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Competition in the Circular Economy – Note by Egypt

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Introduction

1. Egypt is now rethinking its economic growth and adapting its strategy to grow in a more sustainable way. The country hosting the COP27 conference of the Paris Agreement reflects a strong belief that going green can be a long-term driver of economic growth. The social and economic frameworks are being redesigned to accommodate for a "green growth" that prevents environmental degradation by promoting sustainable practices, waste reduction and efficiency of resource use. The adoption of clean technologies, the investment in renewable energy and the efficiency in using energy and materials are all a top policy focus for the government.

2. To this end, several structural, legislative and policy reforms have been undertaken since 2016 to promote eco-friendly investment. New laws that opened previously inaccessible sectors, such as the national electricity grid and waste management, have been enacted. Public-private partnership projects have been developed to target water and agriculture supply chain inefficiencies.

3. In terms of incentives, the government has passed feed-in tariffs to incentivize solar and wind energy generation projects. Companies operating in green energy projects - in particular green hydrogen and green ammonia production and storage, export and manufacture of plastics-alternatives - and in geographical locations that are in most need for development have been granted tax incentives up to 50% of the investment cost. Green bonds have also been issued for the first time in the Middle East and North Africa to offer new and innovative financing for green projects, waste management, green transport and renewable energy.

4. The challenge for businesses in Egypt now is to reconcile the incentives for providing resource-efficient climate-neutral products with the growing and urgent need for resilience in an economy suffering from rising inflation and a world characterized by regulatory uncertainty and volatile economic conditions. Highly volatile raw material prices and supply chain disruptions are prominent traits of the post-Covid economy. Businesses are now operating in a global market where environmental regulations, carbon pricing schemes, and waste management policies are all surrounded by uncertainty, which introduces risks and costs that impede long-term planning and investment.

1. The Circular Economy in Egypt's Sustainability Agenda

5. This need for resilience has placed the circular economy at the heart of Egypt's sustainability agenda. Businesses are increasingly developing circular models whereby materials and products are being recirculated within the economy, in contrast to the conventional linear make-use-dispose model. As traditional inputs are being replaced with bio-based, renewable or recovered equivalents, companies are able to reduce dependence on scarce resources, create value from waste streams and increase resilience to raw material price fluctuations.

6. A case in point is the example where scrap is increasingly being used as the primary raw material in steel production as iron ore prices are rising.

7. Moreover, with a decreased purchase power of consumers and an increasing demand for more durable goods, final products are being reused, refurbished, remanufactured and recycled. **A remarkable example is the scheme developed in 2019 by a number of Egyptian FMCGs' that incentivizes Cairo's waste** cement industry where companies are investing in waste heat recovery systems and energy generation from industrial and municipal waste that would otherwise be disposed in landfills as a response to the unprecedented increases in coal prices in 2022. The steel industry is another **collectors to boost their collection of PET plastics.** A reverse credit approach is used under which businesses that create plastic waste electronically compensate collectors, sorters, traders, and processors for each consignment that is gathered and sent for recycling and recyclers are paid through e-wallets in their local neighborhoods.

8. Circular economy activities and the resilience embedded within provide a safeguard for developing against economic turbulence, resource scarcity, and regulatory uncertainties.

9. In an attempt to disentangle the intricacies of the relationship between competition and circular economy, this paper aims to unravel the complexities of the interplay between competition and the circular economy by examining the key questions that have arisen in the discourse among the competition community. Additionally, it aims to provide insights from the Egyptian experience in this regard.

10. Specifically, is competition inconsistent with circular economy objectives of preserving environmental resources through circularity? Is there a business case for circular business activities to develop in competitive markets of developing countries? If not, is there a potential for competition policy to actively foster those activities? How can a competition policy then deal with circular business practices that are harmful to competition? These questions are particularly relevant to defining the role of the competition policy in facilitating Egypt's shift to a circular economy and addressing future challenges that may arise along the way.

11. The paper is structured as follows. Section 2 explores the conceptual links between competition and the circular economy in a developing country context. Section 3 presents the Egyptian Competition Authority's ("ECA" hereafter) strategies to support Egypt's shift to a circular economy. The ECA's enforcement and advocacy experience in considering circular economy aspects are laid out in this section, along with an overview of the practical challenges encountered. Section 4 concludes.

2. Do Competitive Markets Promote a Circular Economy?

12. The various models within the circular economy adopt diverse competitive strategies, indicating that they will be influenced differently by competition. It is therefore crucial to differentiate between these models in order to establish a theoretical foundation for the ongoing debate.

2.1. Typology of Circular Business Models

13. The circular economy includes diverse business models that can be classified according to the competitive strategy employed by companies (OECD, 2019). One such strategy is the *circular supply model or cradle-to-cradle product design*, where companies make strategic choices regarding sourcing during the early stages of product development to ensure that the materials used in their products do not end up as waste. Another model is the *resource recovery* approach, which involves extracting secondary raw materials from

waste streams. In the *industrial symbiosis model*, by-products of one firm become inputs for another. **These three models primarily focus on closing resource loops.**

14. **Another set of models aims to reduce the need for production and resource consumption.** These models include the *product life extension model*, which encompasses practices such as product reuse, refurbishment, maintenance, and remanufacturing. *Sharing models* involving co-access or co-ownership, as well as *Product-as-a-Service (PaaS) models* wherein producers offer product services while retaining ownership of the products themselves[1] encourage businesses to enhance repairability, recyclability, durability, upgradability and services.

15. Overall, these various models within the circular economy framework aim to minimize waste generation, maximize resource efficiency, and promote sustainable business practices.

2.2. Are Competition and Circular Economy at odds?

16. Competition may appear to be inherently conflicting with the objectives of circular economy. First and foremost, the aim of competition is to reduce prices and increase output, which essentially supports overconsumption, thus limiting the available environmental resources (known as the scale or China effect). Additionally, intensified competition can reduce profit margins, thereby impeding innovation.

2.2.1. Circular Economy Rebound

17. Zink (2017) argues that increased overall production driven by competition can counterbalance the positive environmental impact of lower per-unit production in a circular economy, leading to a circular economy rebound effect. Siderius and Zink (2022) relate this to the fundamental principle of competitive markets: the unlimited growth enabled by competition cannot be sustained within the limits of a finite planet. Therefore, if a circular economy develops within a competitive framework, it may end up being dysfunctional.

18. While it may be plausible for certain models such as the cradle-to-cradle and resource recovery models, the same cannot be assumed for models associated with the sharing economy or those focused on extending product longevity. This is because the primary objective of these models is to reduce consumption, rather than competing in the traditional sense.

2.2.2. Sub-optimal investments: supply and demand-side market failures

19. Competition may lead to reduced profit margins. However, it also aims at improving quality, which encompasses the environmental dimension of quality and increasing choices available to consumers, which includes that of more environment friendly products. By guaranteeing free entry on the market, competition also stimulates innovation to compete against new entrants. In terms of objectives, competition and the circular economy are not inherently conflicting.

20. Although effective competition à priori lays the groundwork for a circular economy, market failures often occur and prevent green markets from developing even in the most competitive markets. These can be categorized into demand-side and supply-side market failures.

[1] For example, a company providing heating as a service to a building while maintaining ownership of the underlying infrastructure.

21. **On the demand side,** although consumers value the sustainable attribute of products, this may not necessarily get reflected in their willingness to pay for green products. This may be explained by some social norms of fairness, which make consumers unwilling to pay the premium for such products unless all other consumers pay the same price and bear the social and environmental costs (ICC, 2020). Other behavioral biases that prevent green markets from developing include the *status quo bias* whereby consumers are discouraged from trying new greener or refurbished products and *hyperbolic discounting* (Helbling, 2020) which refers to the idea of consumers falsely underestimating the true cost of future environmental damage.

22. **On the supply side,** the supply of green products suffers from a *first-mover disadvantage*. The decision to adopt a green technology in the production process or to utilize renewable energy typically involves a high cost for the producer. From a game theoretic perspective, once a firm undertakes such investments, the optimal response of its rivals would be to undercut it by relying on browner technologies and materials to provide a cheaper alternative to consumers. Since each firm takes its investment and innovation decisions individually, the risk of being undercut reduces all firms' incentives to invest in sustainable technologies.

23. Had all firms been able to cooperate and agree on investing in green technologies, each firm would have benefited from the economy of scale necessary to lower its average fixed cost of the green investment and everyone would have been better off. Compared to coordinated collective action by companies, competition results in sub-optimal investments as decision-making in a competitive environment is constrained by market forces (Siderius and Zink, 2022).

24. This classic collective action problem, where the desirable outcome is not achieved due to the inability of firms to take their decisions collectively, highlights the "chilling effect" (OECD, 2021) that competition may have on sustainability at instances. It should be noted that the first-mover disadvantage is more severe when the investment in question involves an R&D from scratch as opposed to technology adaptation as there is less uncertainty involved in the latter.

2.3. Opportunities and Challenges for a Developing Economy

25. In the context of developing countries, several distinct factors must be taken into account, offering both opportunities and challenges in transitioning towards a circular economy.

26. **First, developing countries suffer less from the scale effect of competition as the carbon footprint associated with market expansion is less of a concern**,[2] we would not then expect the per-unit environmental gains to be outweighed by the increased overall production.

27. Developed jurisdictions are responsible for the majority of emissions, whereas developing countries contribute to a significantly smaller extent, with the poor population within these countries being accountable for even less. According to Brucknan et al. (2022), the 350 million Indians living in extreme poverty account for a mere 10% of the country's emissions and that lifting them out of poverty would only result in a 4% increase in emissions. On the other hand, raising 3.6 billion people above the poverty line of 5.5 USD per day would result in an 18% increase in global emissions, as opposed to a 40% decrease in emissions if the top half of emitters in the world were to halve their carbon footprint.

[2] OECD roundtable on Competition and Sustainability, 2022.

Developing countries with high poverty rates do not need to sacrifice market expansion and economic development in the name of promoting sustainability.

28. Second, in developing countries, innovation primarily revolves around technology adaptation rather than R&D from scratch. It entails lower risk, smaller fixed costs and is easier to ascertain compared to developed economies. This reduces the first-mover disadvantage and makes the reconciliation of competition and innovation less challenging.

29. Over 90% of the patents' applications and grants come from developed countries, excluding China, which accounts for one third of the world patents applications (World Intellectual Property Organization, 2021). That is, the industrialized economies are responsible for most of the innovations.

30. The focus in developing countries is often on adapting foreign technologies to local economies rather than developing the innovation from scratch. Technology adaptation involves lower uncertainty and higher chances of success compared to original research and development (R&D) efforts. This mitigates the disadvantages faced by early adopters on the market and reduces the disincentives to innovate.

31. Third, consumers' environmental awareness and hence their willingness to pay for green products tends to be positively correlated with their income and level of education (Chan, 2001; Junaedi, 2012; Nguyen and Ho, 2014), making green markets and circular economy initiatives particularly challenging to emerge in developing economies.

32. The economic viability of environmentally friendly products is diminished in these economies. Effective competition at best leads to cost-saving innovation and there is no reason to believe that cost savings get directed to green investments if there is no business case for such investments.

33. Although there may be a limited business case for circular activities like cradle-to-cradle models, which necessitate significant investments, the rising inflation and challenging economic conditions could present an opportunity for the development of circular business models focused on product sharing and longevity. As consumer demands for durability and reuse continue to grow, these circumstances could create a favorable environment for such models to thrive.

34. While there is a clear connection between competitive market outcomes and the goals of the circular economy, it is important to acknowledge that **circular business models will not necessarily develop organically in competitive markets. In some instances, competition can even lead to a dysfunctional circular economy and suboptimal investments. Therefore, competition authorities have a crucial role to play in facilitating the transition to a circular economy,** namely, accounting for circular economy considerations in their competition enforcement and proactively mitigating any potential adverse impacts of competition on the development of circular economy practices.

3. Circular Economy in the ECA's Agenda

3.1. Environmental considerations in the Egyptian Competition Law

35. While the Egyptian Competition Law (referred to as "ECL" hereinafter) lacks explicit provisions that directly integrate environmental and climate change considerations into its competition assessments, the public interest factors outlined in the ECL, such as the consumer welfare and economic efficiency, along with the environmental protection

provisions stated in the 2014 Constitution, offer **a sufficiently broad framework to encompass and address environmental and climate change concerns**.

36. Article 6 of the ECL allows for the possibility of granting exemptions, upon request by relevant parties, for agreements or contracts among competitors that seek to achieve economic efficiency, provided that it can be demonstrated that the benefits to consumers resulting from the agreement or contract outweigh the adverse effects on competition. The process of submitting an exemption request and making decisions in this regard shall adhere to the conditions and procedures stipulated in Articles 16 and 17 of the executive regulations accompanying the ECL.

3.1.1. ECA's strategy to support the shift to Circular Economy

37. The Egyptian Competition Authority's strategy to support the transition to a circular economy encompasses three key strategies. Firstly, it ensures the effective enforcement of competition law in industries that significantly contribute to the advancement of a circular economy. Secondly, the ECA incorporates circular economy and environmental considerations into its competition assessments. Lastly, it strives to strike a balance in cases where competition and circular economy objectives may not align seamlessly.

Effective competition law enforcement in relevant industries

38. The ECA closely monitors industries that are essential to advancing the shift to a circular economy.

39. **The ECA's diligent monitoring of the scrap markets is particularly important because any competition bottlenecks there could seriously impede the transition's forward movement.** Given that a sizable portion of these markets operates informally, the challenge is to identify the key market players. Small workshops with numerous suppliers and clients on a smaller scale typically make up scrap sellers. To gather information, the ECA relies on data from major scrap auctions, which are usually organized by various entities, including scrap dealers and governmental organizations such as public works departments.

40. Similarly**, the ECA places significant emphasis on overseeing the waste and recycling sector to address competition inefficiencies that can disrupt the closed-loop circular supply chain.** An example of this is highlighted in the used oil case mentioned in Box no.1, where the ECA's oversight and actions are aimed at promoting a more efficient and sustainable recycling process.

41. **Additionally, as the government takes on clean energy projects, specific sectors are increasingly gaining importance due to the growing reliance on them. In this context, the ECA closely monitors public tenders and procurement processes to prevent bid rigging in these sectors**. The ECA's vigilance is of utmost importance as any occurrence of bid rigging can significantly hinder the government's ability to secure financing and carry out clean energy projects efficiently. By ensuring fair competition and transparency, the ECA helps maintain a level playing field and promotes cost-effective implementation of these projects, contributing to the government's clean energy goals.

Box 1. The Used Oil Case

In response to a complaint submitted in 2011 by one of the refining companies against the sole licensed used oil collector operating in the Egyptian market at the time, the ECA conducted a thorough examination of the used oil market. The complaint alleged violations of Article (8) of the ECL and raised specific concerns, including refusal to deal and inclusion of arbitrary clauses in the contract.

Following a thorough examination, it was determined that the alleged violation could not be substantiated. Nonetheless, the examination unveiled a conspicuous decline in the volume of collected oils, accompanied by a substantial number of individuals involved in unauthorized oil collection activities. This unlicensed practice not only poses significant environmental risks but also presents health hazards to numerous consumers. Consequently, it became the focal point of the analysis conducted as part of an advocacy case.

The collection company transfers the used oils to refining companies, initiating the recycling process. The refining companies eliminate toxic additives, returning the oil to its crude state, and subsequently reintroduce chemicals to restore its usability. These refined oils are then supplied to the Egyptian General Petroleum Corporation, which facilitates their sale to petroleum and marketing companies, thus completing the circular supply chain. Any leakage of used oil from this chain is particularly harmful due to the chemical additives they contain, which become increasingly toxic over time. Their utilization as fuel in kilns and brick factories as a substitute for diesel fuel has been associated with the development of cancerous diseases and an exacerbation of global warming due to the high heat generated.

The ECA advocated for the issuance of licenses for the collection of used oil and the establishment of refineries, along with strict supervision and requirements for potential license applicants, and put forth a proposal to foster competition in the recycling market, presenting it as an efficient solution to address environmental issues.

3.1.2. Integrating Circular Economy Considerations

42. Beyond the traditional enforcement of competition law, the ECA aims to play an active role in advancing sustainable markets and encouraging the adoption of circular economy practices. The ECA's competition assessment integrates the environmental impact of business practices, taking into account their effects on consumer welfare, whether as a potential harm or an economic efficiency. By incorporating these factors, the ECA aims to foster a more environmentally conscious and consumer-centric approach to competition assessment.

43. For instance, in a recent study conducted on the Egyptian Civil Aviation market, the ECA made a recommendation to permit national airlines to operate on various routes, enabling them to establish alliances. These alliances would offer passengers a wider range of options with various connections, potentially reducing the reliance on long-haul flights. It is worth noting that one non-stop ultra-long-haul flights tends to generate higher carbon emissions compared to two shorter flights with a stop-over. The objective is to lessen the environmental impact of long-haul flights and encourage more environmentally friendly travel habits by offering alternate flight routes and options.

3.1.3. Balancing Competition and Circular Economy Objectives

44. When assessing competition issues, incorporating the environmental dimension presents a challenge for competition authorities. They may come across practices that harm competition but benefit circular economy initiatives, as well as practices that promote

competition but negatively impact the environment. Therefore, it is essential to strike a balance between considering competition objectives and addressing circular economy concerns, considering the potential conflicts and trade-offs between the two.

3.1.4. Cases where objectives are aligned

45. In the previously mentioned aviation case, the objectives of competition and the circular economy were aligned, as opening the market for airlines would lead to both environmental and competitive benefits.

46. Another case in point is the ECA's intervention in the cement sector in 2021 (see Box no.2). By preserving long-term competition on the market, the ECA also incentivized cement producers to innovate in circular business activities.

Box 2. The Cement Case

In June 2021, the ECA received 23 exemption requests from cement companies operating in the Egyptian market. These requests sought exemption from Article 6 of the Egyptian Competition Law and aimed to reduce production capacities for local sale.

Given the strategic importance of the Portland cement industry to the Egyptian economy and the impact of the COVID-19 pandemic on the construction sector, which led to a decline in demand for Portland cement and following the global competition authorities' practice of allowing horizontal agreements during crises, which aim to restrict manufacturing operations by limiting production volume to avoid market crises, The ECA granted the exemption for a one-year period (and was later extended for another year).

The exemption is subject to the conditions of horizontal agreements during crises, in light of the repercussions of the COVID-19 pandemic. It is considered a temporary solution to improve economic efficiency. This measure aims to maintain market diversity, reduce economic concentration, ensure ongoing effective competition, and minimize the likelihood of monopolistic practices in the future, benefiting the Egyptian consumer in the medium and long term.

According to the exemption decision, Companies are required to provide the ECA with a monthly statement including the actual production quantities, sales and inventory. Companies are also prohibited from abusing the exemption to engage in practices that facilitate the formation of anti-competitive agreements during the exemption period. These practices include sharing sensitive commercial data and information among themselves, price fixing, market allocation geographically or based on customer characteristics.

The resulting circular economy efficiencies consisted in:

- -Developing production lines to incorporate larger volumes of alternative fuels, up to 30% of the thermal energy used in cement production. This helps reduce around 160,000 tons of carbon dioxide emissions annually,
- -Decreasing the usage of clinker in cement manufacturing to produce environmentally friendly products. This leads to a reduction of approximately 800,000 tons of carbon dioxide emissions annually,

- -Creating a system to utilize side dust passages and implementing a treatment system for alternative fuels used in combustion processes, and
- -Advancing the use of thermal recycling, wherein furnace gases are recycled to generate electricity, resulting in a 25% reduction in electricity consumption.

47. In tying and bundling cases, competitive and environmental objectives are normally aligned as these anti-competitive practices are harmful to both competition and the circular economy as they promote overbuying.

48. For example, in a recent case initiated by the ECA in the school uniform sector, a private school announced a change in the uniform through social media, deliberately withheld the specifications of the new uniform and sold it as a non-divisible package, preventing parents from purchasing individual pieces separately. This conduct by the school violated Article 8 of the ECL by abusing market dominance to restrict the manufacturing and distribution of school uniforms *and* engaging in tying and bundling practices of unrelated products.

49. The school's conduct had negative implications for the circular economy. First, parents were forced to purchase the entire uniform set instead of individual pieces, resulting in overconsumption and contradicting the principles of a circular economy. Moreover, the change in the uniform design resulted in a shorter product lifespan, leading to waste as some of the parents were compelled to purchase new uniforms despite having usable ones from previous years or siblings.

50. It should be noted here that the shorter lifespan could be an *actual* shorter lifespan, if the school urged parents to purchase the new uniform, or a *perceived* one otherwise, due to social and peer pressure to acquire the latest uniform even though the existing one is still usable. Generally, lifespans – whether actual or perceived – are challenging to measure in practice as there is no standard benchmark to compare them to, the benchmark itself being highly dependent on consumption habits of the various consumers which are rarely uniform.

51. When both competition and circular economy objectives point to the same direction, the answer is simple. The task of balancing becomes more challenging when the two objectives point at opposing directions.

3.1.5. Cases with conflicting objectives

52. Uber and Careem, the two largest ride-hailing companies, informed the ECA of their intent to merge in 2019. Although the transaction may create substantial market power and possible harmful unilateral effects, it had advantages for the circular economy. The new merged entity would improve vehicle routing through improved data analytics and machine learning algorithms, resulting in an increased efficiency and fewer idle or underutilized vehicles on the road. Thus, the effects of operations on emissions and the environment would be reduced.

Box 3. The Uber Merger Case

On March 26th, 2019, ECA received a notification from Uber Technology Inc. and Careem Inc. - the two ride-hailing companies operating in Egypt at the time – of a Conditional Purchase Agreement according to which Uber proposes to acquire the entire

operations of Careem in the Middle East, pending the approval of Competition Authorities in the jurisdictions they are merging.

The ECA's assessment of the proposed transaction identified key barriers to entry into the market. By combining the two largest companies and aggregating their range of services, geographic coverage and databases, the merged entity would raise the costs and requirements of building and managing a network for a new competitor due to the strong network effects required. The market would lack short-term profitability and potential rivals would have difficulty accessing funds and attracting drivers and vehicles, as brand loyalty would be difficult to overcome. This may lead to increased prices, reduced quality and innovation and limited choices for riders, as well as decreased revenues and incentives for drivers. Moreover, the merged entity would have the incentives and ability to leverage market power to adjacent markets (such as that of app-hailed HCVs).

Nevertheless, the acquisition would also produce economic and circular efficiencies. With enhanced data analytics and machine learning algorithms, the merged entity would be able to optimize vehicle routing, resulting in fewer idle or underutilized vehicles on the road and thus reducing emissions and environmental impacts of operations.

On December 19th 2019, the ECA granted the transaction an exemption under Article 6(2) conditional on a set of commitments - proposed by the Parties and monitored by an independent Monitoring Trustee - that includes: complying with a cap on prices, not increasing the company's commission beyond current rates, allowing new competitors to access and trip data, not to price their HCV services below cost or engage in tying or pure bundling of products.

53. In an attempt to balance between the conflicting objectives, the ECA granted the transaction a conditional approval under Article 6(2). The ECA imposed a set of commitments on the merging Parties to ensure the prevention of abuse of dominance and the elimination of barriers to entry. As a result, within the following three years, two new competitors successfully entered the market.

3.2. Practical Challenges

54. While examining different aspects of the circular economy, the ECA encountered challenges in practice.

55. First, some of the key sectors relevant to the circular economy such as the recycling and waste sectors, particularly in developing countries, often exhibit a significant level of informality. This informality creates difficulties in obtaining accurate information about market players, their behavior, and market dynamics due to the lack of documentation and transparency. Moreover, these sectors are typically comprised of small-scale independent participants, further hindering engagement and information gathering. This limited access to market players hampers the accurate assessment of market behavior.

56. Second, measuring certain aspects of the circular economy is more challenging than others. While quantifying efficiencies such as emission reductions, cost savings, and resource substitution is feasible, assessing the abstract concept of product longevity proves more difficult due to the absence of a standardized benchmark for comparison. Constructing such a benchmark based on the diverse consumption habits of consumers is a complex task, as their behaviors are rarely uniform.

4. Conclusion

57. In a global economy characterized by economic uncertainty and a constantly shifting legal framework, businesses in Egypt face the challenge of aligning incentives for resource-efficient products with the need for resilience. The circular economy - which reduces resource dependence - offers a solution by providing a buffer against economic turbulence, resource scarcity, and regulatory uncertainties.

58. At first glance, it may seem that the objectives of competition and circular economy are at odds. To the extent that competition reduces profit margins and increases consumption, competitive markets may not foster the growth of a circular economy which requires investments in innovation and limited consumption to preserve environmental resources.

59. However, competition also ensures free entry and allows only efficient firms to remain on the market, improves quality of products and stimulates firms to innovate to differentiate their products. Competition *à priori* lays the groundwork for circular economy initiatives to develop. That said, circular business models are not likely to develop organically in competitive environments due to market failures, including consumer reluctance to pay for green products and the first-mover disadvantage when investment decisions are not made collectively.

60. Developing countries face opportunities and challenges in adopting a circular economy. Their smaller scale effect of competition allows market expansion without sacrificing sustainability. Innovation primarily involving technology adaptation reduces the first-mover disadvantage. However, limited consumer awareness and willingness to pay for green products affect the business case for investment-intensive circular activities such as cradle-to-cradle models. Nonetheless, challenging economic conditions and rising inflation can create opportunities for circular models centered around sharing and longevity to thrive.

61. Competition authorities, both in developing and developed economies, then have a proactive role to play in facilitating the transition to a circular economy by mitigating the harm to circular economy initiatives brought about by competition and integrating relevant considerations in competition assessment.

62. The Egyptian Competition Authority (ECA) has taken steps in this direction. The ECA's strategy to support the shift towards a circular economy consists of three key approaches. Firstly, it closely monitors industries crucial for the circular economy, such as scrap markets and the waste and recycling sector. Additionally, the ECA diligently oversees public tenders and procurement processes to prevent bid rigging in sectors related to the government's clean energy projects, ensuring their cost-efficient implementation. Secondly, the ECA incorporates circular economy and environmental considerations into its competition assessments, both in advocacy and enforcement. Lastly, it seeks to strike a balance in cases where competition and circular economy objectives may conflict.

63. Finally, there are practical challenges to consider. The presence of informality within key sectors of interest, such as recycling, and waste, makes it challenging to obtain reliable information about market players and their behavior. Additionally, measuring the adverse effects on some aspects of the circular economy such as the longevity of product can be challenging due to the absence of a benchmark for comparison.

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