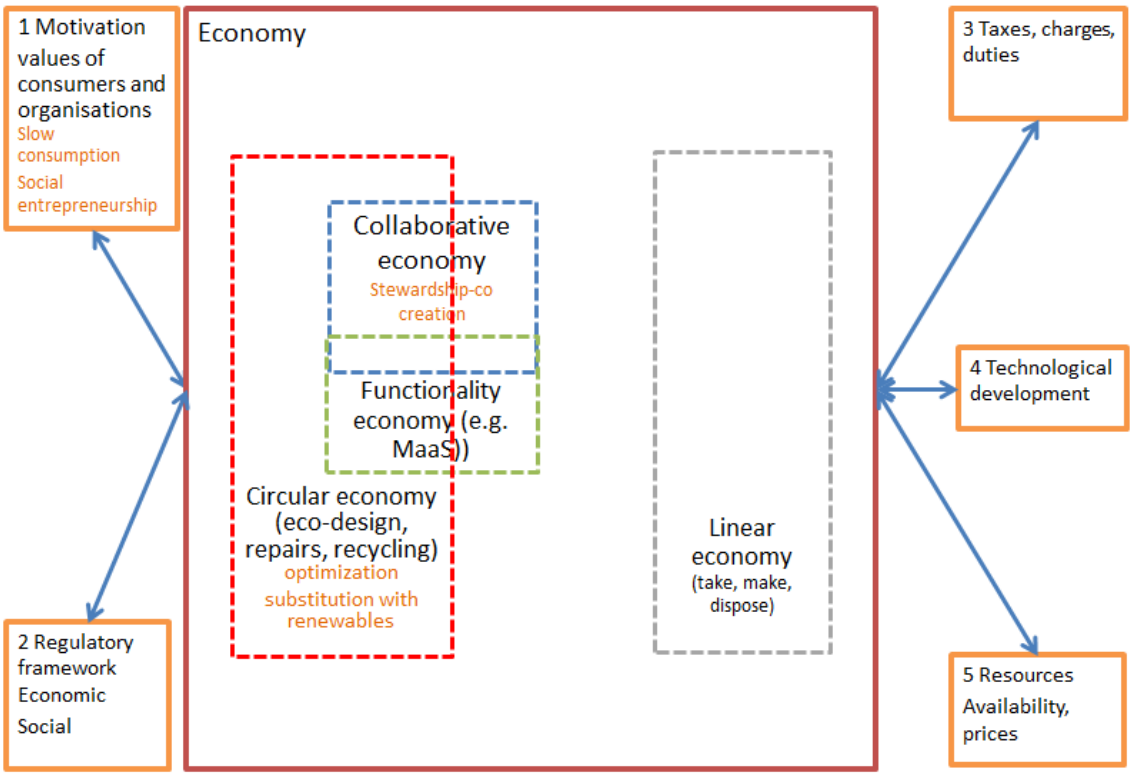

Figure 1 - summary of economic models and factors influencing the economy

Literature study, case studies and interviews help to find answers

After adapting the research question we zoomed back in on the mobility sector, and more specifically car and lift sharing, in the search for 'no regret' measures. Here we made use of previous studies which we at TML have conducted on this theme, consulted new literature, and conducted interviews. We also carried out three concrete case studies of the following organisations:

CozyCar: a care sharing system for individuals where private vehicles are shared between neighbours;
Rezopouce: 'organised lifts', a successful formula in rural areas in France which makes it possible to share lifts spontaneously and improve mobility;
Molenbike: a cooperative of Brussels cycle couriers specialising in transporting local and environmentally friendly products.

Each of these case studies is an example of how innovative economic models can make society more sustainable. They enabled us to draw the lessons we needed.

Assessment of IEMs on sustainability criteria

Car sharing, lift sharing and to a lesser degree the platform economy were evaluated on environment, social, and economic criteria. For environmental criteria we evaluated the impact on emissions (climate and air quality), space, and raw material usage. As social criteria we evaluated congestion and accidents, number and quality of jobs, and inclusion. As economic criteria we evaluated purchasing power and monetary value creation. Where possible we also set out the link

with the Sustainable Development Goals. The assessment framework is set out in detail in section 3.5 of the full report.

Most of the analysis is based on car and lift sharing, with a few points of attention concerning the platform economy.

1.2 Study results

Summary of impacts of different IEMs and the impacts of different form of policy		impact – evaluation criteria						
		environment		social			economic	
		Use of space and raw materials (SDG12)	emissions (SDG13)	congestion & accidents	jobs quality and quantity (SDG8)	Inclusion	purchasing power/price of mobility (SDG1)	monetary value creation (SDG8)
current	car-sharing							
	round trip station based e.g. Cambio	++	++	++	+-	+-	+	+
	peer to peer car sharing with intermediary e.g. CarAmigo	++	+	++	+-	+-	+	+
	peer to peer car sharing between neighbours e.g. Cozycar	++	++	++	+-	+	++	+-
	free floating car sharing e.g. DriveNow	+	?	?	+-	+-	+	+
	lift-sharing							
	short distance lift-sharing e.g. Taxistop (commuting)	+-	++	++	+-	+	+	+
	long distance lift sharing e.g. BlaBlaCar	+-	+	+	+-	+-	++	+
levers	more sustainable value system, more about environment, less about status	++	++	++	+-	++	+	-
	taxation of private cars	++	++	++	?	-	-	?
	taxation of private cars with reduction on taxes on work – social correction	++	++	++	+	+	+-	+
	subsidies for car sharing/ lift sharing	+	+	+	?	?	?	?
	regulation to reduce attractiveness of private cars	++	++	++	?	?	+-	+
	regulation to increase attractiveness of lift sharing or car sharing	+	+	+	?	?	+-	+
	technological developments which make IEMs possible	+	?	?	?	?	+	+

Table 1: summary of impacts of different IEMs and the impacts of different form of policy

The upper half of the table shows schematically the impacts for different models of car and lift sharing ("current" section).

The impacts are shown in the right-hand columns. Each main impact category is split into two or three subcategories to show the impact with more nuance. Some of them coincide (in part) with certain of the Sustainable Development Goals (SDG) as shown by the column titles. These categories and subcategories are discussed in section 3.5.1 of the full report. Each evaluation criterion may develop very positively (++), positively (+), negatively (-), very negatively (--); or not change significantly (+-). A question mark (?) means that the precise impact is unclear. A positive development in purchasing power/price of mobility means that mobility has become cheaper.

The lower rows show the impacts of incidental factors which have a positive influence on the development of car and lift sharing. We label these as "levers" in the table. These match the "orange" boxes in Figure 1 and are clarified in section 3.3 of the full report**.** These are to a large extent factors which are in the hands of policymakers.

This schematic presentation in a table is a delicate exercise as it is a considerable simplification of the real situation. In addition there are the impacts of quite a number of external factors. As a result, under certain specific circumstances some impacts could end up quite differently from those shown in the table. The table shows the most probable impacts on the basis of the information collated. Certainly, for the lower half of the table it is important to read the table alongside the description below on the impacts of lift sharing and car sharing (see 1.2.1.) in order to the put the table coding in perspective.

1.2.1 *Impacts of lift sharing and car sharing*

Environmental impact varies with economic model

An analysis of the different models of car and lift sharing teaches us that the environmental impact varies from no impact to a highly positive impact. You can find more details on environmental impact in section 4.4.1 of the full report.

Round trip station-based car sharing systems **have a highly positive environmental impact.**

"Round trip station-based car sharing systems" are systems such as Cambio and peer-to-peer systems where the shared car is always taken from and returned to the same place. Peer-to-peer systems are systems where people from a given neighbourhood share cars with each other, via an intermediary such as CarAmigo, or without an intermediary like Cozycar. These systems reduce the kilometres travelled, emissions and the number of vehicles required. That also delivers a saving in raw materials used and public space occupied. The reason for these impacts is the changed behaviour which goes hand in hand with the choice of this type of car sharing system. People who opt for station-based car sharing systems reduce the number of kilometres that they drive.

Free-floating systems **have a limited impact or no effect** on the number of kilometres covered. They do however reduce the impact on public space.

User-friendly car sharing systems such as the "free-floating systems", for example DriveNow, are systems where the shared car does not have a fixed location and can be parked up at will, generally within a specified area. Currently the impacts of these systems are variable. Often they do not reduce the number of kilometres driven. To get an idea of the impacts of a wider rollout, we look at simulations on the impact of autonomous shared vehicles since this is an extremely attractive form of car sharing. These simulations show that the number of vehicle kilometres, and hence also energy consumption, *could* increase from current figures without a suitable policy. The number of cars required would fall in these scenarios, but as the vehicles are used more intensively, the need for raw materials is not reduced. The number of parking spaces required would however be lower. The table shows a question mark for emissions and congestion in the summary to represent the uncertain impact on the vehicle-kilometres covered.

According to the (limited) information available, **short-distance lift sharing primarily replaces single-occupant car use**. A typical example of short distance lift sharing is car-pooling for home-work travel. It would be good to be able to confirm this impact by other studies in other contexts; certainly also for Belgium. The volume of cars would not fall through lift sharing since people who lift share over short distances generally also own a car.

Long distance lift sharing has a limited positive impact. BlaBlaCar is an example of long distance lift sharing. In many cases it replaces train journeys and only in a limited number of cases does it replace car travel. And 25% of the drivers who share long-distance lifts would also use the train if long distance lift sharing did not exist. The environmental impact of long distance lift sharing is thus only slightly positive. Emissions savings are estimated at 12% per journey.

Social impact: inclusion remains a point for attention

The broader social impacts are still limited to reduced congestion, accidents, potential better relationships between users and indirectly possibly also a little more employment. You can find more details on social impact in section 4.4.2 of the full report.

Fewer kilometres covered with station-based car sharing systems also generally means reduced congestion and accidents. This will be less the case, or even not at all, for the free-floating systems, since the kilometres covered using these systems could also increase (see environmental impact above).

Shared cars and lift sharing offer access to car use for people who today have no car available to them. Particularly peer-to-peer car and lift sharing systems have potential to strengthen social relationships. However, it remains a challenge to find innovative economic models which also provide access to social less well integrated groups. Inclusion is thus a point that needs attention.

The car and lift sharing systems discussed have a limited impact on employment. Studies do show that these systems should indirectly provide extra jobs. Consumption switches from one form of mobility to another, from the 'dearer' owned car to a 'cheaper' shared car or lift sharing. As a result, car users release some of their budget for alternative consumption. This new consumption provides more employment than the previous 'own car' consumption. The impact is positive but limited.

Economically cheaper, sustainable mobility and extra growth.

If we analyse the economic impacts then we can determine that mobility could become cheaper and extra growth or value creation take place thanks to car and lift sharing. You can find more details on economic impact in section 4.4.3 of the full report.

Car and lift sharing certainly have a positive impact for users with limited car use and/or people who change their mobility-related behaviour. Peer-to-peer systems without an intermediary generally offer users the best financial benefits since no intermediary has to be paid. However, in urban areas systems with intermediaries could be as advantageous or even more so.

There is space for value creation via car sharing platforms and providers. It also emerges that the changes in consumption patterns lead to extra economic growth (and jobs).

Social impacts; special attention for the platform economy

The car and lift sharing systems which we have considered within the mobility sector have potential to improve the sustainability of our society, provided that a good policy framework has also been implemented (see 1.2.2). Alongside this there are also innovative economic models where extra vigilance is required; namely platforms for service providers. These platforms certainly offer substantial opportunities for innovation and employment. Activities which would once have been impossible can now be performed, providing innovation and employment. However there are also risks connected with platforms. Platforms tend to encourage the formation of monopolies and among other things can lead to a "race to the bottom" on working conditions. It is important that the government does not facilitate a deterioration of working conditions through the creation of an employment status without fiscal obligations and/or social protection. We observed both the opportunities and the risks in the analysis of the Molenbike case study, a cooperative of cycle couriers for whom a platform is vital.

You can find more details on the platform economy in section 5 of the full report.

1.2.2 *Suggestions for authorities on how to deal with innovative economic models*

Moving out of the margins by adapting the environmental framework

Today, car and lift sharing are still marginal phenomena. If we as a society wish to benefit more from the positive effects of these models, they must become more mainstream. This will need a change in behaviour and the operating environment will have to change with it. We can work on the influence factors for this (see also Figure 1).

Promoting sustainable values

Making societal values more sustainable is a long-term project. This can be encouraged through consciousness-raising campaigns, by making exemplary behaviour by high-profile individuals into a social reference, but also by wider introduction of processes of reflection on sustainability in various forms of education and society.

A more sustainable value system means the relationship between oneself and the environment, other people and nature becoming more respectful. A financial benefit would then cease to be the main reason for using innovative economic models.

People will own fewer cars, drive fewer kilometres, attach more importance to inclusion, spend less on mobility. The general level of consumption could then also fall.

Making private car use unattractive

Taxation on private car use makes car and lift sharing attractive via a price incentive. Unlike when improving the sustainability of social values, a price incentive provides an external motivation for changed behaviour, while a change in the value system provides an internal incentive. The environmental impacts are thus similar, but other impacts differ.

An increase in taxation without changing the internal value model can lead to frustration and incomprehension. The tax will very probably also be experienced, at least temporarily, as impoverishment or a reduction in purchasing power. People who drive a lot will see the price of their mobility rise. For the less well-off this could mean that they can no longer afford a car. If they have no alternative forms of mobility this can lead to transport poverty and isolation. With suitable accompanying policy this measure will however also have a positive social outcome.

The way in which the government uses the taxes levied is important here. Studies show that, if the levied tax is used to provide a reduction in workloads, this policy has an overall positive effect. Social corrections remain important here.

A full review of taxation will be important to make private car use unattractive in a coherent manner. Abolishing the tax benefits of company cars is important in this respect. A company car here is an employer-owned vehicle which is purely a bonus to the employee's earnings. The employee does not really need the car to do his or her job. The introduction of a mobility budget could be a first step in the right direction. A benefit of the abolition of the tax benefits of company cars is that generally it spares the socially weaker, which is not (or to a lesser extent) the case with an increase in duties or the introduction of road charging.

Subsidies for car and lift sharing are not a magic wand

Subsidies for car sharing will make car sharing more attractive, but do not make car use more unattractive. There is a real chance that, if the subsidy has the desired effect, the total number of passenger kilometres will increase at community level. For emissions and congestion a limited positive effect is possible as long as a shift occurs from private car use to car and lift sharing and not from public transport or cycling to car and lift sharing.

To estimate the further impacts of subsidy properly we must again pose the question as to how the subsidy is to be financed.

Reducing private car use by regulation: good for car and lift sharing

A ban on the use of unshared cars on certain roads, in areas of a town or at certain periods will also encourage the use of IEMs. The introduction of parking restrictions could also fall under this heading. Such measures could also make it more advantageous to offer other forms of transport, such as (more) public transport.

The economic activity in connection with car and lift sharing could then increase.

The impacts are therefore largely similar to the taxation of the private car; with the difference that taxes generate income for the government. This income can be used elsewhere; such as for a reduction in labour-related taxation.

Regulations which make car and lift sharing more attractive

The impacts for this lever are similar in some respects to those of a subsidy. It must however always be borne in mind that inclusion still remains a challenge for socially weaker groups.

Applying technological development positively

The technological development which makes IEMs more attractive will to some extent bring impacts which are similar to those of a subsidy. Car and lift sharing become more attractive without traditional driving becoming less attractive. There is a chance that total mobility would increase, and therefore emissions and congestion with it, if no other policy were implemented. Technological developments around car and lift sharing could also result in a reduction in accidents; this would be good for road safety, but this is not an aspect which we consider here. Technology can also reduce the environmental impact per passenger kilometre; but this too was not the focus of the study. For purchasing power and value creation we assume that the trend will be positive.

Platform participation is win-win

Platforms offer many social opportunities. But there are also risks that platforms will generate negative social impacts since the platform owner is primarily occupied with its own interests. Therefore the integration of different stakeholders in such platforms - such as owners, users, service providers and societal stakeholders - is a beneficial path to follow to ensure that broad societal interests are not compromised by the activities of platforms. A first and fundamental step could be to involve the various users of the platforms, at least to prevent working conditions from being the subject of a race to the bottom. The cycle courier service Molenbike is an example of a platform where owners and service providers–couriers exploit the platform together.

A level playing field for IEMs to achieve sustainability gains

Innovative economic models have much to offer our society in terms of innovation, value and job creation. To use the potential for sustainability of IEMs optimally, it is important to incorporate certain points for attention. It is important not to let the tendency of IEMs to form monopolies affect working conditions negatively. That risk is real and visible in some sectors such as that of the cycle couriers or on the platforms which offer casual work. These risks were less visible in the mobility sectors which we investigated. However, in the ride hailing sector where companies like Uber are active, this challenge certainly exists. In order to also guarantee the sustainability of IEMs in terms of working conditions and not to allow unfair competition to develop, it is important to impose a level playing field on the whole economy. Authorities must avoid creating loopholes in legislation which allow an employment status with no social protection to be created.

"No regrets" or "best choice" policy: Making values sustainable, revision of tax regime, new technology on a level playing field.

Innovative economic models *could* make a contribution to a durable mobility system. To ensure that this actually happens, it is important to set up a good general framework that facilitates sustainable mobility. The key characteristics of sustainable mobility for personal transport on land are:

- Reducing the number of trips
- Reducing private car use.

A general framework does not select one or more solutions which appear best today for promotion, but ensures that every solution which results in fewer journeys and less private car use is and will continue to be given a fair chance.

The promotion of a more sustainable value system and a fundamental review of the tax regime are the building blocks for this framework. Appropriate spatial planning is also an important element here. This however falls outside the scope of this study.

A fundamentally revised tax regime means a higher price for using a private car, with as a starting point the removal of the subsidy for company cars. The required social corrections are also coupled to the higher price for the use of the private car. The introduction of a mobility budget could be a first step in the right direction. The development of new technologies which facilitate innovative economic models and networked mobility with high-performance public transport ensure that our mobility system remains attractive and comfortable within the revised tax regime. It may evolve from a system based on car ownership into a system based on using mobility services. Here it is important to be aware that technology alone, even if it reduces the attraction of car ownership, is no guarantee of durable mobility. The correct framework - as described above - remains a fundamental condition. As well as facilitating IEMs, technology can also cause a reduction in environmental impact for each kilometre driven and safer traffic, but always on condition that the correct framework is employed.