

Learning About **ESG**

Circular electronics

Learning About ESG is an educational series that connects **environmental, social and governance** topics with investing.

Join us each issue to see how global developments can have implications for investors. The better we understand ESG, the bigger the role it can play in our everyday lives – and investment portfolios – contributing to a better world.

Key takeaways

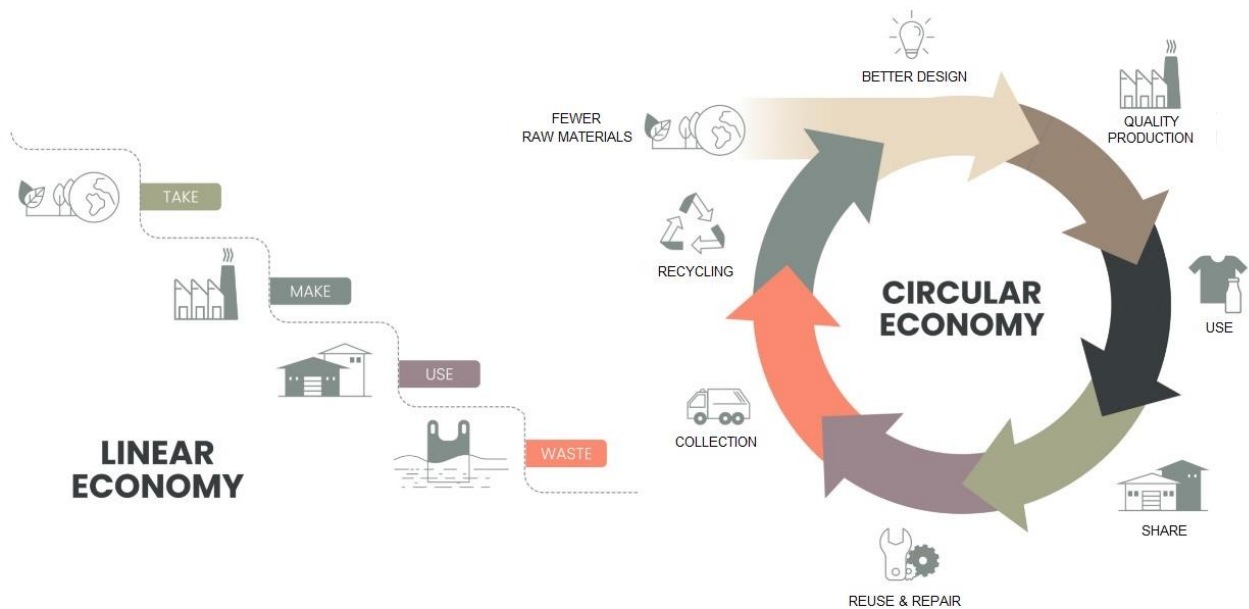
- ◆ With our current lifestyles dependent on electronic devices and equipment, e-waste has become a huge waste stream growing at a far faster rate than the global economy.
- ◆ This has important long-term sustainability implications, including impacts to climate change and demand for key materials that have contributed to recent inflation pressures.
- ◆ Opportunity lies in the emerging shift to a circular economy, where a more efficient approach to electronic goods can deliver much improved sustainability and business success.



What is happening?

The global economy currently follows a linear path in which we continuously consume natural resources to produce, use and dispose of goods. We consume 80% more resources than the planet can regenerate. This is clearly unsustainable. A shift to a circular economy (Figure 1) is required.

Figure 1 – Shift underway in the global economic model



E-waste, or electronic goods that have ceased to be of value to their users, is a 50-million-ton¹ waste stream growing at double the rate of the global economy². This is primarily due to the proliferation of electronic devices in our daily lives and rapid innovation cycles which leave older devices defunct. Beyond the negatives from filling expanding landfills, the wasted resources contribute to climate change along with elevated demand for many metals and minerals whose costs have risen substantially in recent years.

Despite the majority of the global population being covered by e-waste

recycling regulation, only around one-fifth of e-waste is recycled³. These rates are low for a number of reasons, including:

- Consumers are often unwilling to part with personal electronics, mostly for understandable data privacy concerns, so 'hoard' devices at home.
- Recycling is expensive given that as new devices are frequently developed, recyclers must invest in new machinery to process them. Often, the cost of this work is not offset by the gain from the materials recovered.

1. Baldé, C., Forti, V., Gray, V., Kuehr, R. and Stegmann, P. (2020). The Global E-waste Monitor 2020.
2 & 3. World Economic Forum – A New Circular Vision for Electronics (2019)

Where can change come from?

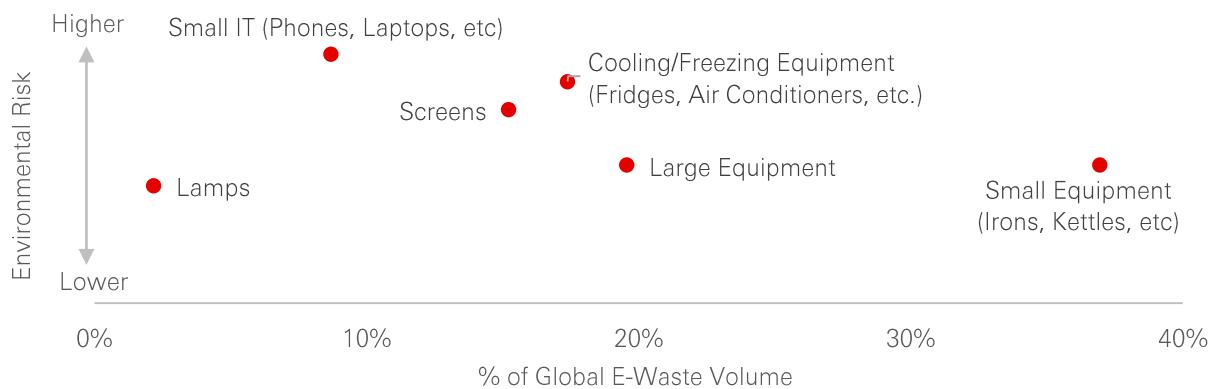


Most of the positive trends involve ways of extending product life. For instance, some technology hardware companies are shifting business models to be more service based, either through software sales and upgrades instead of new devices, or through subscription services which enable hardware products to be re-used. Motivation lies in the opportunity to grow revenues and profitability through recurring income as opposed to one-off sales.

It is easy for old electronic devices to be either kept at home, dumped in landfill, or even sent to the poorest parts of the world for informal disassembly. This informal recycling creates many issues, including

risks to human health from the toxic fumes generated by burning the devices. There is also local environmental damage, as toxins leak from devices into water bodies.

Scale and environmental impact of e-waste

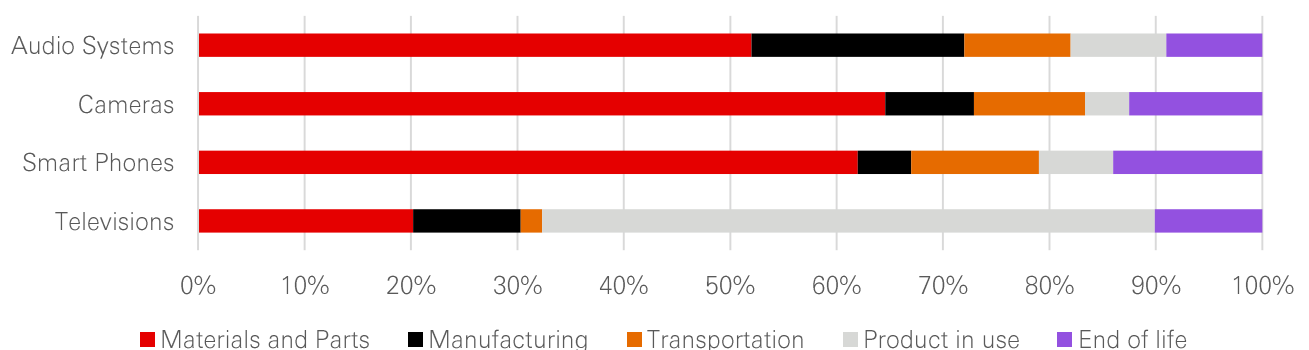


Source: HSBC Asset Management research and UN Global E-waste monitor data as of 2017.

Most efforts to reduce e-waste have focused on trying to better process it. Whilst these schemes have had success in some regions, more needs to be done to target the resource inefficiency problem of

devices being made, used and disposed of in a short time frame. This is particularly problematic for smaller devices, whose carbon emissions are concentrated in the production stages.

Split of CO2 emissions over lifecycle of consumer electronic products



Source: HSBC Asset Management research, from consumer electronics company annual reports 2020-2021. Reflects best practice disclosures in tech hardware sector.

Where may opportunities for investors present themselves?



There is a need for high quality recycling, whereby devices genuinely at the end of their usable lives are deconstructed safely and efficiently. We see interesting developments in mass scale robotic recycling where individual components of devices are salvaged for reuse. This eliminates the need for devices to be deconstructed, at great energy cost, into base raw materials for full reworking into new parts.

Extending the product lifecycle and reusing materials lies at the heart of the transition to a circular economy. Emerging industries aligned with the shift to circular electronics include specialist reuse and resale platforms, which enable consumers to monetise old devices and/or buy second-hand ones. These platforms have invested heavily in product inspection, data privacy, and quality classification, removing barriers to consumers releasing old tech, and buying second-hand instead of new.

An overwhelming four-fifths of those who have purchased pre-owned, repaired, or renewed products plan to continue to do so⁴. A consequence of a shift in preferences towards reselling and second-hand buying is greater consumer attention to design

quality, as even when buying new, the consumers know they are likely to sell again one day. A focus on durability and the larger customer journey can create opportunities for electronics producers, along with the enablers such as reuse and resale platforms. The benefits extend beyond opportunities to grow sales and improve the bottom line. In addition to clear improvement in environmental outcomes, circularity brings direct social benefits. For instance, resale platforms with a global remit can sell devices into lower income countries, thus widening access to high quality technology hardware globally. For investors, prioritising companies' environmental and societal impact can ensure exposure to leaders of tomorrow's economy.

4. IBM Institute for Business Value, 2020. Research Insights Report – Meet the 2020 consumers driving change

Glossary

ESG: a set of Environmental, Social and Governance criteria that investors can apply to analyse and identify material risks and growth opportunities in investments.

Linear economy: a traditional model where raw materials are mined and transformed into products that consumers use until discarding them as waste.

Circular economy: a closed loop model based on the reuse and regeneration of materials or products. It reduces material use, redesigns materials/products/services to be less resource intensive, and recaptures 'waste' as a resource to manufacture new items.

Carbon emissions: are emissions stemming from the burning of fossil fuels during any kind of manufacturing processes.



Oliver Wilcock
HSBC Asset Management
ESG Stewardship Analyst



Travis Tucker
HSBC Asset Management
Research & Insights
Senior Manager

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