

Published for the autumn 2022  
application round.

Bachelor's Degree Programme in International Business, Helsinki Pasila, full-time studies  
**Entrance examination example and information on evaluation**

The Degree Programme in International Business (IB) has a general structure and evaluation criteria for the entrance examination. This document is to provide information on the entrance exam.

The entrance exam to the IB programme consists of a written part and an interview. The below table presents an example of the structure and minimum and maximum points typically used in the autumn examinations. Note that in spring examinations the structure is slightly different.

Examination part	Minimum points	Maximum points
1. Multiple choice test based on written material available during the examination	4	10
2. Logical thinking and mathematics test	8	30
3. Writing test based on written material available during the examination	10	30
4. Interview	10	30
<b>Total</b>	<b>32</b>	<b>100</b>
<b>English</b>	<b>Pass</b>	<b>Pass</b>

The structure, contents and minimum and maximum points of the exam are subject to change. The total time for the written part of the exam is typically two hours.

### Evaluation of the written parts

The multiple choice test and the logical thinking and mathematics test are evaluated wrong/correct per each question.  
The writing test (based on written material available during the exam) are evaluated on the content and the written expression.

### The interview part of the exam

In the full-time programme the interview lasts typically 30-40 minutes. The interview is a group interview with 1-2 interviewers, who provide discussion topics and questions for the applicants. The aim of the interview is to measure realistic expectations to complete the bachelor's studies and oral English language skills required in the programme.

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**Exam number** \_\_\_\_\_

## DEGREE PROGRAMME IN INTERNATIONAL BUSINESS: ENTRANCE EXAMINATION

### INFORMATION AND INSTRUCTIONS TO THE APPLICANTS (FULL-TIME STUDIES)

#### Examination components

The entrance examination consists of four parts. An applicant must pass all of them separately to qualify any further in the admission process. The parts with their minimum and maximum points are:

Examination part	Minimum points	Maximum points
1. Multiple choice test based on written material available during the examination	4	10
2. Logical thinking and mathematics test	8	30
3. Writing test based on written material available during the examination	10	30
4. Interview and group task	10	30
<b>Total</b>	<b>32</b>	<b>100</b>

#### Examination timetable

The total time for the written part (including multiple choice test, logical thinking and mathematics test, and writing test) is two hours, from 10 am to 12 noon. The interviews and group tasks will start at 1 pm (13.00).

#### Instructions for the written part

In the written part of the examination, the answers must be given on the two answer sheets provided. The answers to the multiple choice test and to the logical thinking and mathematics test must be marked on the answer sheet with boxes to be ticked. The answer to the writing test must be on the lined answer sheet.

Please note:

- Do not separate any of the stapled sheets from each other.
- Write your name, date of birth and exam number on each sheet.
- You are not allowed to use a calculator, mobile phone or dictionary of any kind in the exam.
- All exam papers must be returned.

#### After the written part

The interviews and group tasks will start at 1 pm (13.00). Follow all the instructions carefully. Check the timetable and the place and **be on time for your turn**.

**We wish you success in the entrance examination!**

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### 1. Multiple Choice Test on Written Material

The following task is based on the material available during the examination, the Executive Summary of *Environmental potential of the collaborative economy*. The material deals with the European Union.

In each question (1–5), one alternative (a–c) is true in view of the material. Find the true alternative in each case and mark it on the separate answer sheet (the last page of this exam package). Please note that only one alternative should be chosen for each question (1–5).

Each correct answer is worth two points. Points are not deducted for incorrect answers or for not answering. Providing more than one alternative per question is graded as an incorrect answer.

1. According to page 1 of the Executive Summary,

- a) the collaborative economy relates to transactions where ownership is passed typically from one private person to another.
- b) literature has usually depicted the collaborative economy as a phenomenon with beneficial environmental and social impacts.
- c) the collaborative economy is stable both as a concept and in scope.

2. According to page 3 of the Executive Summary, peer-to-peer accommodation

- a) has a higher environmental impact than average hotel accommodation mainly because of electricity consumption.
- b) has a carbon footprint of about 50% compared to a midscale hotel.
- c) has the same environmental impact regardless of the type of building.

3. Page 4 of the Executive Summary states that

- a) collaborative transport in the form of car-sharing and rides on demand cannot be seen as an improvement in terms of climate change over the traditional transport mix.
- b) collaborative transport is the preferred option for the future regardless of the current mode of transport.
- c) ride-sharing has the most negative impact on the carbon footprint out of all collaborative means of transport.

4. On page 6 of the Executive Summary, it is concluded that

- a) collaborative business models are mostly more inefficient versions of their traditional counterparts.
- b) EU policy actions should be targeted at the increased hybridization of collaborative models and traditional economy.
- c) fair and equal competition between collaborative and traditional business models is a key target for policy action.

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5. Page 7 of the Executive Summary puts forward the view that

- a) policies should be developed so that peer-to-peer rented properties would be situated in the same buildings where the people renting out accommodation live themselves.
- b) regulating the number of days for which a property can be rented out via collaborative platforms would encourage investors to buy property for the sole purpose or renting it out.
- c) implementing design requirements and high quality standards may create an impediment to goods sharing and renting due to the higher production costs involved.

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## 2. Logical Thinking Test

**Please mark your answers to this logical thinking and mathematics part on the separate answer sheet provided (the last page of this exam package). The total score is 30 points. Points are not deducted for incorrect answers or for not answering. Providing more than one alternative per question is graded as an incorrect answer.**

- The normal price of a product is 200 €. A discount of 40 € is given. What is the discount percent?
  - 25 %
  - 16.7 %
  - 20 %
  - other
- In a company, 60 % of the employees are female. The number of male employees in the company is 32. How many female workers are there?
  - 51
  - 39
  - 48
  - other
- A price is discounted by 20 % and the discounted price is 200 €. How many euros was the discount?
  - 66.67 €
  - 50 €
  - 40 €
  - other
- Indicate the **first** value in the sequence: \_\_, 24, 12, 36, 18, 54
  - 8
  - 9
  - 6
  - other
- The average monthly salary among a firm's twelve employees is 3500 €. There are two part-time workers in the firm who both earn 2500 €/month. If the salaries of these two part-time workers are excluded from the average, what will the new average salary be?
  - 3700 €
  - 4300 €
  - 4000 €
  - other

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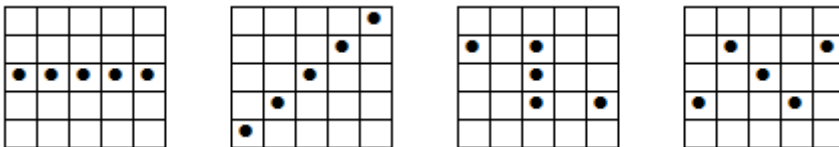
6. A share lost 80 % of its value. How many percent should it increase to reach the original value?

- a) 500 %
- b) 80 %
- c) 120 %
- d) other

7. A manager has to choose three products out of five possibilities to take into production. How many different ways are there to choose three products out of five?

- a) 15
- b) 10
- c) 60
- d) other

8.



What is the next figure in the series?

- a)
- b)
- c)
- d)

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9. B is 20 percent smaller than C and A is 25 percent bigger than B. Which of the following statements is correct?
- a) A is 5 % bigger than C
  - b) A and C are the same value
  - c) C is 5 % smaller than A
  - d) other
10. The probability that a passenger is chosen for customs inspection is 10 %. Emma and Michael go through customs. What is the probability that neither of them is chosen for inspection? The probability of one passenger being chosen is independent of that of other passengers.
- a) 81 %
  - b) 90 %
  - c) 99 %
  - d) other





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**Answer sheet for parts 1 and 2**

**1. Multiple choice test on written material**

Indicate the true alternative in each question (1–5) by ticking the appropriate box according to the example (0). Please remember that only one true alternative can be marked per each question (1–5). Each correct answer is worth two points; the minimum score is four points and the maximum ten points.

	<b>a</b>	<b>b</b>	<b>c</b>
<b>0.</b>		<b>X</b>	
<b>1.</b>			
<b>2.</b>			
<b>3.</b>			
<b>4.</b>			
<b>5.</b>			

**2. Logical thinking and mathematics test**

Indicate the true alternative in each question by ticking the appropriate box. Please remember that only one true alternative can be marked per each question. The minimum score is eight points and the maximum 30 points.

	<b>a</b>	<b>b</b>	<b>c</b>	<b>d</b>
<b>1.</b>				
<b>2.</b>				
<b>3.</b>				
<b>4.</b>				
<b>5.</b>				
<b>6.</b>				
<b>7.</b>				
<b>8.</b>				
<b>9.</b>				
<b>10.</b>				

**RETURN ALL PAPERS!**

**PLEASE WRITE YOUR NAME AND OTHER DETAILS ON EACH EXAM PACKAGE PAGE.**



# Environmental potential of the collaborative economy

Final Report and Annexes

**EUROPE DIRECT is a service to help you find answers  
to your questions about the European Union**

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## Executive Summary

This study provides an analysis of the environmental potential of the collaborative economy in the EU. This study focused on answering two main questions:

1. What is the environmental impact of the collaborative economy and how is the environmental impact expected to develop in the future (the environmental potential)?
2. Under which conditions will the collaborative economy contribute to a sustainable development of the EU economy?

This study goes beyond desk research and case study data provided by platforms, which have been the main source of information on this topic to date. This study used objectively derived assumptions and data available on collaborative economy transactions to quantify environmental and socio-economic impacts through Life-Cycle Assessments (LCAs) and a large-scale macro-economic model (E3ME).

Current literature has generally shown positive environmental and social impacts of the collaborative economy, as the analyses often focused on case studies provided by the platforms themselves. This study explains that the way in which the collaborative economy creates environmental (and socio-economic) impacts is complex and that there are different both positive and negative drivers which effect the sustainable development of the EU economy.

This study focused on three markets in which collaborative platforms are particularly active: transport, tourist accommodation and consumer durables. From the (limited) data obtained, the environmental impact of the collaborative economy was evaluated at business model and sector level using the LCAs, which has been a unique contribution of this study. Moreover, to assess the impacts in the medium-long term, scenarios on how those sectors *might develop* towards 2030 were developed. This means that the scenarios reflect *possible futures* for the collaborative economy: they should not be interpreted as a prediction for how the collaborative economy will develop.

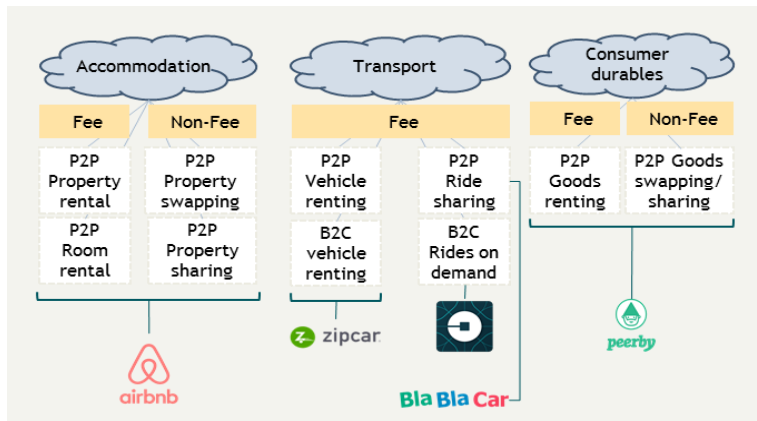
### What is the collaborative economy?

There exist many definitions and interpretations of the collaborative economy. It is an evolving concept, referring also to the 'sharing economy' or 'gig economy'. The scope of this definition also varies greatly across different studies. Building on the recent contributions in literature, for the purpose of this study, collaborative business models were defined as:

*Business models where activities are facilitated by collaborative platforms that create an open marketplace for the temporary usage of goods or services often provided by private individuals. Transactions do not involve a change of ownership and can be carried out on a profit or non-for profit basis. The collaborative economy involves three categories of actors: 1. Providers – who share assets, resources, time or skills (peers or professional services providers); 2. Users; and 3. Intermediaries that connect via an online platform providers and users.*

**Figure 1 Typology of business models and representative platforms that were selected as case studies**

This definition was operationalised further by defining inclusion criteria to judge whether activities of digital platforms are considered inside or outside the scope of the collaborative economy in this study.



These inclusion criteria led to the identification of ten different business models in the three sectors. In order to get a more in-depth understanding of these business models, five selected representative platforms were studied in more detail. These case studies served as inputs for the LCA and the scenarios.

Legend: P2P – peer-to-peer, B2C – business-to-consumer

## What is the current size of the collaborative economy?

Generally, the size of the collaborative economy in Europe is still quite limited, despite the rapid growth of some of the most known platforms. The case studies estimated the current market shares of the five selected platforms and their number of users in EU.

The tourist accommodation sector is the only sector where collaborative economy transactions are estimated to have a considerable market share. Airbnb alone is estimated to be responsible for around 4.7% of all the stays in the sector, with 27.8 million guests in 2016. In contrast, in the transport sector, sharing cars (or vehicle renting) account for only 0.02% of the entire car fleet in Europe and the 9 million successful ridesharing rides correspond to approximately 0.1% of the total person-kilometres travelled by car. Rides on demand is the only business model in the transport sector where the collaborative economy has a significant impact as there are around 120,000 UBER drivers registered in the EU. The market for sharing and renting of consumer durables is also small, as the largest platform in the market – Peerby - has only 250,000 users worldwide, of whom only 60% are active on the platform. This means that a maximum of around 1.35% of the EU population actively shares or rents goods via Peerby.

## What is the socio-economic impact of the collaborative economy today?

For the consumer, the collaborative economy has the potential of delivering concrete benefits. The use of smartphones and digital platforms leads to a reduction in transaction costs to match supply and demand compared to 'traditional economy' transactions. The digital interface reduces the need for 'offline infrastructure', such as retail outlets or sales agents. Therefore, collaborative economy platforms have the potential to offer services at a lower price, leading to potential cost savings for consumers.

The net social and economic impacts of the collaborative economy at sector and macrolevel are less clear. On one hand, positive impacts are generated in terms of job creation, cost savings or revenue generation for peers, whereas on the other hand, negative impacts can

be incurred on the traditional economy (reduced income and job losses). These impacts are hard to quantify. For example, Airbnb created around 700 platform jobs in the EU, but host employment and its impact on traditional economy is difficult to estimate. In the transport sector, the ride-sharing and car-sharing activities hardly produce any employment, apart from some jobs at headquarters of the platforms. However, there might be some direct social benefits, such as visiting family and friends (reported by 60% of Blablacar users). The latter platform is based on cost sharing rather than profit making activities, hence generating less extra income and consumption. Sharing and renting of consumer durables does not have substantial employment impacts either, it provides a few jobs at platform headquarters. As an example, Peerby, the largest platform operating in the market employs twenty people. Currently, the scale of good sharing and renting is too small to have an impact on employment in the production of consumer durables.

The rebound effects, i.e. impacts created on the wider economy from spending the money saved and earned due to the collaborative economy transaction, can compensate for the economic and employment losses at macro-level. However, this additional spending might happen in sectors not primarily affected by collaborative economy. Moreover, a certain hybridisation of collaborative and traditional economies is already occurring. For example, many smaller business suppliers sell their services through so-called collaborative platforms, and private suppliers are offering their services on platforms such as booking.com. Such ambiguity creates difficulties in assessing and quantifying the actual impacts the collaborative economy creates.

## **What are the environmental impacts of the collaborative economy today?**

The environmental impacts of the traditional and collaborative economy today are assessed through a Life Cycle Assessment (LCA) to show the environmental footprint per functional unit of both the collaborative and traditional economies. This is done per business model as well as for the entire sector to show the contribution of the collaborative business models to the overall environmental impact of the sector. Data on the behaviour of consumers in the collaborative economy is scarce, which results in an analysis partly based on assumptions of the most likely behaviour.

### **Accommodation**

The environmental impact of collaborative accommodation is assessed at the level of a person staying for one night in a peer-to-peer rented property (a private residence) compared to a one night at a hotel (traditional economy model). **The results show that the current environmental impact of staying one night at a collaborative economy accommodation is comparable to staying at a budget hotel.** Staying for two nights at a peer-to-peer accommodation leads to a similar carbon footprint as staying for one night at a midscale hotel. The main factor behind the lower environmental impact of collaborative accommodation is the electricity use, which is higher for midscale and luxury hotels than for example a private residence or a budget hotel. Another important factor is the type of the building (from which materials, energy efficiency, lifetime), as this alters the environmental impacts (such as climate change or resource depletion) differently.

With regard to the sectoral impacts, the market share of collaborative accommodation platforms is small (estimated around 5%), and its environmental impact is generally even smaller (due to the positive environmental impact on several environmental impact categories). The luxury hotels account for a large share in the environmental impact of the tourist accommodation (about 40%), while the number of person-nights spent at such

hotels is relatively small (18%). Budget hotels have an approximate market share of 13% while their environmental impact accounts for only around 7% for most of the impact categories.

### Transport

The environmental impact of car sharing (vehicle-renting), ride-sharing and rides on demand is analysed by calculating the environmental impact of a kilometre travelled with those platforms. The environmental impact of a kilometre travelled using a collaborative platform is compared with the average environmental footprint of the current mix of transport modes in the EU (the share that people travel by car, motor bike, bicycle, bus, train, airplane, ship and walking). As the share of collaborative economy transport is very small, so are its environmental impacts. The contribution of the currently active platforms in overall environmental impacts created by the transport sector is minimal (<1%). However, since the share of traditional car transport is very large (>60%), there is also a significant improvement potential for switching from personal to collaborative car transport and reducing the environmental impact.

**The current environmental impact of travelling with collaborative economy transport is generally smaller than or equal to travelling with the traditional transport mix.** Ride-sharing generally has the lowest environmental impact. This can be attributed to the increasing car occupancy rate and the subsequent reduction of overall per person-km impacts related to car use. Ride-sharing is the only type of collaborative economy transport for which a reduction of the carbon footprint is achieved (compared to the traditional transport mix). Car-sharing and rides on demand do not perform better than the traditional transport mix for climate change, because the traditional mix includes transport types with a low to very low carbon footprint, such as trains, trams, bicycles and walking. **When compared with the impact of a kilometre travelled in your personal car (the most common alternative), the collaborative business models typically have a significantly lower environmental impact.** To realise the environmental potential of collaborative transport, it is very important to create a shift from personal car use to collaborative car use, and to avoid that users of public transport, bike users or pedestrians shift towards collaborative transport (i.e. the use of a car).

### Consumer durables

Two specific products were selected as durable goods for the environmental impact assessment: the cordless power drill and a ladder. These are products widely used by households and popular on sharing platform Peerby. Moreover, in this way the impact of a product with or without a relevant energy consumption during the use phase is compared.

#### Power drill

In a collaborative economy, consumers can choose to borrow a power drill using PeerbyClassic or PeerbyGo. A key factor for assessing the environmental impact is the transport scenario that is considered in the analysis. **The results show that both collaborative economy scenarios score significantly better on all environmental impact categories.** The contribution of transport is lower for the collaborative scenario as it is assumed that goods are available in a smaller radius and more transport takes place by bike (in countries like The Netherlands) or on foot instead of by car. This outweighs the fact that more transport trips are necessary in the collaborative scenario, and accounts for the share of renting of the equipment in the traditional scenario, but not

for the share where the power drill is bought. The environmental impact of transport is thus a key determinant for the overall results.

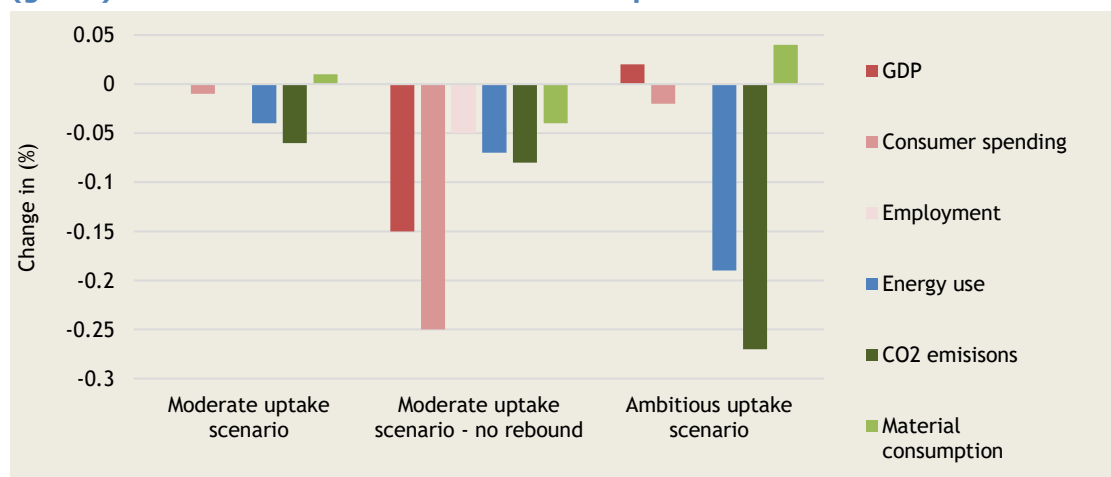
## Ladder

In a traditional economy, consumers either buy a ladder or borrow one from neighbours. Additionally, it is assumed that consumers pay for a service which requires a ladder, rather than buying a ladder and doing it themselves. When a ladder is provided for by a service it is intensively used. Therefore, the environmental impacts related to the production of the ladder per hour of use is considered negligible. Again, the transport scenario is a determining factor for the environmental impact of the collaborative economy. A ladder has no environmental impact during use. Environmental impact during the life cycle of a ladder only occurs during production and transport.

## What are the likely impacts of the collaborative economy towards 2030?

The future environmental impacts of the collaborative economy are in general likely to be small when compared to the overall economy. The scale of effects is partly due to the fact that the scenarios deal with isolated sectors of the economy and relatively low market shares of collaborative economy (a maximum of 10% market share). More importantly, the small net effects also reflect rebounds associated with the income and savings generated from collaborative activities. In the main scenarios, it was assumed that this additional income is spent by consumers on other goods and services, according to the standard consumption patterns. This additional spending had its own environmental, economic and social impacts. By using a complete modelling framework such as E3ME, the study captured direct, indirect and rebound interactions between the economy, energy system and the environment. The results clearly show a trade-off between economic activities and environmental impacts.

**Figure 2 Trade-off between economic impacts (orange) and environmental impacts (green) for the three combined scenarios compared to the baseline.**



In the combined ambitious scenario (assuming around 10% of market share for collaborative economy in the three sectors) with rebound effects, GDP is expected to increase by around €4.7 billion (or 0.02%) compared to the baseline. The net employment is expected to increase by around 16,000 jobs (which is almost no different from the



baseline). These small net impacts are a result of looking at the economy as a whole, where winners in some sectors will imply losers in other sectors, while the overall impacts will balance themselves out. This scenario also has the largest positive environmental impact as the uptake of collaborative transactions increases. However, if there were no rebound effects of consumer spending on the wider economy, the environmental impacts would be even more positive.

The theoretical scenario without rebound effects (meaning the income generated is not spent on other services and goods but saved) shows the approximate magnitude of the effects of collaborative activities on the economy and the trade-off between economic impacts and environmental benefits. The GDP impact is a reduction of around €31 billion (in particular in the traditional economy sectors as the money is taken out of the economy), and the employment impact is around 107,000 jobs lost (in particular in the traditional economy sectors). Although the % changes to the baseline are still very small, the negative effects on the economy are much more dramatic than for the moderate uptake scenario with rebound (Figure 2), which assumed the same level of collaborative economy transactions. It also shows that the total environmental benefits are larger when there is no rebound effect.

The potential to reduce energy and emissions is largest in the transport case, where car and ride sharing would lead to reduction in the number of cars and the distance travelled. The study assumptions were conservative on efficient engine and electric car assumption. If higher share of electric cars was assumed, further environmental benefits could be expected.

The market shares may be larger in the future, however, the study findings would still be applicable, albeit at greater magnitudes, as the same interactions within economy and between economy, energy and environment are expected.

### **How can the collaborative economy contribute to sustainable growth of the EU economy?**

The results of this study indicate that many collaborative business models can simply be seen as more efficient versions of their direct 'traditional' competitors, with their borders and differences likely to become blurred in the future. This is due to collaborative business models becoming more mature and traditional business models becoming more dynamic and adaptive to some of the collaborative economy practices. Therefore, the collaborative economy should not be a specific target of policy action, but rather all activities in the sector should be targeted with the aim to ensure fair and equal competition between traditional and collaborative business models. This is further supported by the apparent hybridisation of the platform and traditional economy.

Secondly, the lack of data on collaborative consumption and platform business activity, in particular at EU level, restricts a proper analysis of the environmental and socio-economic impacts. Further measures should be taken to increase data collection from platforms at Member State and EU level in line with reporting requirements for other businesses in the same sector, in particularly for the for-profit platforms.

### **Specific implications for the transport sector**

As the environmental impact of lower car production is smaller than the overall environmental impact of fuel use in the use-phase of cars, the environmental potential of

increased utilisation in cars is high. Ride-sharing and car-sharing that lead to a higher utilisation of cars therefore contribute to less environmental impacts. As collaborative transport options make travelling by car more attractive and affordable, this does sometimes come at the cost of the use of public transport or cycling options, which from an environmental point of view are better options than car driving. Therefore, the negative environmental rebound effects of increased car use should be limited by discouraging car use in general and by promoting cleaner types of car use. As collaborative transport options are often the more efficient options within car travel, such measures might stimulate the use of car-sharing and ride-sharing schemes instead of personal car travel.

### ***Specific implications for the accommodation sector***

Since the environmental impacts of peer-to-peer rented properties are lower with higher occupancy rates, policies that restrict the type of listings offered on collaborative platforms to properties where the host has main residence should be encouraged. By restricting the maximum number of days for which a property can be rented out via the collaborative economy, this would also discourage property renters who buy a property only to rent it out, and encourage only those who also reside in the property to increase the occupancy rate of their residence. The environmental impact of the collaborative accommodation is also lower if the building and residence itself have better energy efficiency and use more sustainable materials. The study also showed that rebound effects from increased travelling might have a negative environmental impact, which could be mitigated through promotion of cleaner ways of travelling.

### ***Specific implications regarding goods sharing and renting***

Sharing and renting goods make better use of the (typically long) technical life that consumer durables have. Therefore, goods sharing and renting can help the EU economy develop in a sustainable manner. Sharing and renting of goods can be facilitated by implementing design requirements that increase the durability and sharing ability of consumer durables, such as modular design and high quality standards. Most importantly, though, is that the environmental impact of the logistics behind the sharing or renting transaction itself remain low. Therefore, clean transport solutions for the logistics behind sharing and renting goods should be promoted.

In conclusion, the study highlighted the environmental potential that can be garnered from the collaborative economy business models. Such a dynamic transition could create opportunities to green the economy via innovation from platforms (for example using cleaner cars in carsharing), policy makers (by promoting sustainable and energy efficient buildings, clean transport) or by consumers (by making choices on how to consume and behave). Such conditions can facilitate a shift to a more sustainable development of the EU economy.

## Answer sheet for parts 1 and 2

### 1. Multiple choice test on written material

Indicate the true alternative in each question (1–5) by ticking the appropriate box according to the example (0). Please remember that only one true alternative can be marked per each question (1–5). Each correct answer is worth two points; the minimum score is four points and the maximum ten points.

	a	b	c
0.		X	
1.		X	
2.		X	
3.	X		
4.			X
5.	X		

### 2. Logical thinking and mathematics test

Indicate the true alternative in each question by ticking the appropriate box. Please remember that only one true alternative can be marked per each question. The minimum score is eight points and the maximum 30 points.

	a	b	c	d
1.			X	
2.			X	
3.		X		
4.	X			
5.	X			
6.				X
7.		X		
8.				X
9.		X		
10.	X			

**RETURN ALL PAPERS!**

**PLEASE WRITE YOUR NAME AND OTHER DETAILS ON EACH EXAM PACKAGE PAGE.**