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The Circular Economy and International Trade: Opportunities for action in the World Trade Organization

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Forum on Trade, Environment & the SDGs (TESS)

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Circular Business Models and Trade Flows

Note: This section builds on analysis in Bellmann, C (2021) “The Circular Economy and International Trade: Options for the World Trade Organization (WTO), International Chamber of Commerce. Available at https://iccwbo.org/publication/the-circular-economy-and-international-trade-options-for-the-world-trade-organization/

Five circular business models

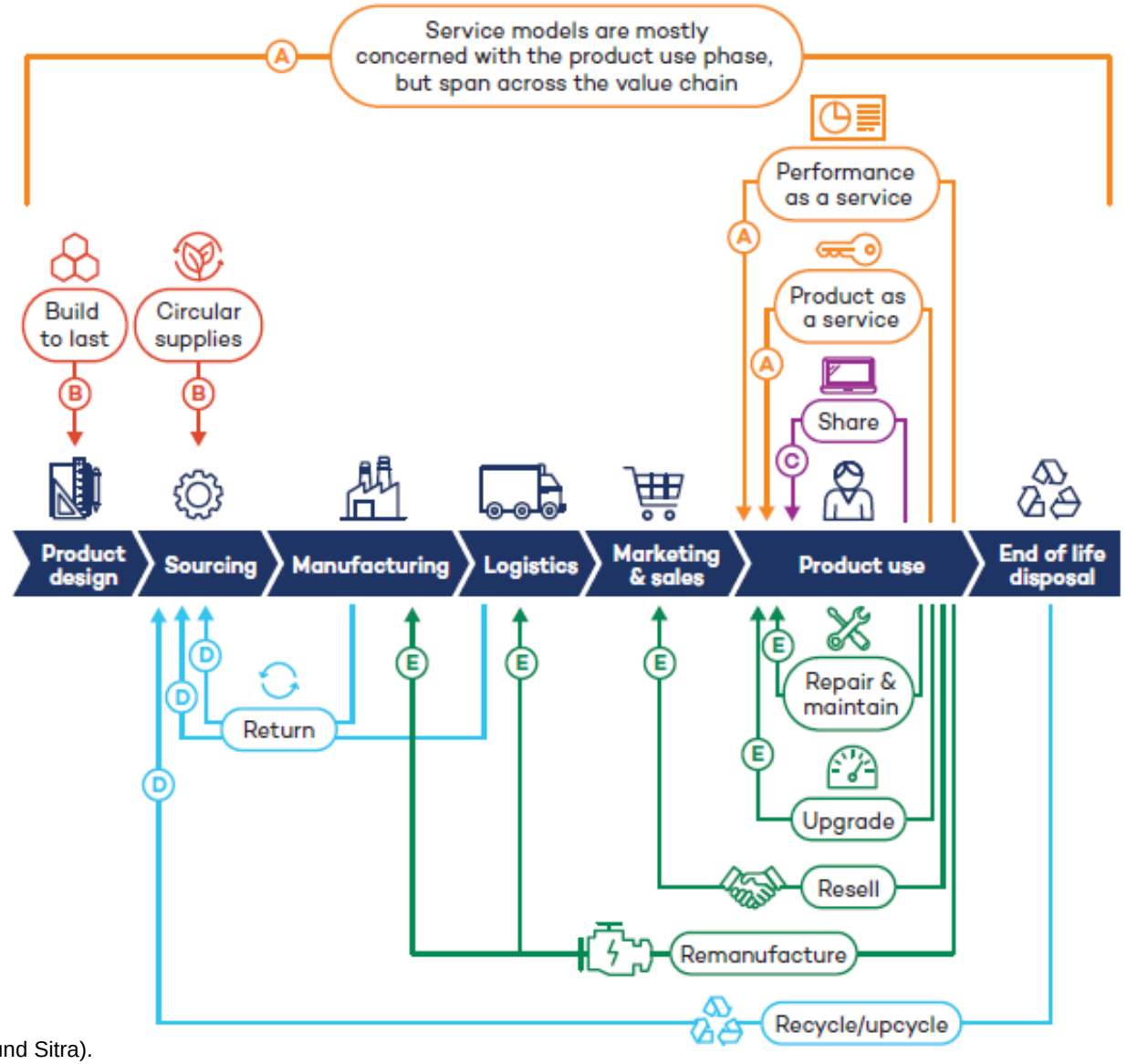
A Product service system
- Remove the need to own and increase use

B Circular supply chain
- Recycled direct materials
- Sustainable indirect materials

C Sharing platform
- Virtual sharing platform
- Physical sharing platform

D Recovery & recycling
- Recover
- Downcycle

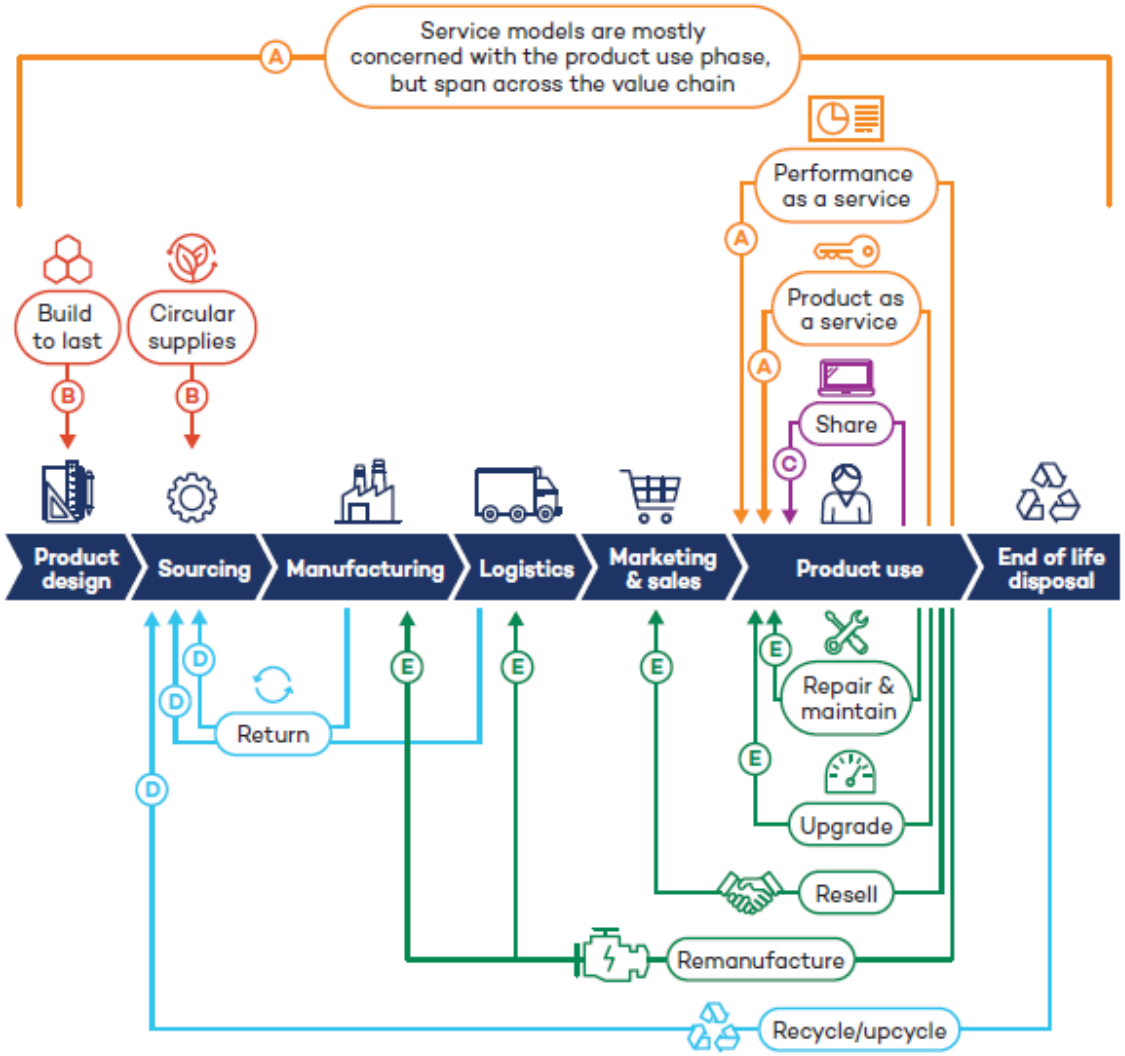
E Product life extension
- Restore
- Repurpose
- Refresh



Source: Arponen, 2019 (Finnish Innovation Fund Sitra).

International trade is likely to play a critical role in facilitating a CE transition, by exploiting existing comparative advantages and allowing economies of scale.

Trade is happening at all stages of the value chain

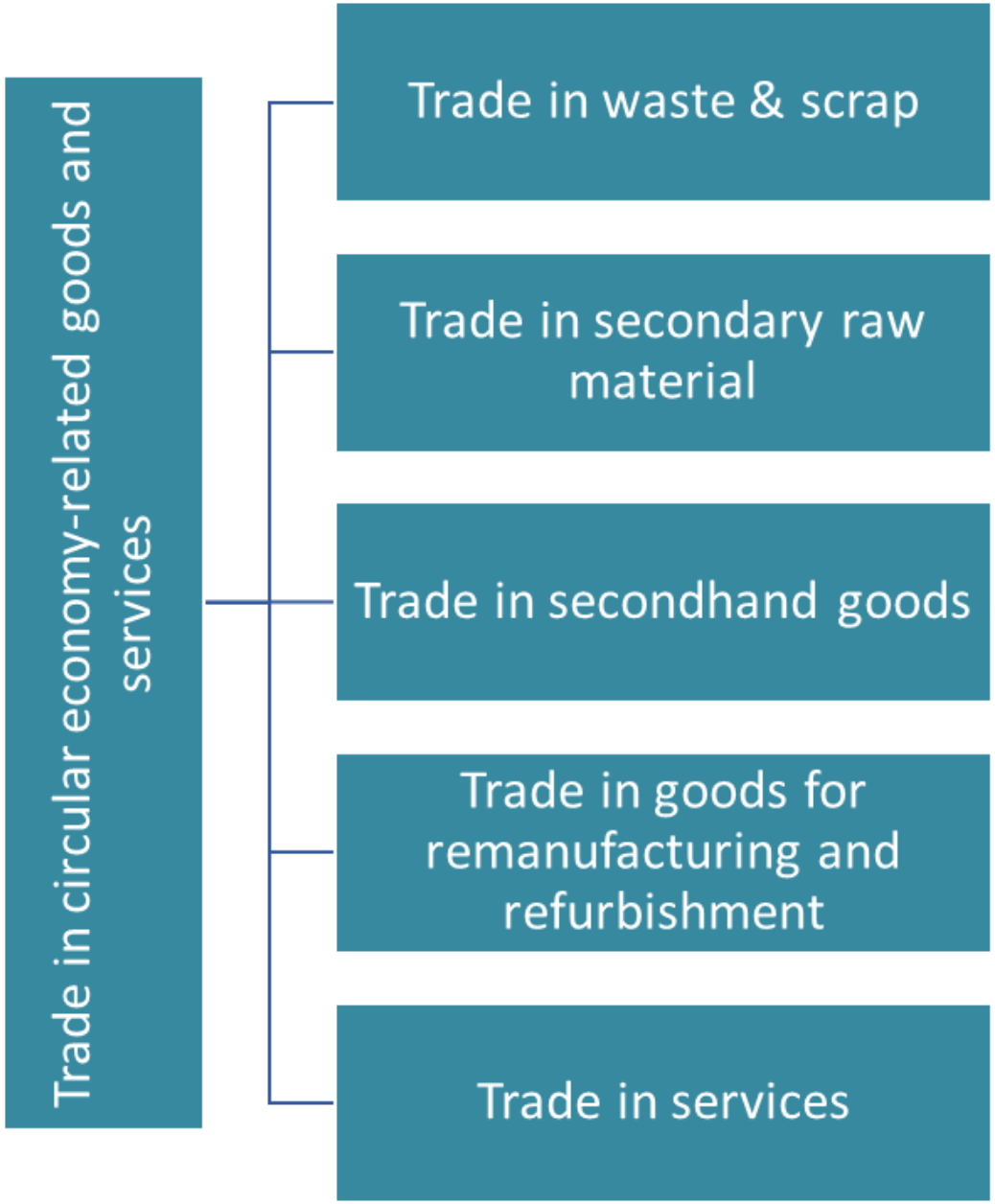


Trade in circular economy-related goods and services

- Trade in waste & scrap
- Trade in secondary raw material
- Trade in secondhand goods
- Trade in goods for remanufacturing and refurbishment
- Trade in services

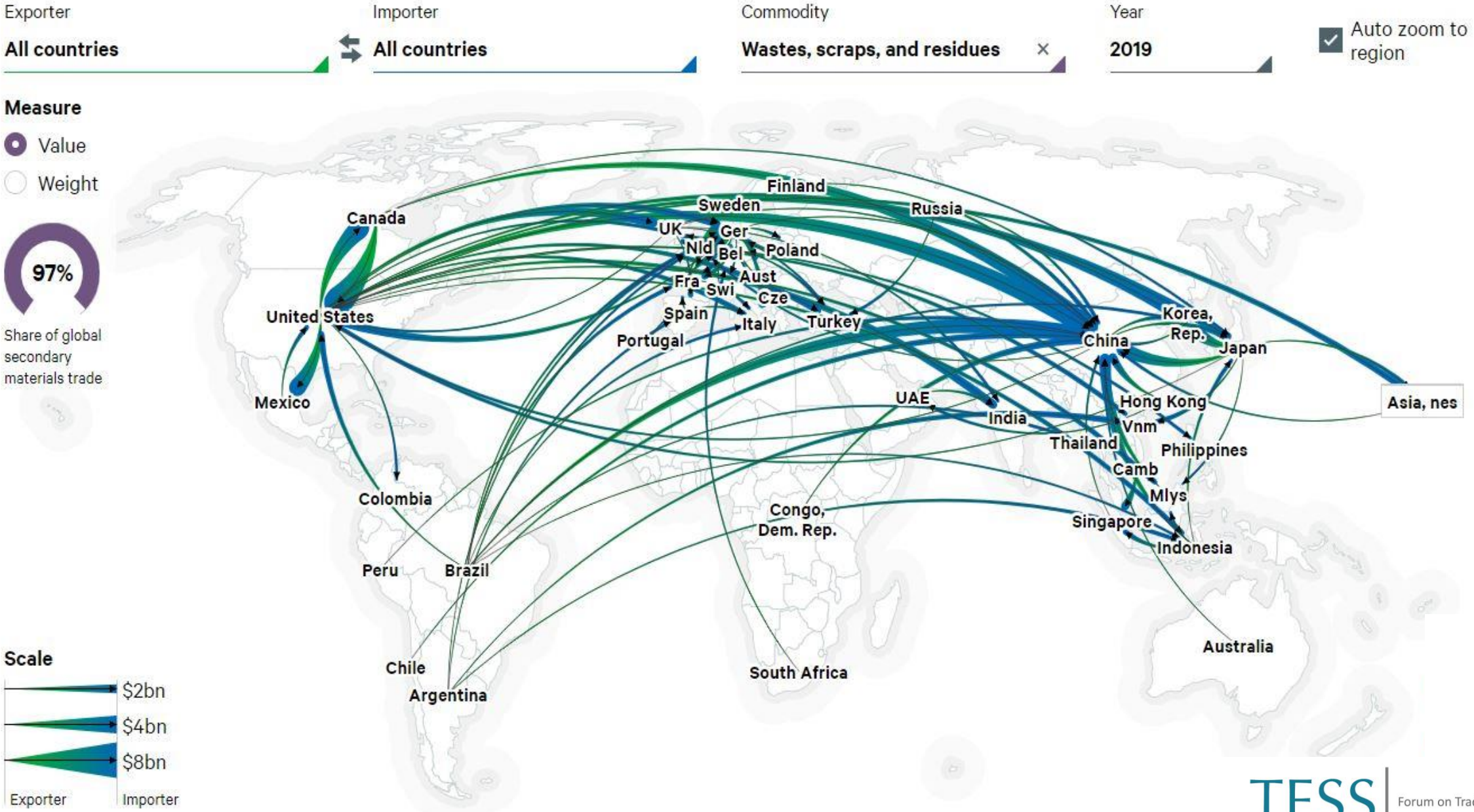
Source: Arponen, 2019 (Finnish Innovation Fund Sitra).

Assessing trade flows as a challenge



- Roughly USD 95 billion in 2018 (OECD).
- Metallic scrap as the most traded types (27% of primary metals exports) and the ones with the highest economic potential.
- Paper 12%, plastics 3%.

World trade in waste, scrap and residues (USD bn, 2019)



Source: Chatham House circular economy trade data explorer, https://circulareconomy.earth/trade

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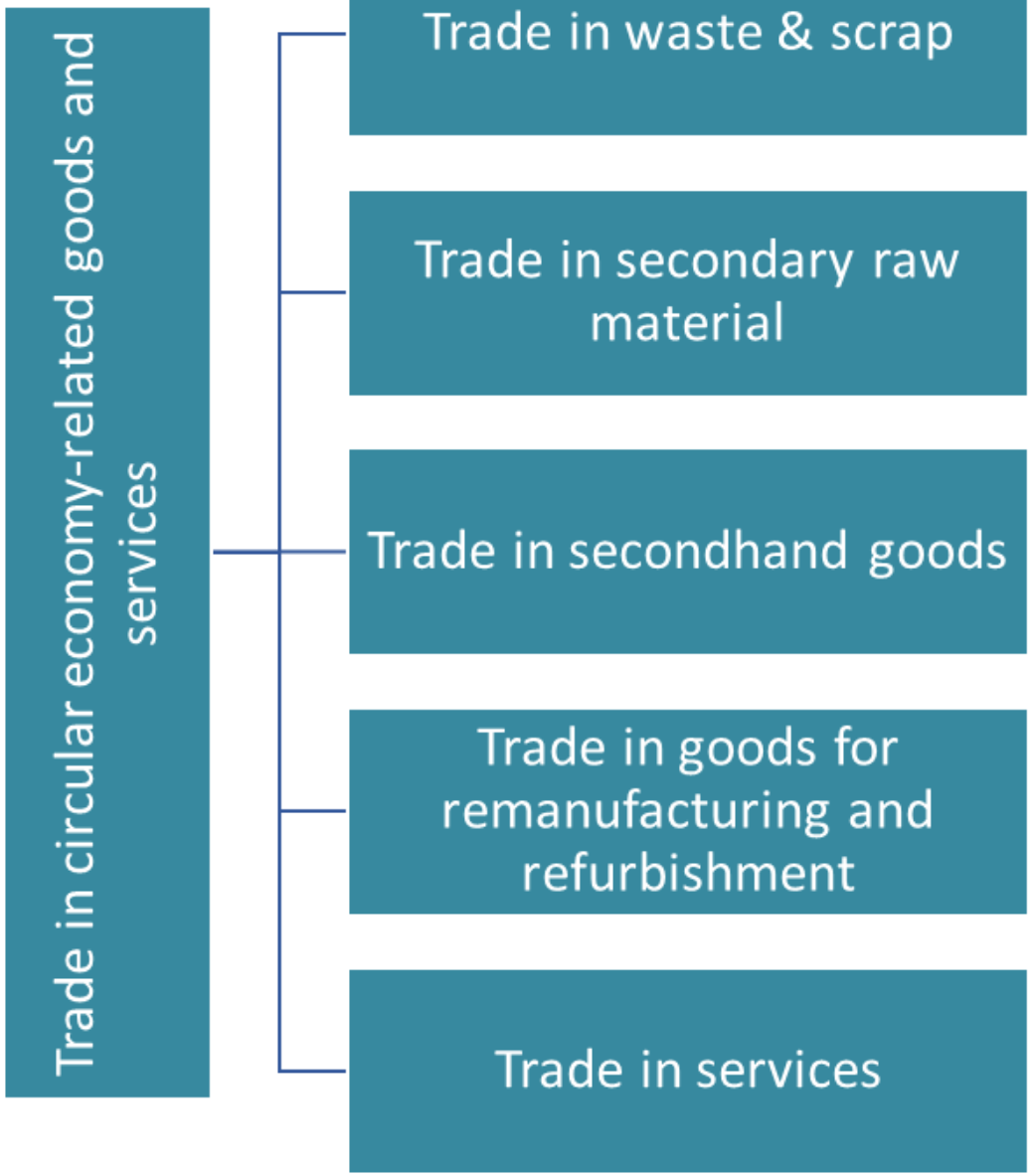

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- Harmonized system (HS) at the six-digit level does not distinguish between secondary raw materials and waste and scrap.
- Trade estimatd at USD 9.6 billion in 2019 (Chatham House).
- Data available at regional level: EU exports of recyclable raw material increased by 61 percent in volume between 2004 and 2019 to reach 25.5 million tons.
- In 2016, these exports represented 36% of total EU waste trade.

- Tracking trade flows as a main challenge.
- Difficult to distinguish these goods from new products or waste in HS system.
- Special HS codes only for retreaded tyres, worn clothes and secondhand construction materials.

- No reliable trade data.
- Based on business data, key services include IT; professional, technical, and business services; maintenance, repair, and installation; sewage and waste collection; and construction services.

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Classification of End of Life Products and Issues Arising at the Border

Note: This section builds on case studies published in Bellmann, C (2021) "The Circular Economy and International Trade: Options for the World Trade Organization (WTO), International Chamber of Commerce. Available at https://iccwbo.org/publication/the-circular-economy-and-international-trade-options-for-the-world-trade-organization/

Challenges facing trade in e-waste repair, refurbishment and recycling infrastructure

- Growth of e-waste, estimated at 53.6 Mt globally in 2019.
- Historically, part of this e-waste was exported to the developing world with cheaper disposal facilities and lower environmental standards.
- The recycling of e-waste relies on “reverse supply chains” requiring large quantities.
- Only a handful of large-scale smelters and refiners have the capacity to extract metals from e-products making the process particularly vulnerable to limitations on trade.
- Divergences in national classifications of hazardous waste, non-hazardous waste, and non-waste goods destined for reuse, repair and refurbishment affects cross-border shipment.
- This may deters investment in high-quality repair, refurbishment and recycling infrastructure.

The case of electric vehicles

- Higher tariffs than other industrial goods and tariff escalation.
- EV tariffs are not lower than the ones applied to vehicles powered by internal-combustion engines (ICE).
- Restrictive rules of origin (RoO) in free trade agreements may also disincentivize exports of EV due to limitations on the value allowed to be sourced in third countries.
- Because used batteries are usually classified as hazardous goods or hazardous waste, they are subject to specific regulations affecting international trade.
- Divergences across jurisdictions in recycling regulations or definitions of what constitute waste further act as barriers preventing reuse, remanufacturing, and recycling along the battery lifecycle.

Standards based on product quality as opposed to origin: the case of Ragn-Sells

- Restrictions on cross border waste transports slows down innovation in circular solutions
  - In Europe, up to six months to get approval to transport waste, and only 25 kg is allowed for lab tests whereas companies often require at least 5 tons for validations of circular solution.
- Material standards are often based on the origin of a resource rather than its quality. This in turn may affect the development of circular approaches.

- The Ash2Phos process can transform sewage sludge ash into raw material for phosphorus extraction and thereby be a part of a circular solution for phosphorus management.
- EasyMining´s Nitrogen Removal Process enables efficient removal and recovery of ammonium from wastewater.
- The Ash2Salt technology extracts and separates commercial salts of high quality from incinerated household waste (fly ashes) that cannot be recycled.

Because the origin of the material is waste, these innovations are not allowed in the market.

Challenges for the Harmonized System

- As the collection of trade data is underpinned by the HS classification, the international nomenclature is a vital starting point for governments and stakeholders to have a more granular picture of trade flows associated with circular business models.
- At present, classifications and categorizations of products under the HS do not always capture important aspects of trade flows across the life cycle that are relevant to policymakers and researchers.
    - HS relies quite heavily on physical characteristics of products so when differences are not based on obvious physical characteristics, re-classification is harder.
- Lack of harmonized classification of end-of-life products, including waste, scrap, and secondary materials, remanufactured goods, goods destined for reuse, repair and refurbishment etc.
- Critical challenge relates to:
    - Differentiating goods based on their intended use (e.g. second hand goods vs new products or secondary raw material vs waste and scrap).
    - Differentiating goods based on their potential environmental threat (hazardous, contaminated, mixed, etc.).
    - Differentiating goods based on their potential environmental benefits (e.g. electric vehicles vs vehicles powered by internal-combustion engines).

Contribution of the 2022 review of the HS system to the advancement of a more CE

- Enabling better monitoring of goods that can constitute a threat to the environment
  - Electrical and electronic waste and scrap
    - Waste and scrap of primary cells, primary batteries and electric accumulators; spent primary cells, spent primary batteries and spent electric accumulators.
    - Of a kind used principally for the recovery of precious metal.
    - Other electrical and electronic assemblies and printed circuit boards.
- Singling out goods that serve environmental purposes.
  - New subheading specifically for solar water heaters, or photovoltaic electric generators.
  - Separating out of PV cells from LEDs.
  - Several types of electric and hybrid-electric motor cars were first identified in the 2017 revision. The 2022 revisions creates several more categories.

Limitations in the existing HS classification relevant to trade flows: the case of plastics

- Limited differentiation and details on the types of plastic polymers in products traded, from primary plastics to waste.
- Classifications of plastic waste that do not reflect those covered by the new Basel Convention plastic waste amendments.
- Limited detail regarding the feedstocks used in different products, e.g. bio-based, recyclates, and virgin fossil fuels.
- Absence of information on substances of high environmental and health concern.
- Gaps in the scope of products that are classified as plastics.
- Varying detail on the share of plastics embedded in products.
- Capture of only a subset of the actual trade in plastics and plastic inputs.
- Failure to capture plastic packaging that is an integral part of other traded products.

Opportunities for engagement in the WTO

- In the Trade and Environmental Sustainability Structured Discussion (TESSD):
  - “Identify and compile best practices and opportunities for voluntary action and partnerships to ensure that trade and trade policies are supportive of and contribute to (i) achieving a more resource-efficient circular economy”.
- In the Informal Dialogue on Plastic Pollution and Environmentally Sustainable Plastics Trade (IDP):
  - “Identify ways to improve the understanding of global trade in plastics, including flows of plastics embedded in internationally traded goods or associated with them (such as plastic packaging)”.
  - Identifying actions needed to improve gathering of data on trade flows supply chains including by utilizing the HS Convention of the WCO.

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Thank You