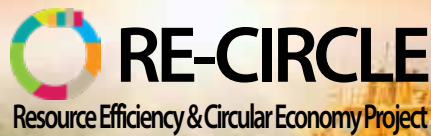


International Trade and the Transition to a Circular Economy



POLICY HIGHLIGHTS

International Trade and the Transition to a Circular Economy

A transition towards a more resource efficient and circular economy has broad linkages with international trade. We need to better understand the potential interaction of international trade and the circular economy to ensure the mutual supportiveness of these two areas for an effective circular economy transition.

Key messages

- A transition towards a more resource efficient and circular economy has broad linkages with international trade. This can occur at various levels along the product value chain such as trade in second-hand goods, end-of-life products, secondary materials or waste, as well as trade in related services.
- The circular economy transition will likely introduce structural changes to the economy and may have potential impacts on trade flows. Import and export demand for primary materials, secondary materials and waste may decrease in certain economies. At the same time, the circular economy transition may bring new opportunities for trade in services.
- It is important to ensure the mutual supportiveness of circular economy policies and trade policies:
 - Trade can provide potential opportunities towards a global circular economy by channelling waste and materials to destinations where there is comparative advantage in sorting and processing these materials. Therefore, unnecessary trade barriers such as import and export restrictions on waste and scrap should be avoided to the extent possible. However, these benefits should not be at the expense of environmental consequences.
 - While domestic initiatives such as eco-design and recyclability standards can bring about positive outcomes, they also face challenges as products are widely involved in global value chains and exposed to different regulations and standards. This questions the need for global efforts beyond domestic initiatives.
 - Trade-offs may arise between the potential benefits of trade in waste and second-hand goods and possible downcycling of end-of-life products. Furthermore, second-hand imports in some economies may hinder the transition towards energy efficient and low carbon economies due to slower market transformation.
- Looking ahead, there are a number of critical areas at the interface between trade and circular economy that merit further data collection and investigation on definitions and classifications. These include trade in waste, secondary materials, second hand goods, and goods for refurbishment and remanufacturing.
- International co-operation on circular economy value chains could be explored for possible harmonisation of quality standards of materials, promoting demand for second-hand goods and secondary raw materials, to remove unnecessary regulatory barriers, and to avoid environmentally harmful activities.

1 What are the potential linkages between trade and the circular economy?

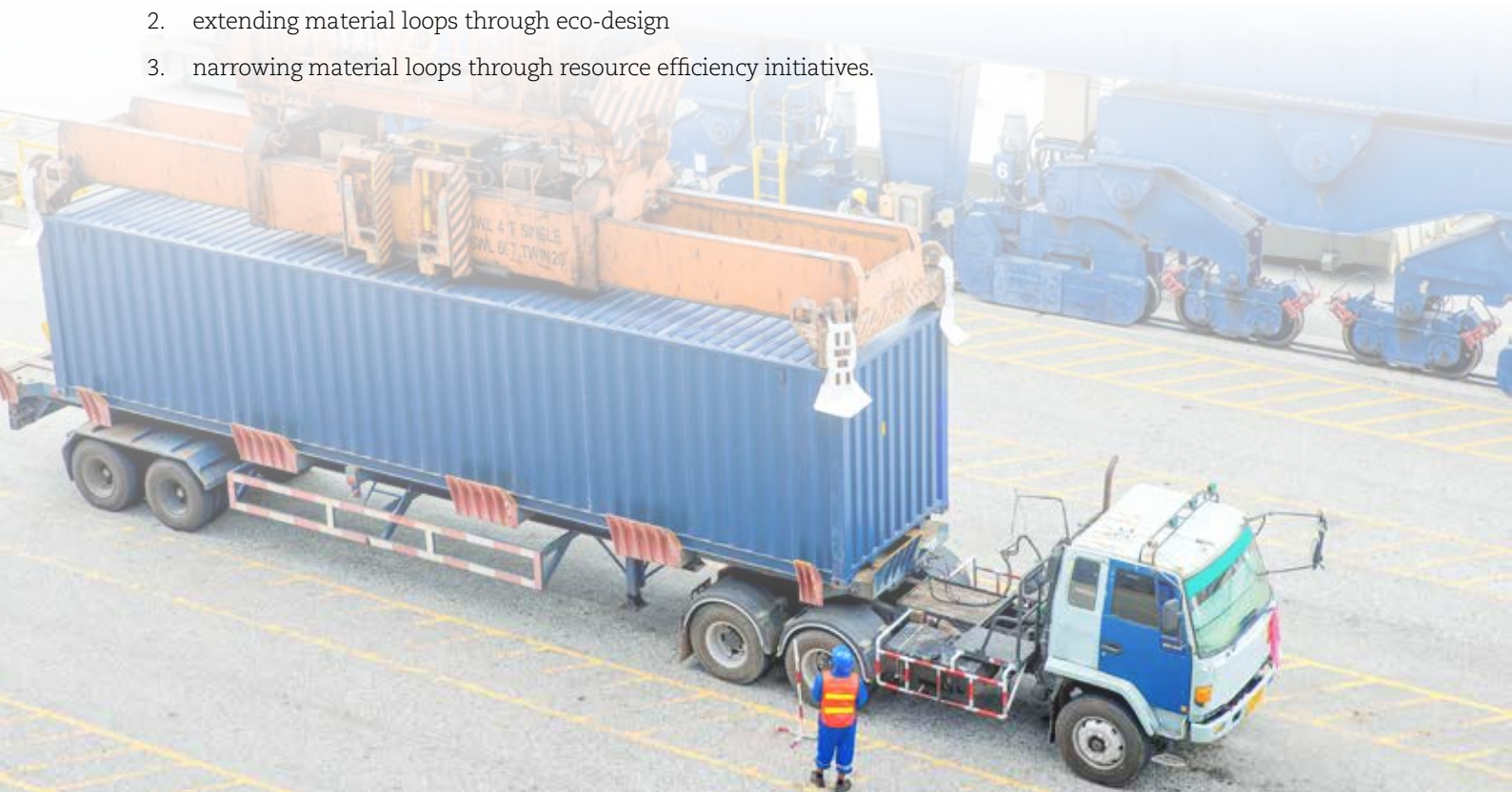
The circular economy, as a concept, involves using resources more efficiently across their life-cycle by closing, extending and narrowing material loops that could result in decoupling of primary raw material consumption from economic growth. The transition to a circular economy entails approaches that may lead to lower rates of extraction and use of natural resources. This in turn leads to improved resource efficiency and the promotion of sustainable materials management.

Expected benefits of a circular economy transition include:

- reduced extraction of virgin natural resources
- lessened exposure to (geo-political) supply risk
- reduced environmental pressures
- new economic and employment opportunities
- synergies with a low-carbon transition.

The transition towards a circular economy entails the utilisation of resources in the economy through a number of channels including::

1. closing material loops, through:
 - repair, reuse, refurbishment and remanufacturing of end-of-life products
 - recycling of post-consumer material and waste into secondary raw materials
 - product-service-systems.
2. extending material loops through eco-design
3. narrowing material loops through resource efficiency initiatives.

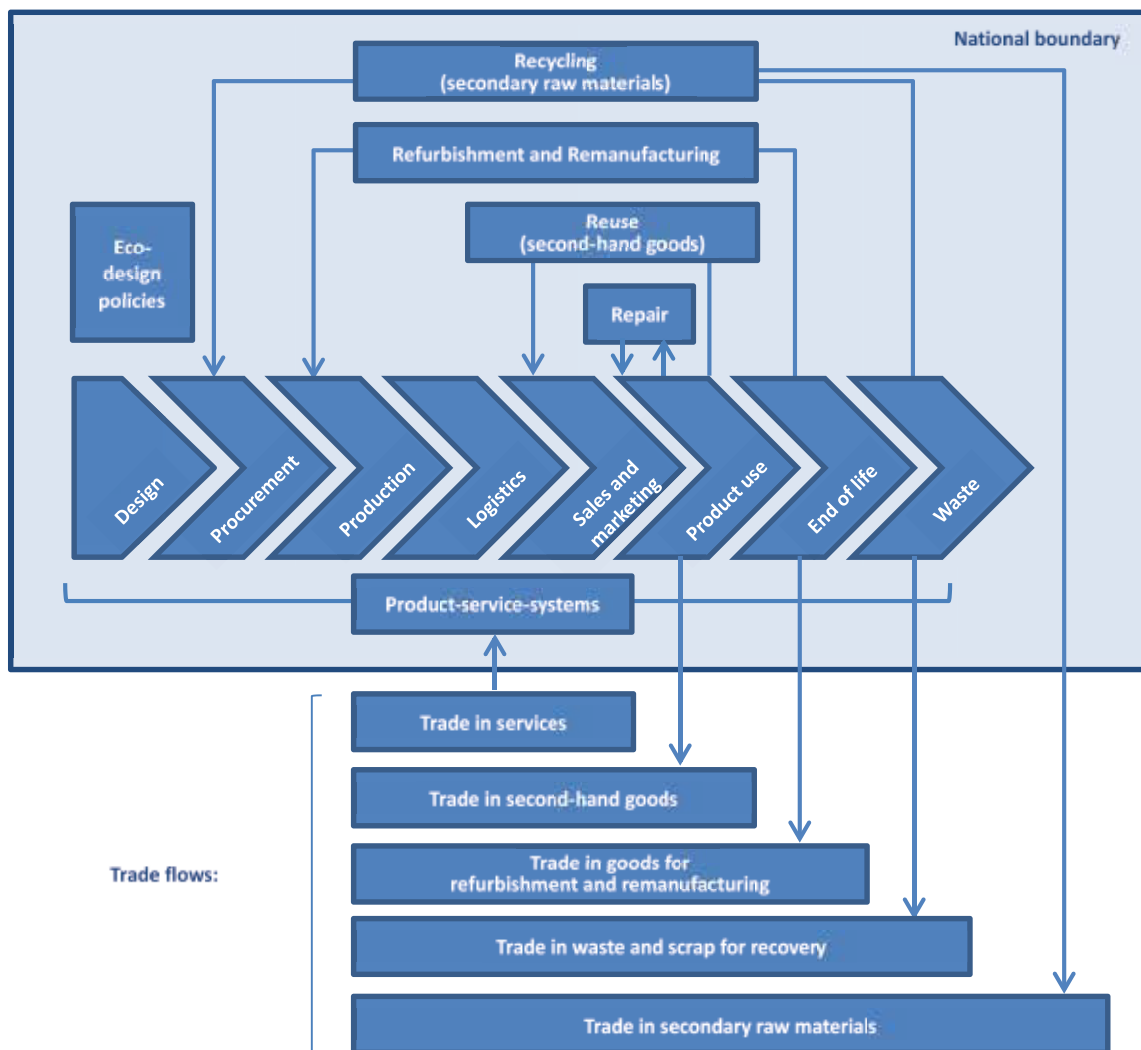


The focus of current policy frameworks is on achieving material circularity at the domestic level (illustrated in solid arrows in Figure 1).

These intersect with international trade at multiple levels along the product value chain (shown in the dotted arrows in Figure 1), such as:

1. trade in materials and waste for recycling and energy recovery
2. trade in secondary raw materials
3. trade in second-hand goods
4. trade in goods for refurbishment and remanufacturing.

Figure 1. **Linkages between international trade and the circular economy**



Source: Author, based on McCarthy, Helf and Börkey (2018), Lacy and Rutqvist (2015) and Rabobank (2015)

Notes: Solid arrows represent domestic flows; dotted arrows represent international trade flows.

2

Potential impacts of the circular economy transition on trade flows

International trade flows may shift according to the wide-ranging structural changes in production and consumption patterns induced by a transition towards a circular economy.



Potential impacts of the circular economy transition on trade flows include:

- lowering of the import demand of primary and secondary materials in a given jurisdiction;
- lowering of exports of materials and waste;
- the emergence of new trading opportunities for services trade, such as waste management, recycling, refurbishment and remanufacturing, reuse, and repair, as well as new business models and product service systems;
- circular procurement by subnational and national governments may also provide additional opportunities for international trade.

3 Interaction between trade and circular economy policies

At the same time, it is central to ensure that circular economy policies and trade policies are mutually supportive. The intention to promote a circular economy at the national level has at times raised concerns of creating unnecessary trade barriers and has led to disputes between several trading partners.

At the multilateral level, World Trade Organisation (WTO) disputes have been recorded in 2013 over an imposed recycling fee on motor vehicles giving preferable conditions to domestic manufactures over their foreign counterparts.

It is equally important to ensure that international trade rules do not hinder the adoption of circular economy and resource efficiency policies.

To facilitate a circular economy transition, governments commonly consider adopting domestic policies such as:

- Extended Producer Responsibility (EPR) schemes;
- standards for recycled materials
- standards for recyclability and reparability of products, requirements for eco-design
- requirements to secure information on chemical and material composition of products
- to phase out hazardous substances from products.



While domestic initiatives can bring about positive outcomes, they can also face challenges, as products are widely involved in global value chains through international trade and exposed to different regulations and standards based on various levels of environmental stringency across multiple jurisdictions worldwide.

For this reason, domestic policies alone may not be enough to facilitate a transition towards a global circular economy. There is a question as to whether further efforts are required at the global or regional level, such as:

- revisiting trade disciplines
- considering global or regional recyclability and reparability standards
- requirements on eco-design
- requirements to provide information on chemical and material composition of products
- mutual recognition of schemes.

4

Trade in waste material

There is growing awareness on the importance of treating waste as a resource and a major trading good. Waste trade can provide potential opportunities to direct waste to countries with comparative advantage in sorting and processing activities that can help boost global recycling rates.

Post-consumer materials and waste have intrinsic value for material and energy recovery and therefore there is increasing recognition that non-hazardous waste could be traded for further processing and recovery under proper controls.

In 2014, India accounted for 13% of global secondary steel production despite limited supplies of domestic steel scrap which implies that trade in waste and scrap for material recovery has played an important role for the production secondary steel.

Imposing trade restrictions on waste and scrap can potentially undermine production efficiency in emerging economies (in particular advanced developing countries) by limiting the supply of feedstock material at low prices.

However, with the worldwide volume of trade in waste and scrap rapidly increasing (see Figure 2), there are potential concerns in some export destinations surrounding the environmentally sound management of waste:

- There is some evidence that bilateral trade in waste increases if there is divergence in environmental policy stringency between the trading partners. This implies that waste could be destined to countries with laxer environmental standards.
- There are particular concerns with the increase of bilateral flows in waste destined to emerging economies and developing countries with underdeveloped waste management capacity.
- Another potential issue is illegal trade in waste. Illegal and informal recycling activities, especially in the case of informal e-waste processing in developing countries, often involve toxic emissions and dumping of waste acid without any proper treatment or controls that can lead to severe environmental and health concerns.
- Claiming that waste imports are polluting the environment, China has announced that it will impose import restrictions on waste and scrap taking effect in several phases starting from January 2018.

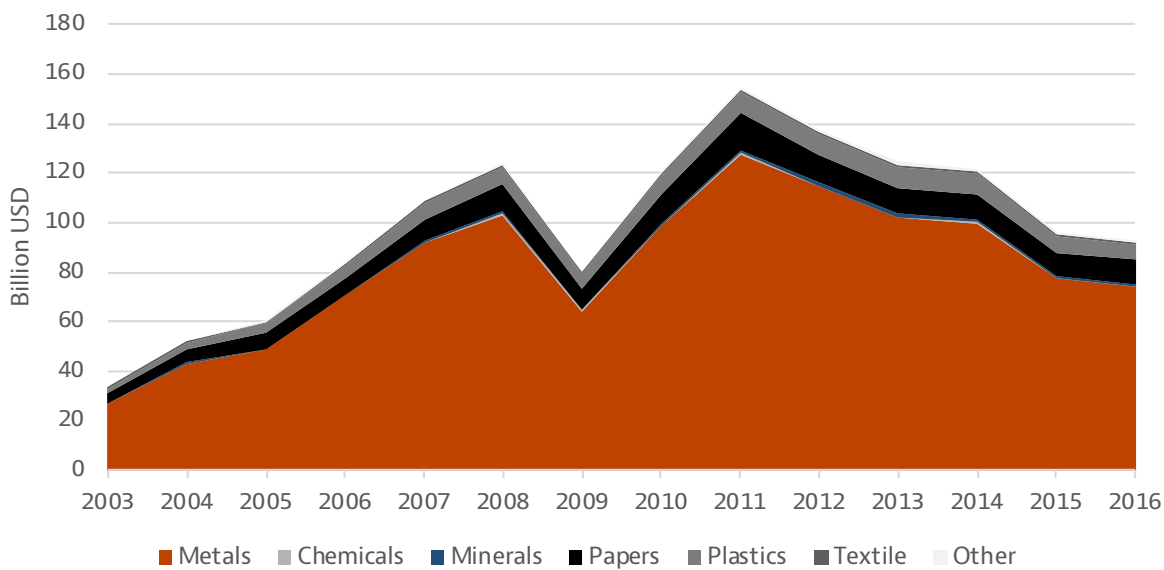


Trade flows in waste and scrap in itself does not indicate an increase or decrease in environmental pressures.

- The question is rather if traded waste and scrap is processed and recovered in an environmentally sound manner and closely in-line with circular economy objectives.
- It would be important to understand to what extent waste and scrap trade potentially contributes to upcycling and downcycling.

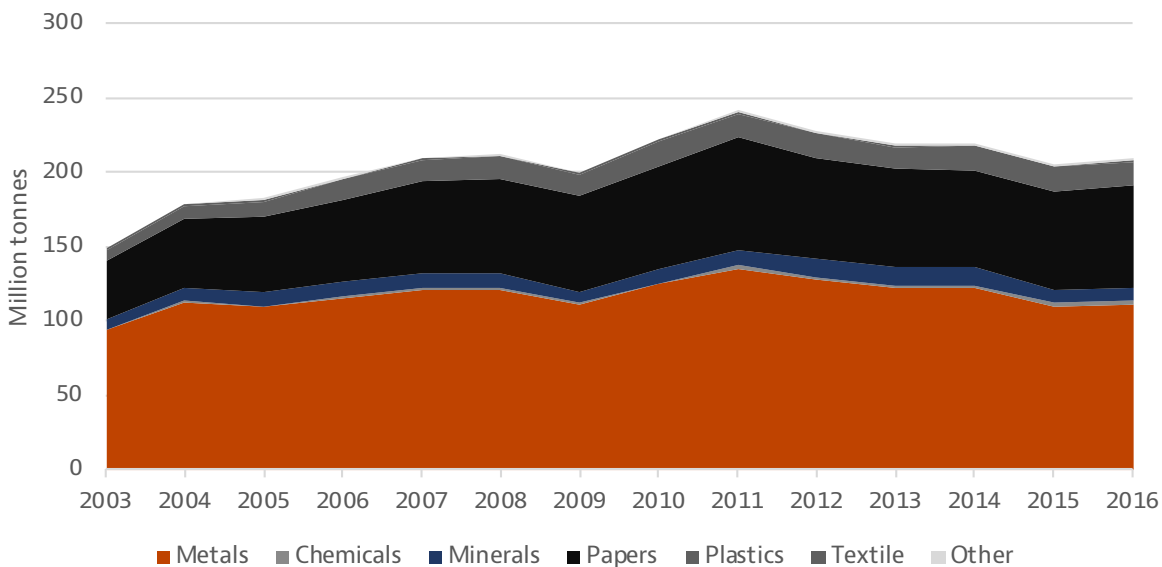
- Distinguishing trade in waste for material recovery and trade in waste as residuals intended for energy recovery would be particularly important despite the potentially challenging task.
- Another potential issue is the definition and classification of waste, scrap and secondary materials that can be different from country to country. The distinction between end-of-life products, non-hazardous waste, and secondary raw materials may not be the same across different jurisdictions and subject to further scrutiny.

Figure 2. Value of global waste and scrap trade



Source: OECD (forthcoming), Indicators on Trade and Environment.

Figure 3. Weight of global waste and scrap trade



Source: OECD (forthcoming), Indicators on Trade and Environment.

5

Trade in secondary raw materials

Trade in secondary raw materials constitutes a very important element of the trade and circular economy interface.

The substitution of primary raw materials by secondary raw materials would encourage decoupling by decreasing demand for primary materials while sustaining levels of economic growth. Since natural resources are geographically unequally concentrated, trade implications are significant in the worldwide distribution of primary raw materials. For example, in 2013, 43% of global production of iron ore was exported outside of the country of origin.

Exporters of secondary raw materials are also concentrated in certain parts of the world. For instance, the European Union, Japan and the United States are identified as the largest exporters of scrap metal. However, there is currently no internationally accepted definition of secondary raw materials and tracking such trade flows is therefore difficult.

In order to enhance the utilisation of secondary raw materials, removing barriers to trade on secondary raw materials is gaining attention.

Export restrictions are frequently applied to secondary raw materials. The OECD database on export restrictions indicates that roughly one-third of export restrictions between 2009 and 2014 were applied to waste and scrap.

In the context of the European Union, the lack of adequate tools and standards to ensure the quality of secondary raw materials to enhance their utilisation and trade are identified as potential barriers that should be addressed.

In relation to the adoption of recyclability standards, an important aspect is to ensure that products are designed in a way that they are easier to recycle and refrain from using hazardous content.

Similarly, securing information on chemical and material composition of products is of particular importance to ensure the recyclability of end-of-life products. With the emergence of global value chains, eco-design and eco-labelling schemes may also play an important role to facilitate a transition to a global circular economy.

6

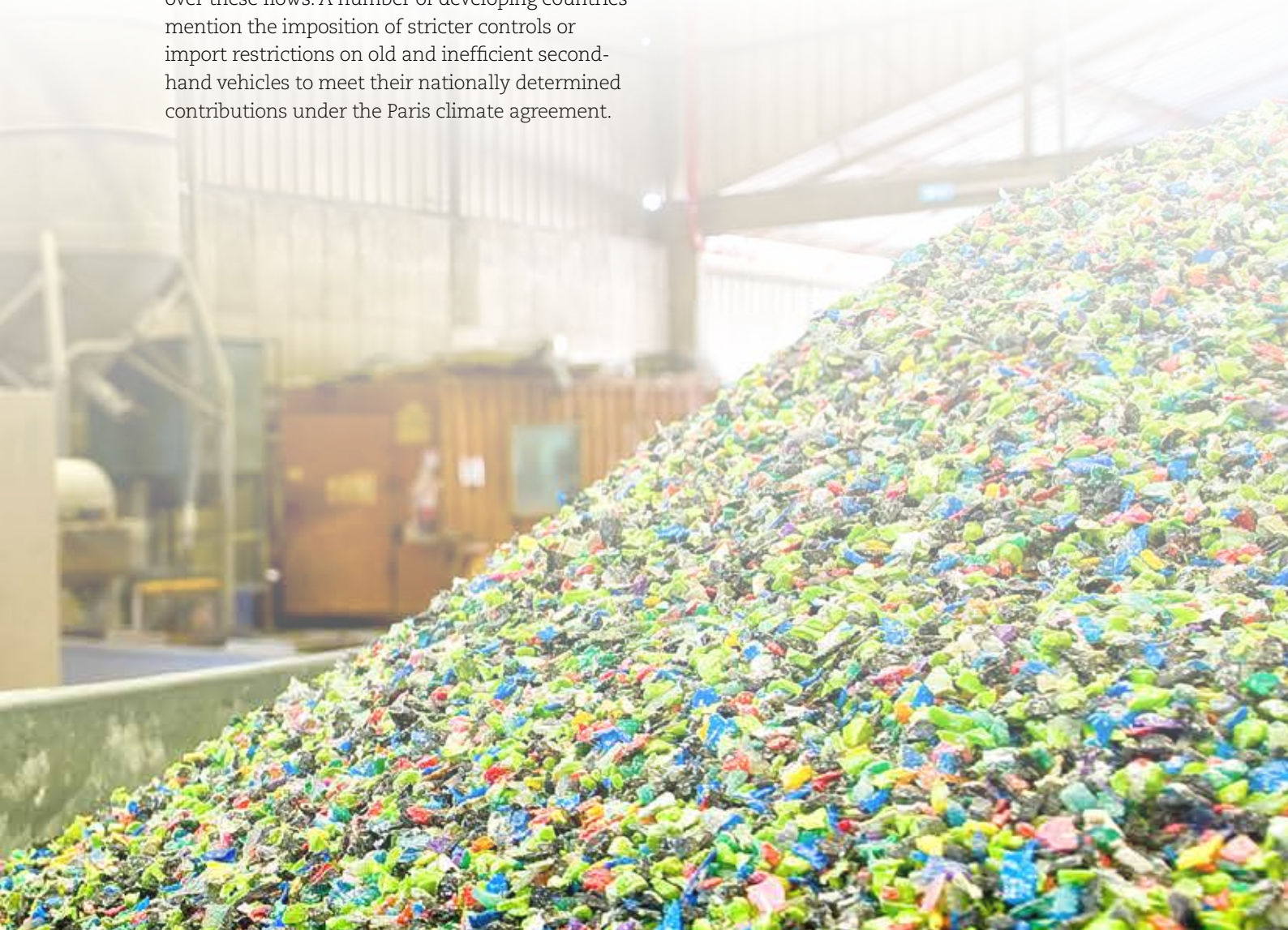
Trade in second-hand goods

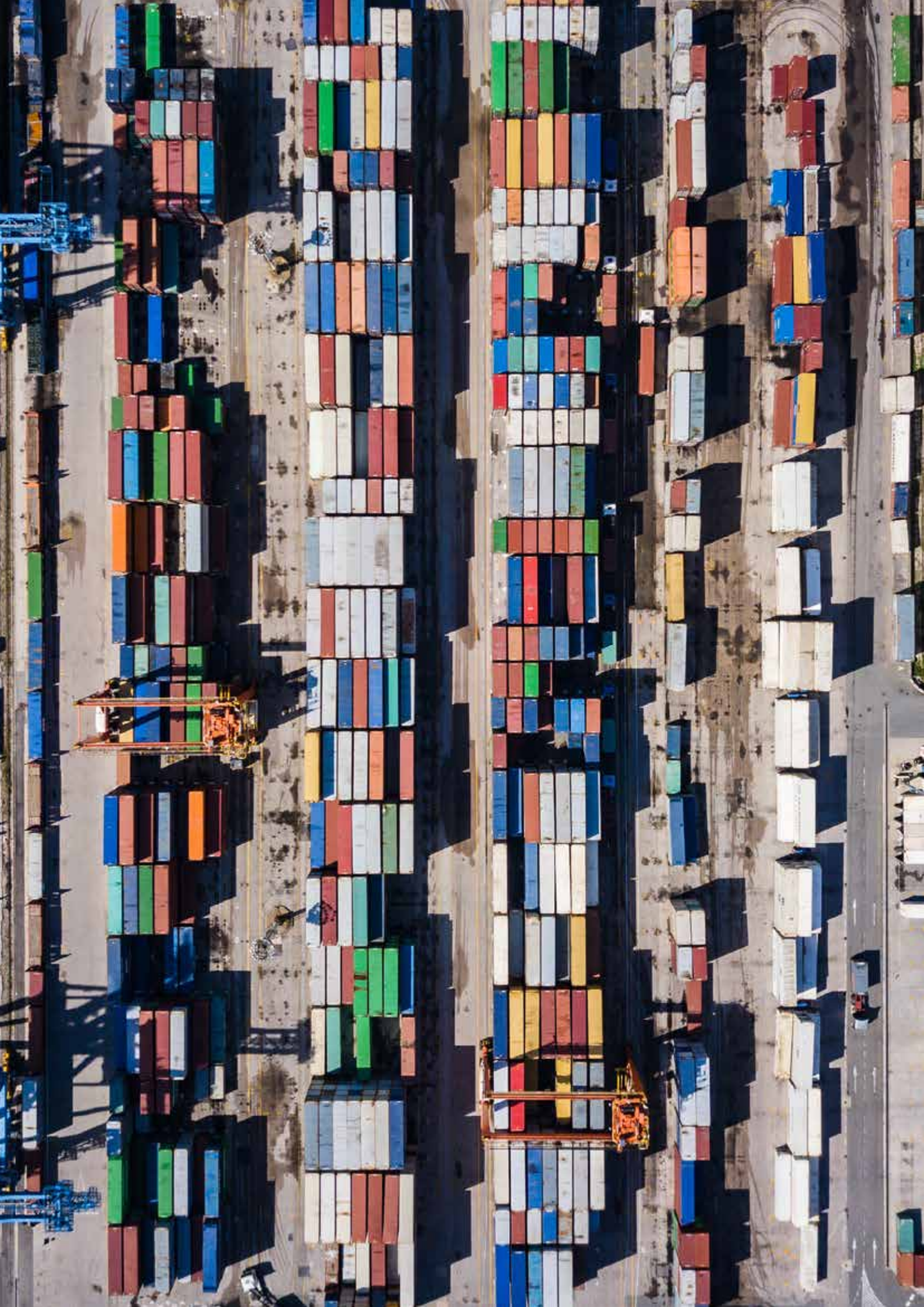
From a global circular economy perspective, promoting the re-use of products through exports of second-hand goods would likely provide economic and environmental benefits to the global economy such as in used cars and second-hand textiles.

However, benefits from increased trade in second-hand goods may also entail potential risks:

- From the domestic policy perspective of an exporting country, these exports could be considered as “leakage” from the official system such as in extended producer responsibility schemes.
- Second-hand good imports in some economies may hinder the transition towards energy efficient and low carbon economies due to slower market transformation or place additional pressures on the management of end-of-life products. Consequently, countries importing second-hand goods may impose import restrictions on such products in order to increase oversight and control over these flows. A number of developing countries mention the imposition of stricter controls or import restrictions on old and inefficient second-hand vehicles to meet their nationally determined contributions under the Paris climate agreement.

There is currently no comprehensive data on second-hand goods. One potential issue identified is the difficulty in distinguishing trade in second-hand products from products that are exported for recycling and recovery.





7 Trade in goods for refurbishment and remanufacturing

There are increasing concerns related to international trade in refurbishment and remanufacturing of end-of-life products.

- Industries have been facing issues recovering their end-of-life products across borders for refurbishment and remanufacturing since they are often legally classified as waste.
- Remanufactured products that could be resold within a given jurisdiction face transboundary issues when shipping across borders since they do not meet newly introduced standards and requirements at the time of exporting the remanufactured product.



8 International co-operation on circular economy value chains

A transition towards a global circular economy is gradually gaining political attention. The aim is to promote the circular economy not only in a given jurisdiction but also by exploring synergies in working with other countries to achieve material circularity and ultimately decoupling of resource use from economic growth at the macro level.

Such initiatives could consider joint efforts towards:

- better understanding the quality and quantity of materials available in the region
- identifying priority materials for trade and the required processing capacity level
- possible harmonisation of quality standards of materials
- promoting demand for second-hand goods and secondary raw materials
- removing unnecessary regulatory barriers
- avoiding environmentally harmful activities such as non-compliant, poorly regulated, and informal recovery operations.

These concepts could be encouraged through multilateral frameworks and international trade negotiations.



Potential ways forward

There are very few studies dedicated to investigating the interface of international trade and the transition to a more resource efficient and circular economy. The ultimate question is how could circular economy policies and trade policies be aligned to encourage the decoupling of resource consumption from economic growth at the global level without creating unnecessary barriers to international trade as well as undesirable environmental consequences. The scarce literature available on this question to date forms the strong motivation for further work in this area.

The following research areas can be possible avenues to establish a better understanding of the interface between trade and the circular economy:

1. the potential impacts of the circular economy transition on trade flows;
2. the interaction of trade and domestic circular economy policies;
3. trade in waste, scrap and secondary raw materials; and
4. international co-operation on circular economy value chains.

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RE-CIRCLE is an OECD project providing policy guidance on resource efficiency and the transition to a circular economy.

The aim of the RE-CIRCLE project is to identify and quantify the impact of policies which increase resource efficiency and further the transition to a circular economy.

oe.cd/recircle

The report, *International Trade and the Transition to a More Resource Efficient and Circular Economy – Concept Paper*, sets forth the potential interaction of international trade and the circular economy in order to guide further research areas to explore on this topic.

For further reading on trade and circular economy see the OECD Environment Working Paper on which these Policy Highlights are based:

Yamaguchi, S. (2018), “International Trade and the Transition to a More Resource Efficient and Circular Economy: A Concept Paper”, *Trade and Environment Working Papers – 2018/03*, OECD Publishing, Paris, <http://www.oecd.org/environment/waste/policy-highlights-international-trade-and-the-transition-to-a-circular-economy.pdf>.

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