



04. An Interdisciplinary Approach to Circularity

Circular Economy in Sustainable Finance: Business Resilience Through Circular Models

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As we look to the future, the availability of virgin materials is becoming increasingly uncertain. Critical raw materials, essential for industries like technology, construction, and manufacturing, are under pressure due to geopolitical dependencies and finite global reserves. This growing scarcity demands innovative business strategies for resource efficiency and resilience. The role of *sustainable finance*, where we *study investment decisions, business models, valuation, and reporting of sustainability* becomes paramount, emphasizing its potential to ensure business stability and long-term profitability. Besides the environmental imperatives, many economic and strategic imperatives exist for companies to adopt circular business models. This shift is *an ethical choice and a business necessity* for thriving in a resource-constrained future.

One of the most prominent circular business models is *Product-Service Systems* also known as *PSS*. *PSS shifts the focus from selling products to delivering services*, allowing companies to maintain ownership of materials while providing customer value. A prime example of PSS in action is leasing or subscription-based models for equipment or infrastructure. Here, the company retains control over the product lifecycle, ensuring high recovery rates of valuable materials. This secures resource availability and reduces cost volatility—a key benefit in sectors reliant on critical raw materials.

The role of Regulations

Regulations significantly affect business models. Over the past years, several rules related to the circular use of materials and resources have emerged, facilitating the development and adoption of circular business models.

The Critical Raw Material Act (CRMA) and the *Corporate Sustainability Reporting Directive (CSRD)* are two examples of those regulations. The former tries to make Europe more self-reliant on certain materials by *boosting recycling and securing the supply chain*. The CSRD on the other hand, is a *reporting obligation* that informs the world, as it is publicly available, how your company is dealing with sustainability and how it is using its capital to become more sustainable from an Environmental, Social, and Governance perspective.

These two thus provide companies with both a framework and an incentive to adopt circular models. These regulations emphasize traceability and accountability where businesses have to measure and optimize resource usage by mandating material reporting and supply chain transparencies. Other mechanisms like Emission Trading System allow companies to lower costs and gain competitive advantages by reducing their carbon footprint, which often aligns with circular



Circularity for Educators

practices like material reuse.

The role of Data and Valuation

Data and valuation are pivotal in creating certainty and mitigating risks in transitioning to circular business models. When a company is looking for investors, those investors want to ensure their investment is safe. Can the company still produce its products in the future? Will there still be a market? How will regulation influence the pricing of the product? All questions determine a company's value and willingness to invest from the investors. For companies, the ability to track, quantify, and report on resource flows and emissions offers valuable insights into operational efficiencies and supply chain vulnerabilities, answering the investors' questions. From a financial perspective, these metrics provide a more comprehensive understanding of a company's value—not just in terms of market capitalization or short-term stock prices, but its long-term resilience and alignment with sustainability goals.

Moreover, *integrating evidence-based (data-driven) valuation models allows for a better assessment of product lifecycle costs and true value.* This includes factors beyond the market price, such as *(durability, recyclability, and embedded resource scarcity)*. Investors and stakeholders increasingly focus on these aspects to evaluate companies' readiness for a resource-constrained future, ensuring alignment between financial performance and sustainable practices. This more profound understanding of value enhances trust and attractiveness to customers and investors.

Transitioning to a circular economy is no longer

just an environmental imperative; it is an economic strategy that ensures businesses stability and mitigates supply chain risks, aligning with global regulations. By embracing models like product-service systems, companies can redefine profitability through sustainability.

By integrating Product-Service Systems (PSS) principles, adapting valuation techniques, and aligning with regulatory frameworks like the Critical Raw Materials Act, the CSRD, and the Emission Trading System, companies can safeguard their supply chains, reduce dependency on virgin resources, and enhance their financial sustainability.