

Executive Summary

Natural resources, and the materials derived from them, represent the physical basis for the economic system. Recent decades have witnessed an unprecedented growth in demand for these resources. This has triggered interest from policymakers in transitioning to a more resource efficient and circular economy.

The present report focusses on the current scale and possible environmental impacts of five business models that could support the transition to a more resource efficient and circular economy. Each business model modifies the pattern of product and material flows through the economy. By doing so, they have the potential to reduce the environmental pressures that result from current systems of production and consumption. The exact mechanisms vary:

- Circular supply models replace traditional material inputs derived from virgin resources with bio-based, renewable, or recovered materials, which reduces demand for virgin resource extraction in the long run
- Resource recovery models recycle waste into secondary raw materials, thereby diverting waste from final disposal while also displacing the extraction and processing of virgin natural resources
- Product life extension models extend the use period of existing products, slow the flow of constituent materials through the economy, and reduce the rate of resource extraction and waste generation
- Sharing models facilitate the sharing of under-utilised products, and can therefore reduce demand for new products and their embedded raw materials
- Product service system models, where services rather than products are marketed, improve incentives for green product design and more efficient product use, thereby promoting a more sparing use of natural resources

Not all of these business models are necessarily new. Recycling, reuse, and repair have existed for millennia. The sharing of under-utilised household possessions also has a long history, and the provision of access to products, rather than ownership of them, is not so different from traditional product leasing. What is new is the growing diversity and sophistication of these business models, as well as the range of sectors they are adopted in.

The market share held by these business models is small but there is considerable room for future scale up. In most sectors, the market penetration of circular business models remains limited and is usually no more than 5 to 10% in economic terms. Although some business models have experienced rapid recent growth, much of this has been from a very low base, and has been confined to a handful of economic niches. Consequently, there remains considerable potential for the scale up of circular economy business models, both within and across sectors.

Some circular business models are more amenable to more widespread adoption than others. Waste recycling and product reuse and repair, for instance, have a long history and are relatively mature. Achieving higher rates of market penetration for these more mature circular business models will require significant changes to existing policy frameworks. In some instances, this is already happening; the recent adoption of a comprehensive strategy on plastics in the European Union is one such example.

There are a number of other business models that have appeared more recently, and are scaling up rapidly. Technological innovations along with an increased consumer willingness to pay for green products seem to have been important drivers. For sharing models, and for certain variants of product service system models, for instance, the emergence of the internet, mobile phone technology, and the development of referral and reputational systems have allowed certain products to be shared more widely than ever before. Airbnb has gone from being a curiosity in the accommodation sector ten years ago to being the largest single supplier of short-term stays today. Similarly, global membership of urban car sharing schemes is growing at an annual rate of up to 65%.

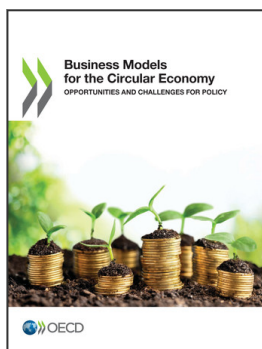
More widespread adoption of circular business models would significantly reduce environmental pressures, although there is uncertainty about possible rebound effects. The information compiled in this report allows three main conclusions to be drawn on the environmental implications of broader circular business model adoption:

- Insights from the lifecycle assessment literature indicate that the environmental footprint of circular products and services are typically significantly smaller than that for traditional products, which could have important first order environmental benefits.
- These first order benefits will not be evenly distributed across the product lifecycle. For example, remanufacturing reduces emissions and environmental pressures upstream associated with resource extraction, whereas sharing and product service system models also reduce pressures associated with the product use-phase.
- The overall environmental impact will also depend on indirect economic spillover and feedback effects. For example, in the context of sharing models, it has been shown that Airbnb rooms are typically 15 – 20% cheaper than equivalent hotel rooms. The consumer savings that this generates may well be allocated to additional consumption, which may partially or fully offset first order environmental gains.

In order to realise the environmental benefits, policy frameworks will need to evolve to create the conditions for wider uptake of circular business models. Ultimately, achieving a genuine transition to a more circular economy will be unlikely if circular business models continue to occupy small economic niches. Policy can play an important role by addressing the market failures, policy misalignments and status quo biases that currently hinder the competitiveness of these business models, including:

- ensuring that the full environmental costs of production and consumption activities are reflected in market prices;
- improving collaboration within and across sectoral value chains, through e.g. fostering industrial symbiosis clusters, promoting online material marketplaces or establishing secondary raw material certification schemes, and, more generally, facilitation of cooperation within;

- ensuring that existing regulatory frameworks are coherent and fit for purpose, and not serving to preserve an existing status quo;
- improving existing educational and information programs to provide individuals with a better understanding of the unintended consequences of their consumption choices (e.g. behavioural insights and nudges);
- promoting the supply of circular products (“supply-push measures”) or demand for them (“demand-pull measures”). For the former this includes eco-design standards, strengthened extended producer responsibility (EPR) schemes, and the provision of targeted R&D funding. Examples of the latter include differentiated VAT rates, recycled content mandates, and product labelling standards.



From:
Business Models for the Circular Economy
Opportunities and Challenges for Policy

Access the complete publication at:
<https://doi.org/10.1787/g2g9dd62-en>

Please cite this chapter as:

OECD (2019), "Executive Summary", in *Business Models for the Circular Economy: Opportunities and Challenges for Policy*, OECD Publishing, Paris.

DOI: <https://doi.org/10.1787/1bc45771-en>

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