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Circular economic systems and political economy: Institutional participation and good governance for macroeconomic stability

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Abstract
The circular economy, an economic model aimed at minimizing waste and maximizing resource efficiency, contrasts with the traditional linear economy of take-make-dispose. This model's implementation hinges significantly on the political economy framework, which shapes policies and regulatory mechanisms crucial for its adoption and success. Institutions play pivotal roles in crafting and enforcing policies that promote sustainable practices, resource conservation, and innovative recycling technologies. Effective participation ensures that diverse perspectives and expertise contribute to the development and implementation of comprehensive circular economy strategies. Good governance, characterized by transparency, accountability, and inclusivity, is essential in this context. Political will, institutional commitment, and governance excellence must synergize to navigate the challenges and harness the benefits of a circular economic system. This holistic framework not only advances environmental sustainability but also fortifies the economic foundations, paving the way for long-term stability and prosperity.

Keywords: Political economy, macroeconomic, stability, resource, circular economic

1. Introduction

The political economy includes a wide array of tools and methods primarily derived from the economic, political, legal, and sociological frameworks of a country (Ringen, 2017) [1]. The circular economy, on the other hand, refers to an economic model centered on the recycling and restoration of resources or goods, promoting sustainable and environmentally conscious production. This approach complements the broader macroeconomic landscape (Clift *et al.*, 2022) [2]. The diversified and multidimensional nature of political economic theory intertwines with various economic systems, including laissez-faire economy, Marxist economics, nationalist economy, mixed economy, free market economy, circular economy, neoliberalism, behavioral economics, gig economy, neuroeconomics, Islamic economy, Jewish economy, Buddhist economy, Hindu economics, geoeconomics, mesoeconomics, tourism economics, transitionary economics, and binary economics, among others (Ali & Vargas-Hernandez, 2024) [3].

Institutional development is essential for good governance in a country. In Bangladesh, this necessitates substantial, planned, and participatory democracy (Waheduzzaman, 2010) [4]. Through institutional participatory governance and democratization, explanatory variables related to nature, society, and technology are experiencing shifts in perception and pace, especially during turbulent periods. Good governance, coupled with institutionalization, fosters growth with equity, expands the formal sector, promotes social justice, and reduces income inequality (Trondal *et al.*, 2022) [5].

Institutional participatory governance also safeguards cultural diversity and enhances the democratization process. Acemoglu (2019) [6] asserts that democracy positively impacts GDP per capita. As a democratic nation, Bangladesh's citizens are achieving development goals and expressing satisfaction with the Sheikh Hasina regime. Following the national election on January 7, 2024, Sheikh Hasina formed the government for the fifth time. Participatory processes in governmental spaces are frequently scrutinized and debated for their democratic, deliberative, and direct nature.

Such participatory engagement processes can revitalize and complement traditional forms of representative democracy. Initiatives that foster participation tend to link citizens with the state through various innovative forms, including participatory democracy, deliberative democracy, and empowering participatory governance (Hertting & Kugelberg, 2022) [7].

The Schumpeterian theory of democracy, as noted by Elliott (1994) [8], recognizes the parallel efforts of activists in civil society and political reformers, leading to changes in how government officials and citizens engage. Many participatory governance institutions are experimental attempts to address and reform democratic deficits in electoral democracies. These initiatives contrast with traditional representative participation forms, where citizens elect their representatives, and other forms of direct participatory democracy.

The debate surrounding the principle of democratic representation provides a framework for analyzing institutional participatory governance. The efficiency of decision-making processes in representative democracies is a contentious topic among social scientists, including governance and democracy theorists and researchers (Creighton, 2005) [9]. Emerging participatory governance arrangements reflect a diverse and evolving phenomenon, moving away from technocratic governance towards creating new political spaces. These spaces either replace or supplement traditional forms of representative participation through scientific expertise, political representation, and elections (Verlinghieri *et al.*, 2024) [10]. The World Bank (2022) [11] reports through the Worldwide Governance Indicators project, which provides aggregate and individual governance indicators for over 200 countries and territories from 1996 to 2021, covering six dimensions of governance: voice and accountability; political stability and absence of violence/terrorism; government effectiveness; regulatory quality; rule of law; and control of corruption. Fung and Wright (2001) [12] argued that the institutional forms of liberal democracy developed in the 19th century may not effectively address the problems of the 21st century.

However, the Kuki-Chin National Front (KCNF) has emerged as a destabilizing force, especially in the hill tract areas of Bangladesh. Activities such as looting, rape, robbery, terrorism, insurgency, fundamentalism, militancy, theft, burglary, and vandalism have become prevalent. Once an artist aspiring to join the Bangladesh Parliament, the leader of the KCNF has transformed into a radicalized criminal. This individual progressed from artist to writer, and then to militant trainer, aligning with radical Islamic militants, as reported by newspapers (Ali & Vargas-Hernandez, 2024) [3].

2. The Role of Political Economy in Circular Systems

The political economy plays a crucial role in shaping and facilitating the transition to circular economic systems. This involves a multifaceted approach that integrates economic policies, political structures, legal frameworks, and sociological considerations to create a supportive environment for circular practices. Here's an in-depth look at how the political economy influences circular systems

2.1 Policy and Regulation

Effective policies and regulations are essential to advancing circular economic systems, fostering sustainability, and reducing waste. Governments play a key role in shaping these systems by creating a regulatory environment that encourages both businesses and consumers to adopt circular practices. Financial incentives, such as tax breaks or subsidies, can motivate companies to invest in sustainable initiatives like recycling, remanufacturing, and eco-friendly product design (Lawal, 2024) [13]. Regulatory frameworks, including laws such as Extended Producer Responsibility (EPR), mandate that manufacturers take responsibility for their products throughout their life cycles, ensuring they are recycled or disposed of sustainably. Additionally, the development of standards and certification programs helps ensure that products meet rigorous environmental and sustainability criteria, driving the shift toward a more resource-efficient economy (Tumu *et al.*, 2023) [14].

2.2 Institutional Support

The development and strengthening of institutions are crucial for successfully implementing and monitoring circular economy initiatives, as they provide the structure and oversight necessary to drive long-term change. A key aspect of this is the establishment or empowerment of government agencies focused on sustainability and circular economy practices. These agencies play a central role in coordinating efforts across sectors, ensuring that policies are effectively enforced, and setting clear guidelines for businesses and consumers to follow. They also monitor progress and adapt strategies to emerging challenges and opportunities (Velenturf & Purnell, 2021; Pusz *et al.*, 2024) [15, 16].

Equally important is fostering public-private partnerships, where collaboration between government entities, private companies, and non-governmental organizations (NGOs) can spark innovation and facilitate the exchange of best practices (Bhatia & Kaur, 2024) [17]. Such partnerships can accelerate the adoption of circular economy principles by pooling resources, expertise, and technologies. This approach helps bridge gaps in knowledge and infrastructure, allowing for more cohesive and scalable solutions. Another essential component is the investment in research and development (R&D). Supporting R&D initiatives helps to advance technologies and methods that underpin the circular economy, such as innovations in recycling processes, resource-efficient product design, and renewable energy systems. By promoting R&D, governments and institutions can ensure the continuous evolution of circular economy practices, enabling the transition from traditional linear models to more sustainable, regenerative ones. Together, these institutional efforts form the backbone of a thriving circular economy, ensuring its growth and effectiveness across industries (Avdiushchenko & Zajac, 2019; Garrido-Prada *et al.*, 2021) [18, 19].

2.3 Economic Incentives

The political economy can leverage a range of economic tools to promote the transition to circular systems, driving sustainability by influencing market behaviors and resource use (Awan & Sroufe, 2022) [20]. One key approach is the use of market-based instruments, which are designed to internalize the environmental costs of economic activities. Tools such as carbon pricing, pollution taxes, and tradable permits help create financial incentives for businesses to adopt more sustainable practices. By attaching a cost to activities that generate emissions or waste, these instruments encourage companies to minimize their environmental footprint, promoting recycling, resource efficiency, and renewable energy use (Shen & Faure, 2024) [21].

Additionally, financial mechanisms play a vital role in supporting the growth of circular economy initiatives. Access to financing is crucial for businesses and startups looking to innovate in areas such as sustainable product design, waste reduction, and resource recovery. Green bonds, for example, provide funding for environmentally focused projects, while low-interest loans and venture capital can help circular economy startups scale their operations and develop cutting-edge technologies (Aranda-Uson *et al.*, 2019; Jaiwant & Kureethara, 2023) [22, 23]. By creating favorable financial conditions, governments and institutions can drive investments into circular systems, fostering a market environment where sustainable innovations can thrive and contribute to a more resource-efficient economy.

2.4 Education and Awareness

Raising awareness and educating the public about the benefits and practices of a circular economy are essential for driving widespread adoption and long-term success (Velenturf & Purnell, 2021) [15]. Political and economic systems can play a pivotal role in supporting these efforts by engaging with consumers, businesses, and the education sector (Jongbloed *et al.*, 2008) [24]. Public campaigns are one such tool, aimed at increasing awareness around the importance of reducing waste, recycling, and making more sustainable choices. These campaigns can reach a wide audience through various media channels, encouraging individuals and businesses to rethink their consumption patterns and prioritize products designed with sustainability in mind (Cuc & Secan, 2024) [25].

Another critical approach is integrating circular economy principles into educational curricula at all levels. By introducing concepts such as resource efficiency, waste reduction, and sustainable product design to students from an early age, a culture of sustainability can be fostered (Al-Saud *et al.*, 2024) [26]. Educating future generations about the environmental and economic benefits of circular systems helps create informed citizens who are more likely to support and participate in these initiatives. Additionally, it prepares the workforce with the skills and knowledge needed to drive innovation in circular industries, contributing to the growth of a green economy (Muaddab, 2024) [27]. Together, public campaigns and curriculum integration form a powerful strategy for embedding circular economy values into society, ensuring that individuals and businesses are equipped to play an active role in the transition toward sustainability.

2.5 Stakeholder Engagement

Engaging a wide range of stakeholders businesses, consumers, NGOs, and local communities is essential for the successful implementation and growth of circular systems. This approach ensures that the transition to a circular economy is inclusive, reflecting the diverse needs and perspectives of all those affected. One key element is inclusive policy-making, where decision-making processes actively seek input from different groups. By involving stakeholders in the development of policies, governments can design more effective and equitable regulations that encourage participation from all sectors, fostering a sense of ownership and commitment to circular initiatives (Souza Piao *et al.*, 2024) [28].

Another important aspect is the creation of collaborative platforms, where stakeholders can come together to share knowledge, exchange best practices, and coordinate their efforts. These platforms provide opportunities for businesses, policymakers, NGOs, and local communities to engage in dialogue, work through challenges, and build consensus on key issues related to circular economy initiatives. Such collaboration can drive innovation, streamline the implementation of circular systems, and ensure that the transition is aligned with the social, economic, and environmental goals of the broader community. By fostering inclusivity in policy-making and encouraging collaboration, a wide range of stakeholders can be mobilized to support circular economy systems, ensuring a more comprehensive, resilient, and sustainable approach to resource management and waste reduction (Ansell & Gash, 2018) [29].

2.6 Global and Regional Cooperation

Given the interconnected nature of modern economies, international cooperation is vital for the successful implementation of circular economic systems. Global challenges such as resource depletion, environmental degradation, and climate change require a coordinated approach that transcends national borders (French, 2019) [30].

One way to foster this cooperation is through trade agreements that promote the exchange of sustainable technologies and environmentally friendly products. These agreements can also discourage harmful practices, such as the export of waste to countries with less stringent environmental regulations. By aligning trade policies with circular economy goals, countries can facilitate the global flow of innovations and materials needed to support circular systems.

Another crucial aspect is the development of international standards and practices that ensure consistency and effectiveness in circular economy efforts across borders. By collaborating on shared guidelines for recycling, resource management, and sustainable product design, countries can create a more level playing field that encourages businesses and industries to adopt circular practices regardless of where they operate (Han *et al.*, 2022) [31]. International standards also make it easier for companies to enter new markets and for consumers to make informed choices about sustainable products, fostering a global shift toward resource-efficient systems (Majid *et al.*, 2023) [32].

In addition, development aid and technical assistance play a significant role in supporting countries, particularly in developing regions, that are transitioning to circular economies. Providing financial resources, technology transfers, and capacity-building initiatives can help these countries overcome barriers such as lack of infrastructure or expertise, ensuring that the global move toward circular systems is inclusive and equitable. By integrating trade agreements, international standards, and development aid into a comprehensive strategy, nations can work together to build a more sustainable and resilient global economy (Tleuken *et al.*, 2022) [33].

2.7 Monitoring and Evaluation

Continuous monitoring and evaluation are critical for assessing the effectiveness of circular economy policies and practices, ensuring that these systems evolve to meet environmental, economic, and social goals. Political and economic systems can support this by establishing robust frameworks for data collection and analysis. Collecting accurate data on resource use, waste generation, recycling rates, and other relevant factors is essential to track progress over time. By analyzing this data, policymakers and businesses can identify trends, assess the impact of circular initiatives, and pinpoint areas in need of improvement, enabling more informed decision-making and strategic adjustments (Guerra & Leite, 2021) [34].

Developing key performance indicators (KPIs) is another vital component of effective monitoring. KPIs provide measurable benchmarks to evaluate the success of circular economy initiatives across multiple dimensions. For instance, KPIs might focus on reductions in waste, improvements in resource efficiency, or the economic and social benefits derived from circular systems. These metrics help ensure that circular economy practices not only meet environmental objectives but also contribute to broader sustainability and economic development goals (Papamichael *et al.*, 2023) [35].

Transparency and accountability are equally important in building trust and credibility among stakeholders. Clear, transparent reporting on the outcomes of circular economy policies enables governments, businesses, and the public to see how well initiatives are performing and where improvements are needed. Holding responsible parties accountable for implementing these policies ensures that commitments to sustainability are upheld. By fostering transparency and accountability, political and economic systems can encourage ongoing engagement and trust, reinforcing the long-term success of circular economy efforts (Swift, 2001; Efunniyi *et al.*, 2024) [36, 37]. the political economy is integral to the successful implementation of circular economic systems. By creating a supportive policy environment, fostering institutional development, providing economic incentives, raising awareness, engaging stakeholders, promoting international cooperation, and ensuring robust monitoring and evaluation, political and economic frameworks can drive the transition towards more sustainable and resilient economies.

3. Institutional Participation: Key Players and Stakeholders: The transition to a circular economy involves a diverse array of key players and stakeholders, each playing a crucial role in driving and supporting the shift towards sustainable economic practices. Understanding who is involved and how they contribute is essential for successful implementation and collaboration. Here's a detailed look at the main participants:

3.1 Government Bodies: Government bodies at all levels play a central role in driving the transition to a circular economy by creating, enforcing, and promoting policies, regulations, and incentives that encourage circular practices. National governments are responsible for setting the overall direction by formulating comprehensive national strategies that align with environmental and economic goals. They establish the regulatory frameworks necessary to guide circular practices, such as laws that mandate recycling or resource efficiency (Forsterling *et al.*, 2023) [38]. In addition to regulations, national governments provide essential funding and incentives such as subsidies, tax breaks, or grants that motivate businesses and industries to adopt circular innovations and invest in sustainable technologies. Local governments, on the other hand, are at the forefront of implementation. They manage waste collection, recycling programs, and resource recovery efforts, ensuring that circular economy practices are effectively applied at the community level. Local governments also engage directly with citizens and businesses, raising awareness about sustainable practices and fostering a culture of reuse, repair, and recycling (Klein *et al.*, 2020) [39]. Through local policies and initiatives, they can adapt national strategies to meet the specific needs of their communities, providing a practical framework for circular activities on the ground.

Regulatory agencies play a crucial role in ensuring compliance with environmental regulations and circular economy goals. These agencies are tasked with monitoring and enforcing laws related to waste management, resource use, and sustainability. They certify companies and products that meet established environmental standards, helping to build trust and ensure that circular practices are being followed (Das *et al.*, 2019) [40]. By tracking progress and ensuring accountability, regulatory agencies contribute to the effective implementation of circular economy policies, helping governments meet their sustainability objectives at both the national and local levels (Chen *et al.*, 2020) [41].

3.2 Businesses and Corporations

Businesses play a pivotal role in adopting and implementing circular economy principles within their operations and supply chains, as they are directly responsible for how resources are used, products are designed, and waste is managed. Manufacturers are at the forefront of this shift, tasked with redesigning products to ensure they are more durable, repairable, and recyclable. By focusing on sustainable materials and reducing waste during production, manufacturers can extend product lifecycles and minimize environmental impact (Perey *et al.*, 2018) [42]. This approach not only contributes to sustainability but also creates new business opportunities through innovative product offerings.

Retailers also play a significant role by promoting and selling circular products, encouraging consumers to make more sustainable choices. They can educate their customers about the environmental benefits of circular products and implement take-back schemes, where used items are returned for recycling or refurbishment. Such initiatives help close the loop by ensuring products are reintegrated into the production cycle, rather than ending up in landfills (Chamberlin & Boks, 2018) [43].

Service providers contribute to the circular economy by offering repair, refurbishment, and remanufacturing services, which extend the lifespan of products. These services help consumers maintain and repair items, reducing the need for new purchases and limiting resource consumption (Bakker *et al.*, 2021) [44]. By making these services more accessible, businesses can reduce waste and contribute to a culture of reuse.

Startups and innovators are essential drivers of the circular economy, developing new technologies and business models that make circular practices more efficient and scalable. Whether through advancements in recycling technology, digital platforms for sharing or leasing products, or creating entirely new approaches to resource use, startups can accelerate the adoption of circular principles across industries. Their creativity and agility enable them to explore novel solutions, pushing the boundaries of what is possible in sustainable business practices (Lit *et al.*, 2024) [45]. Together, these efforts from manufacturers, retailers, service providers, and innovators form a comprehensive approach to embedding circular economy principles into business models, ultimately contributing to a more sustainable and resource-efficient economy.

3.3 Non-Governmental Organizations (NGOs)

Non-governmental organizations (NGOs) play a crucial role in promoting circular economy practices, advocating for systemic change, raising awareness, and supporting the implementation of circular initiatives. Through their advocacy, research, education, and partnerships, NGOs help bridge the gap between policy, industry, and local communities, driving the adoption of sustainable practices across society.

Environmental NGOs are at the forefront of advocating for circular economy principles. They campaign for policy changes at both the national and international levels, pushing governments to adopt regulations that promote resource efficiency, reduce waste, and encourage recycling. These organizations also play a key role in educating the public about the environmental and economic benefits of a circular economy. By holding businesses and governments accountable for their sustainability commitments, environmental NGOs foster greater transparency and encourage the adoption of responsible practices across industries (Dagiliene *et al.*, 2021) [46].

Industry associations, as NGOs focused on specific sectors, provide essential guidance and resources to businesses navigating the transition to circular models. They promote best practices by offering tools, frameworks, and case studies that showcase successful circular economy strategies. Additionally, industry associations facilitate collaboration between companies, helping them share knowledge and innovations that drive sustainability across entire supply chains (Hofmann, & Jaeger-Erben, 2020) [47].

Community organizations engage directly with local communities to promote grassroots initiatives that support circular economy practices at the neighborhood level. These groups often play a hands-on role in supporting local recycling programs, repair workshops, and other community-driven projects that reduce waste and encourage reuse. By empowering individuals and small businesses to take part in the circular economy, community organizations contribute to creating a culture of sustainability from the ground up. Together, these NGOs act as catalysts for the circular economy, leveraging their expertise, influence, and networks to support policy development, business innovation, and community engagement, ultimately driving a more sustainable and inclusive transition to circular systems.

3.4 Academia and Research Institutions

Academic and research institutions play a vital role in advancing the transition to a circular economy by generating knowledge, developing innovative technologies, and providing data-driven insights that inform policies and practices. Their contributions are essential for creating a robust foundation upon which circular economy initiatives can be built (Medaglia *et al.*, 2024) [49]. Universities and colleges are at the forefront of research on circular economy topics, exploring everything from sustainable materials and product design to waste management and resource recovery. Through their research efforts, they generate valuable insights that inform both policy and practice, helping to bridge the gap between theory and application. Additionally, these institutions develop educational programs that equip students and professionals with the knowledge and skills needed to implement circular economy principles effectively. Collaborations between universities, industry, and government can lead to practical solutions that address real-world challenges, fostering innovation and driving the adoption of circular practices across sectors (Hariyani *et al.*, 2024) [48].

Think tanks and research institutes also play a critical role in supporting the transition to a circular economy. They analyze existing policies and assess their economic impacts, providing evidence-based recommendations for effective implementation. By evaluating the outcomes of circular economy initiatives and identifying best practices, these organizations help guide policymakers in creating supportive regulatory environments. Their research contributes to a better understanding of the economic, social, and environmental benefits of circular systems, promoting informed decision-making at all levels of government and industry.

3.5 Consumers and the Public

Consumers are pivotal in driving the demand for circular products and services, as their purchasing decisions and behaviors significantly influence market trends and business practices. Their choices can accelerate the transition to a circular economy by prioritizing sustainability and resource efficiency (Vidal-Ayuso *et al.*, 2023) [50]. Individual consumers have the power to make impactful decisions by choosing sustainable products over traditional options. By actively participating in recycling and reuse programs, they contribute to reducing waste and fostering a culture of sustainability. Additionally, consumers can advocate for circular practices by supporting businesses that prioritize environmentally friendly practices and transparency. Their collective demand for circular products encourages companies to innovate, redesign their offerings, and adopt more sustainable practices to meet consumer expectations.

Community groups also play a crucial role in promoting circular economy principles at the local level. These organizations can organize initiatives such as community clean-ups, repair workshops, and swap events that encourage members to engage with circular practices. By educating their members about the benefits of recycling, reusing, and reducing waste, community groups foster a sense of responsibility and collective action (Spekkink *et al.*, 2022) [51]. They often support local projects that align with circular economy goals, empowering residents to take ownership of their environmental impact and contribute to sustainable development in their communities. Individual consumers and community groups create a powerful force for change, driving demand for circular economy initiatives and promoting sustainable practices. Their engagement not only influences market dynamics but also cultivates a broader cultural shift towards sustainability, making circular economy principles a foundational aspect of everyday life.

3.6 Financial Institutions

Financial institutions play a critical role in facilitating the transition to a circular economy by providing the necessary funding and investment for initiatives and businesses that prioritize sustainability. Their support is essential for scaling up circular practices and ensuring that innovative projects can thrive. Banks and investment firms are increasingly recognizing the importance of sustainability in their lending and investment strategies (Kumar *et al.*, 2024) [52]. They offer various financial products, including loans and grants specifically designed for circular economy projects. By developing tailored financial products that align with sustainability goals, these institutions help mitigate the risks associated with investing in innovative technologies and practices. This can include funding for businesses that focus on recycling, resource recovery, and sustainable manufacturing processes. By prioritizing investments in circular initiatives, banks and investment firms can drive capital toward projects that reduce environmental impact and promote resource efficiency.

Impact investors are another key player in this landscape, focusing on investments that generate positive social and environmental outcomes alongside financial returns. These investors seek to support businesses and projects that contribute to the circular economy by prioritizing sustainable practices and long-term viability (Ormiston *et al.*, 2015; Ozili, 2021) [53, 54]. By directing capital to organizations that align with their values, impact investors can catalyze change and encourage the development of innovative solutions that address pressing environmental challenges.

Together, banks, investment firms, and impact investors create a supportive financial ecosystem for circular economy initiatives. By providing the necessary funding and developing tailored financial products, these institutions not only enable businesses to implement sustainable practices but also help to establish circular economy principles as a viable and attractive investment opportunity. This financial backing is essential for driving the transition to a more sustainable, resource-efficient economy (Ozili, 2021) [54].

3.7 International Organizations and Multilateral Agencies: International organizations play a vital role in facilitating global cooperation, providing funding and technical assistance, and establishing international standards for circular economy practices. Their efforts are crucial for promoting sustainability on a global scale and ensuring that countries can effectively transition to circular models.

The United Nations (UN) is at the forefront of promoting circular economy principles through initiatives like the Sustainable Development Goals (SDGs) (Brandao & Verissimo, 2024) [55]. These goals emphasize the importance of sustainable consumption and production patterns, encouraging countries to adopt practices that reduce waste and improve resource efficiency. The UN also provides a platform for international collaboration, enabling member states to share best practices, strategies, and experiences in implementing circular economy initiatives. By fostering dialogue among nations, the UN helps create a cohesive global approach to sustainability (Klein *et al.*, 2020) [39].

The World Bank and the International Monetary Fund (IMF) also play significant roles in supporting countries transitioning to circular economies. They offer financial support, including grants and loans, to fund projects that align with circular economy principles. Additionally, these institutions provide policy advice and technical assistance to help countries design effective regulations and frameworks that promote circular practices. Their expertise and resources are essential for guiding nations through the complexities of transitioning from linear to circular economic models (Tleuken *et al.*, 2022) [33].

Regional organizations, such as the European Union (EU), implement specific policies and programs to support circular economy practices across member states. The EU has developed a comprehensive Circular Economy Action Plan that outlines strategies to enhance resource efficiency, reduce waste, and promote sustainable product design within its member countries. By harmonizing regulations and standards, the EU fosters collaboration among nations, creating a unified approach to sustainability that can serve as a model for other regions (Cudecka-Puriņa *et al.*, 2022) [56]. These international organizations play a critical role in advancing the circular economy globally. By promoting cooperation, providing financial support, and establishing standards, they help countries navigate the transition toward more sustainable practices, ensuring that the benefits of a circular economy are realized on a worldwide scale.

3.8 Media and Communication Outlets

Media organizations and communication outlets are instrumental in raising awareness and educating the public about the circular economy, serving as vital conduits for information and engagement. Their efforts help to foster understanding and support for circular practices among consumers, businesses, and policymakers. News outlets play a critical role by reporting on developments in the circular economy, including successes, challenges, and innovative practices from various sectors. They provide comprehensive coverage of initiatives, policies, and case studies that highlight the importance of transitioning to a circular economy (Dash & Dash, 2019) [57]. Through investigative journalism and feature stories, news organizations can shed light on the environmental impacts of waste and resource depletion, as well as showcase successful circular economy projects that serve as models for others. By providing a platform for public debate and discussion, news outlets encourage dialogue among stakeholders, fostering greater awareness and engagement around sustainability issues.

Social media has transformed the way information is shared and consumed, facilitating the rapid dissemination of knowledge about the circular economy. Social media platforms enable organizations, activists, and individuals to engage with a wide audience, spreading awareness of circular practices and encouraging grassroots initiatives. Through campaigns, informative posts, and interactive content, social media can inspire consumers to make sustainable choices and participate in circular activities, such as recycling, upcycling, or supporting local businesses that prioritize sustainability. Furthermore, social media serves as a space for collaboration and networking, allowing stakeholders to share best practices and connect with like-minded individuals and organizations (Leong *et al.*, 2019) [58]. News outlets and social media platforms play a crucial role in shaping public perceptions and understanding of the circular economy. By raising awareness, facilitating dialogue, and promoting community engagement, media organizations help drive the momentum needed for widespread adoption of circular practices, ultimately contributing to a more sustainable future.

The transition to a circular economy is a collaborative effort involving a wide range of stakeholders. Each group, from government bodies to individual consumers, plays a unique and vital role in supporting and advancing circular practices. By working together, these key players can create a more sustainable, resilient, and inclusive economic system.

4. Macroeconomic Stability through Circular Economy Linking Circularity and Economic Health

The circular economy (CE) model offers a sustainable alternative to the traditional linear economy by focusing on resource efficiency, waste reduction, and the continuous use of materials. Integrating circular economy principles can significantly enhance macroeconomic stability. Here's how linking circularity with economic health contributes to broader economic stability:

4.1 Resource Efficiency and Cost Savings

Resource efficiency and cost savings are critical components of a circular economy that provide significant benefits for businesses and the broader economy. By minimizing reliance on finite resources and promoting the reuse of materials, a circular economy reduces resource dependency, thereby mitigating the risks associated with resource scarcity and price volatility. This shift not only helps stabilize supply chains but also encourages more sustainable consumption patterns (Sehnem *et al.*, 2019) [59]. Moreover, businesses can achieve substantial operational cost savings by optimizing resource use, enhancing waste management practices, and adopting energy-efficient technologies. These improvements not only lower operational costs but also contribute to enhanced profitability and economic resilience, allowing companies to navigate market fluctuations more effectively. In this way, the circular economy fosters a more sustainable economic model that benefits both individual businesses and society at large.

4.2 Waste Reduction and Economic Benefits

Waste reduction is a fundamental principle of the circular economy that brings substantial economic benefits. By decreasing waste generation, businesses and municipalities can significantly lower waste management costs, alleviating the financial burden on public services and enhancing operational efficiencies. This reduction in waste not only streamlines disposal processes but also contributes to more sustainable urban environments. Furthermore, the concept of value recovery plays a pivotal role in economic growth within a circular economy. Through recycling and upcycling processes, waste can be transformed into valuable secondary raw materials, creating new economic opportunities and revenue streams (Kumar *et al.*, 2024) [60]. This transformation not only reduces the demand for virgin materials but also fosters innovation and job creation in sectors focused on waste processing and sustainable product development. Ultimately, waste reduction not only conserves resources but also stimulates economic activity, demonstrating that environmentally responsible practices can align with economic interests.

4.3 Job Creation and Economic Diversification

The circular economy is a powerful catalyst for job creation and economic diversification. By fostering new employment opportunities in sectors such as recycling, remanufacturing, repair services, and sustainable product design, it not only addresses environmental challenges but also provides meaningful work for individuals (Weetman, 2016) [61]. These jobs can play a significant role in diversifying the economy and reducing unemployment, particularly in communities facing economic hardship. Furthermore, the circular economy offers robust support for small and medium-sized enterprises (SMEs), which can thrive by providing innovative circular solutions tailored to local needs (Maher *et al.*, 2023) [62]. This focus on SMEs contributes to economic dynamism and resilience, as these businesses often drive innovation and adaptability within their markets. Overall, the circular economy not only enhances environmental sustainability but also builds a more inclusive and resilient economic landscape, creating pathways for growth and opportunity across various sectors.

4.4 Innovation and Competitiveness

Embracing circular economy principles stimulates innovation across multiple dimensions, particularly in product design, manufacturing processes, and business models. By prioritizing sustainability, companies are motivated to develop new products that are not only eco-friendly but also more functional and durable. This culture of innovation enhances a country's competitiveness in the global market, allowing businesses to differentiate themselves and capture new customer segments (Christofi *et al.*, 2024) [63]. Furthermore, increased investment in research and development (R&D) for circular technologies and practices plays a critical role in driving economic growth and technological advancement. By fostering a robust R&D ecosystem, countries can develop cutting-edge solutions that reduce waste, improve resource efficiency, and promote sustainable practices. This not only creates new market opportunities but also positions nations as leaders in the transition to a sustainable economy, ultimately contributing to long-term economic resilience and prosperity.

4.5 Sustainable Consumption and Production

Sustainable consumption and production are crucial components of the circular economy that drive both economic growth and environmental stewardship. Enhanced consumer demand for sustainable products is a significant trend, as increasing awareness of environmental issues leads consumers to prefer circular goods and services. This shift not only stimulates economic activity in sectors focused on sustainability but also encourages businesses to innovate and align their offerings with consumer values (Ghisellini *et al.*, 2016) [64]. Moreover, designing products for longevity emphasizing durability, reparability, and upgradability plays a pivotal role in fostering more sustainable consumption patterns. By reducing the need for frequent replacements, consumers can enjoy long-term cost savings while minimizing waste generation. This approach not only benefits individual consumers but also contributes to a more sustainable economy, promoting a cycle of responsible production and consumption that ultimately enhances resource efficiency and reduces environmental impact.

4.6 Resilience to Economic Shocks

Resilience to economic shocks is a vital advantage of adopting circular economy practices. By emphasizing local sourcing and implementing closed-loop supply chains, businesses can enhance supply chain stability, thereby reducing their dependence on global networks that are often vulnerable to disruptions, such as geopolitical tensions or natural disasters. This localization not only mitigates risks associated with supply chain interruptions but also supports local economies and communities. Additionally, the adaptability and resource efficiency inherent in circular systems contribute to greater economic flexibility (Ibn-Mohammed *et al.*, 2021) [65]. These systems enable businesses and economies to respond swiftly to changes in market conditions, consumer preferences, or environmental challenges. As a result, economies become better equipped to withstand economic shocks, fostering a more resilient framework that can navigate uncertainties while promoting sustainable growth. Ultimately, integrating circular economy principles enhances the overall stability and robustness of economic systems, enabling them to thrive in an increasingly complex and dynamic world.

4.7 Policy and Regulatory Support

Policy and Regulatory Support is essential in fostering a transition to a circular economy, which can significantly contribute to macroeconomic stability. Governments can incentivize circular practices through various mechanisms, such as implementing tax benefits and subsidies for green technologies, as well as establishing regulations that promote recycling and waste reduction. By creating a supportive policy environment, governments encourage businesses and consumers to adopt sustainable practices that align with circular economy principles. Additionally, long-term planning that integrates these principles into national economic frameworks is crucial for ensuring sustainable growth and stability over time. Such policies not only facilitate resource efficiency but also encourage innovation and investment in circular solutions (Palea *et al.*, 2024) [66]. Linking circular economy principles with macroeconomic stability offers a viable pathway to sustainable economic health. By promoting resource efficiency, waste reduction, job creation, innovation, and resilience, the circular economy model underpins a stable and robust economic system. The active participation of governments, businesses, and consumers is vital in this transition, as each group plays a critical role in fostering a sustainable future that balances economic growth with environmental stewardship. Together, these stakeholders can create an ecosystem that supports both economic prosperity and the well-being of our planet.

5. Case Studies of Successful Circular Economies: Lessons from Around the World

These global case in table 1 studies illustrate that successful circular economy initiatives stem from strong government backing, effective regulations, stakeholder collaboration, and a commitment to innovation and education. By drawing lessons from these examples, other countries and regions can craft and execute their circular economy strategies, leading to sustainable economic growth and environmental resilience.

Table 1: the case studies on successful circular economies you provided:

Country/Region	Initiatives and Practices	Lessons Learned
The Netherlands	• **National Circular Economy Strategy:** Aims for full circularity by 2050, focusing on material reduction, recycling, and sustainable design. • **Amsterdam's Circular Initiatives:** Projects like Circular Amsterdam encourage the use of recycled materials and support circular business models.	• **Government Commitment:** Strong support and clear strategies are essential. • **Multi-Stakeholder Collaboration:** Engaging various stakeholders ensures success. • **Sector-Specific Approaches:** Targeting specific sectors yields significant results.
Finland	• **Sitra's Role:** The Finnish Innovation Fund promotes circular economy through a roadmap. • **Circular Economy in Education:** Principles integrated into the education system foster sustainability.	• **Innovation and Research:** Investment is crucial for developing solutions. • **Educational Integration:** Embedding concepts in education builds a knowledgeable workforce. • **National Roadmaps:** Clear goals guide transitions.
Japan	• **Extended Producer Responsibility (EPR):** Holds manufacturers accountable for product lifecycle. • **Recycling and Waste Management:** High recycling rates supported by efficient systems and public engagement.	• **Regulatory Frameworks:** Effective regulations drive adoption of circular practices. • **Public Participation:** Engaging citizens is vital for recycling success. • **Efficient Systems:** Strong waste management supports transition.
China	• **Circular Economy Promotion Law:** Legal framework for resource efficiency and waste reduction. • **Pilot Zones:** Zones like TEDA test and implement circular practices.	• Legal Frameworks: Comprehensive laws promote practices. • Pilot Projects: Allow for experimentation before wider implementation. • Scalability: Successful pilot practices can achieve national impact.
Sweden	• **Zero Waste to Landfill:** Strong focus on recycling and waste-to-energy. • **Producer Responsibility:** Policies require producers to manage end-of-life of products.	• **Waste Hierarchy:** Prioritizing reduction and recycling is crucial. • **Producer Responsibility:** Encourages sustainable design and recycling. • **Energy Recovery:** Waste-to-energy provides a renewable source.

Denmark	• **Circular Economy Strategy:** Focus on resource efficiency and sustainable business models. • **Circular Business Hub:** Supports businesses in adopting circular practices.	• **Business Engagement:** Essential for economic sustainability. • **Resource Efficiency:** Reduces waste and costs, benefiting all. • **Networking and Collaboration:** Enhances effectiveness of initiatives.

6. Challenges and Barriers to Institutional Participation: Addressing Obstacles and Resistance

Institutional participation is crucial for the successful implementation of policies and initiatives across various sectors and levels of governance. However, several challenges and barriers often hinder effective institutional participation. Addressing these obstacles is essential to foster collaboration, transparency, and accountability.

One significant challenge is the lack of political will and leadership, as political leaders may prioritize short-term gains over long-term sustainability goals, leading to inconsistent support for circular economy initiatives. To combat this, it is essential to advocate for the economic and environmental benefits of circular practices through evidence-based research and compelling case studies. Engaging political leaders early in the policy development process can also secure their commitment and foster leadership (Milios, 2021) [67].

Another barrier is the presence of complex regulatory and legal frameworks. These overlapping regulations can create confusion and bureaucratic hurdles, discouraging active participation in circular economy initiatives. Streamlining regulations and harmonizing legal frameworks is necessary to provide clarity and consistency. Developing guidelines and toolkits can simplify compliance requirements, facilitating implementation for institutions.

Financial constraints and resource limitations pose yet another challenge, as institutions may struggle to invest in circular economy practices like upgrading infrastructure or adopting sustainable technologies (Cantu *et al.*, 2021) [68]. Introducing financial incentives, subsidies, and funding mechanisms can support institutions in their transition to circular economy models. Encouraging public-private partnerships and leveraging international funding opportunities can also supplement domestic resources.

Resistance to change and institutional inertia can impede the adoption of innovative circular economy strategies. Stakeholders may fear disruptions to existing workflows or lack awareness of the benefits of circular practices. Conducting comprehensive stakeholder engagement and awareness campaigns can build understanding and buy-in for circular economy principles. Additionally, providing training and capacity-building programs can equip staff with the necessary skills and knowledge for effective implementation (Yamoah *et al.*, 2022) [69].

Fragmented stakeholder engagement is another challenge, as siloed approaches among stakeholders such as government agencies, businesses, academia, and civil society can lead to ineffective coordination and collaboration. Establishing multi-stakeholder platforms and networks can facilitate dialogue, information sharing, and joint decision-making, encouraging cross-sectoral partnerships and collaboration to leverage diverse expertise and resources (Momen, 2021) [70].

Capacity and institutional readiness are also critical challenges, as some institutions may lack the technical expertise or capacity to participate in complex circular economy initiatives. Providing training, technical assistance, and capacity-building programs tailored to institutional needs is vital. Additionally, fostering peer learning and mentorship opportunities can facilitate the sharing of experiences and best practices across institutions (**Kirchherr *et al.*, 2018) [71].** Overcoming challenges and barriers to institutional participation in circular economy initiatives requires a coordinated and strategic approach. By addressing political, regulatory, financial, cultural, and capacity-related obstacles, governments, businesses, and civil society can create an enabling environment that promotes collaboration, innovation, and sustainable development. Through effective stakeholder engagement, capacity building, and supportive policy frameworks, institutions can significantly contribute to the transition toward a more circular and resilient economy.

7. Innovative Strategies for Good Governance: Promoting Transparency, Accountability, and Participation: Good governance is essential for fostering trust, efficiency, and effectiveness in public administration. Innovative strategies that promote transparency, accountability, and participation can strengthen governance frameworks and enhance public trust. Here are several innovative approaches and practices that can be implemented:

7.1 Open Data and Transparency Platforms

Establishing open data platforms allows citizens, civil society organizations, and businesses to access government information, datasets, budgets, and procurement processes in a user-friendly format. This enhances transparency by enabling stakeholders to monitor government activities and decision-making processes. For example, the Open Government Data (OGD) platforms in countries like the United Kingdom and the United States provide extensive datasets on various government operations and public services (Susha *et al.*, 2015) [72].

7.2 Citizen Engagement and Participation

Implementing digital platforms and mobile apps can enable citizens to participate in policy consultations, budget planning, and decision-making processes. This empowers individuals to contribute their views and suggestions, fostering inclusive governance and responsive policymaking. An illustrative example is the participatory budgeting initiatives in cities like Porto Alegre, Brazil, where residents directly influence local budget allocations through participatory forums and voting (Gil *et al.*, 2019) [73].

7.3. Integrity and Anti-Corruption Measures

Utilizing technology, such as blockchain and AI, can enhance transparency in public procurement, reduce corruption risks, and improve accountability. These measures strengthen institutional integrity, decrease opportunities for corrupt practices, and enhance public confidence in government operations. For instance, Estonia's e-government system employs blockchain technology to secure and authenticate public records, ensuring transparency and integrity in digital governance (Alzoubi, 2024) [74].

7.4. Performance Monitoring and Evaluation
Developing performance dashboards and real-time monitoring systems to track key performance indicators (KPIs) allows for evidence-based decision-making. This enables governments to identify areas for improvement and enhances accountability for achieving public policy goals. The Results-Based Management (RBM) approach adopted by organizations like the World Bank emphasizes results, outcomes, and impact evaluation in project management (Picozzi *et al.*, 2024) [75].

7.5. Collaborative Governance and Partnerships
Fostering collaborative partnerships among government agencies, private sector entities, academia, and civil society organizations can co-design and implement policies and initiatives. These partnerships harness diverse expertise, resources, and perspectives to address complex challenges, promote innovation, and achieve sustainable development goals. Public-private partnerships (PPPs) in infrastructure development exemplify this approach, where private sector entities collaborate with governments to finance, build, and operate public projects (Mariani *et al.*, 2024) [76].

7.6. Digital Transformation and E-Government
Implementing e-government initiatives and digital service delivery platforms can streamline administrative processes, improve service delivery, and enhance citizen interaction. This increases administrative efficiency, reduces bureaucratic barriers, and enhances accessibility to public services, especially in remote or underserved areas. Singapore's Smart Nation initiative is a prime example, integrating digital technologies across government services, healthcare, transportation, and urban planning to improve quality of life and governance efficiency (Roy, 2027) [77].

7.7. Inclusive Policy Design and Co-Creation
Adopting inclusive and participatory approaches in policy design involves marginalized groups, indigenous communities, and vulnerable populations in decision-making processes. This ensures policies are responsive to diverse needs, promotes social equity, and builds trust and legitimacy in government actions. New Zealand's Treaty of Waitangi process illustrates this approach, where Maori communities are actively involved in policy development and implementation to honor indigenous rights and perspectives (Ahmad & Islam, 2024) [78].

7.8. Capacity Building and Institutional Strengthening
Investing in training programs, leadership development, and organizational capacity building enhances governance capabilities and promotes ethical behavior. This equips public officials with the skills, knowledge, and tools needed for effective governance, innovation, and adaptation to changing circumstances. The United Nations Development Programme (UNDP) supports capacity-building initiatives for government institutions in developing countries, strengthening governance frameworks and improving public service delivery (Vadivelu, 2024) [79]. Innovative strategies for good governance that promote transparency, accountability, and participation are crucial for building resilient and inclusive societies. By embracing digital transformation, fostering collaborative partnerships, enhancing integrity measures, and empowering citizen engagement, governments can improve their effectiveness, responsiveness, and legitimacy. These strategies not only enhance governance outcomes but also contribute to sustainable development and the well-being of communities worldwide.

8. Future Directions in Circular Economy and Political Economy: Emerging Trends and Long-term Perspectives:
The intersection of circular economy principles and political economy is increasingly shaping global policy agendas, economic strategies, and sustainable development goals. As we look towards the future, several emerging trends and long-term perspectives are expected to influence the evolution of circular economy practices and their integration into political and economic frameworks. Countries are embedding circular economy principles into their national development strategies, aiming for resource efficiency, waste reduction, and sustainable consumption, with future policies prioritizing systemic changes across energy, manufacturing, agriculture, and urban planning (Mishra *et al.*, 2024) [80]. Technological advancements, including AI, IoT, blockchain, and advanced recycling technologies, are facilitating the transition to circular business models and sustainable practices, driving the development of scalable solutions for material reuse and eco-design. Companies are adopting circular supply chain practices to enhance resilience and meet consumer demand for sustainable products, paving the way for international standards that promote circularity in global trade. Governments are expected to strengthen regulatory frameworks, introducing policies such as extended producer responsibility and eco-design standards, focusing on incentives for businesses to adopt circular practices and ensure compliance with environmental and social standards (Fraga-Lamas *et al.*, 2021) [81]. Increasing consumer awareness and demand for sustainable products are influencing businesses to embrace circular models like product-as-a-service and sharing platforms, alongside initiatives to educate consumers about the benefits of circular consumption. Urban areas are becoming hubs for circular economy innovation, with a focus on integrating green infrastructure and smart technologies to create sustainable cities (Trivedi & Trivedi, 2024) [82]. Furthermore, financial investments in circular economy projects are rising, with the development of green finance mechanisms expected to accelerate the transition towards a circular economy. Finally, global cooperation among governments, businesses, and civil society is crucial for addressing challenges like resource depletion and climate change through collaborative efforts to harmonize standards and support developing countries in adopting circular practices. Overall, the future of the circular economy will be shaped by innovation, collaboration, and policy integration, offering opportunities to create economic value while minimizing environmental impacts and promoting social equity. By anticipating emerging trends and adopting forward-looking strategies, stakeholders can contribute to a more sustainable and prosperous future for all (Medaglia *et al.*, 2024) [49].

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