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MERGER CONTROL IN DYNAMIC MARKETS – Contribution from Egypt

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Merger Control in Dynamic Markets

- Contribution from Egypt –

1. Introduction

1. Mergers and acquisitions are transactions that cause a disruption in the market structure; they are inherently dynamic. They often result in a shift in the market structure, therefore resulting in a complete overhaul in the competitive landscape, especially if the transaction in question is between close competitors. The Egyptian Competition Authority ("ECA") finds that in order to predict the impact of such a transaction, the analysis must be both static and dynamic in order to capture the realities of the market and subsequently predict its future.

2. Static analysis is used to reflect the reality of competition in the market at a specific moment in time, focusing on the market in the recent past or examining the current state of competition. These static moments constitute the foundation of ECA's predictions and projections as part of its predictive dynamic analysis, allowing it to predict how the market may evolve in the post-transaction scenario. Over-reliance on the static view of competition when reviewing a merger or acquisition may result in misleading conclusions as to the future of the market in the post-transaction scenario and therefore lead to a misinformed decision by a competition authority, which could negatively affect the market. For that reason, ECA uses a combination of static and dynamic tools in order to examine the post-transaction scenario and hence issue a decision accordingly.

3. This is especially true in the digital economy – a rapidly-evolving sector contingent on the emergence of high-technology – which encompasses online platforms and e-commerce alternatives.[1] The competitive dynamics in the digital economy constantly shift to match the continuous innovation processes that take place on it. This constant process of innovation systematically disrupts existing business models and creates entirely new markets, rendering the markets evolving through digital technologies naturally dynamic. They should hence be assessed accordingly.

4. To reach an ex-ante decision regarding a merger or acquisition taking place on the digital economy, ECA takes into account the features of this nascent industry and its importance in Egypt, and uses its jurisdiction and general policy to analyze the transaction through a combination of static and dynamic tools.

[1] The term "digital economy" is rather general; as there is no agreed definition on it in international literature, it will be used throughout this paper to refer to (mainly internet-based) businesses that provide products and/or services based on user data and modern technology. This is similar to the definition used in BRICS in the Digital Economy, 2019, p. 5.

2. Dynamic features of the digital economy

5. ECA observes that the digital economy is home to a number of dynamic markets. Its conception is a direct result of the utilization of new technologies combined with traditional realities, to create new, innovative forms of business. The nascent nature of this economy often means that any current mergers or acquisitions may irreversibly change its future development. The digital economy comes with multiple benefits – which can only be ensured, and better yet, augmented, when such markets stay competitive.

6. The digital economy has benefited consumers by creating entirely new categories of products and services. It has also benefited businesses by lowering the costs of starting a business. In other areas, it has facilitated greater competition, enabling entry of new business, growth of existing business, and facilitating multi-homing to allow seamless switching between service-providers.[2] Moreover, the existence of this new digital economy promises a better competitive environment for a number of reasons, such as increasing pro-competitive market transparency and information flow, lowering search costs, facilitating entry and expansion, creating more dynamic disruption and efficiencies, and reducing seller power.[3] "Ensuring innovation continues at the pace the digital economy has previously delivered" is crucial for the existence of the benefits that result from dynamic digital markets.[4] Markets in the digital economy must stay competitive so that consumers and businesses alike can benefit from the technology and the ease it brings.

7. An example of such businesses are those that take the form of digital platforms. Digital platforms can be defined as: "applications that serve multiple groups of users at once, providing value to each group based on the presence of other users".[5] Prime examples, or categories, include search engines, social media platforms, and digital content aggregation platforms.[6]

8. Digital platforms are associated with specific features; they usually operate on two (or multi-) sided markets and hence exhibit network effects. They often incur low switching costs and are highly dependent on data.[7]

9. Digital platforms will often operate on more than one market, meaning that they require more than one group of consumers in order to function. For example, social network platforms will require users (account-holders) as well as advertisers. This will usually lead to the existence of direct and indirect network effects.

10. Direct network effects imply that the value of a network increases with the number of users. Unlike traditional markets, where the value of a good may decrease the more people use it, having more users of a network will instead increase its value. On the other

[2] Ibid, p. 3.

[3] Ariel Ezarchi and Maurice E. Stucke, Virtual Competition, Harvard University Press, 1st Edition, 2016, pp.20-25.

[4] Jason Furman, Unlocking digital competition, Report of the Digital Competition Expert Panel, March 2019, p. 18.

[5] Australian Competition and Consumer Commission, Digital Platforms Inquiry, 2019, p. 41.

[6] Ibid.

[7] UNCTAD, Competition Issues in the Digital Economy, July 2019, p. 3. Available at: https://unctad.org/meetings/en/SessionalDocuments/ciclpd54_en.pdf.

hand, indirect network effects describe networks where the value of the network increases not only with the number of one type of users, but also with the balance of the number of the other type of users.[8] Consequently, the direct and indirect network effects of digital platforms facilitate high network density of dominant players, leading to the concentration of users and their data with incumbents.

11. Moreover, digital markets are usually characterized by low switching costs and increased multi-homing. In some markets, such as those of social media networks, the services provided are all essentially the same. Consequently, engaging with other service providers will be time-consuming and inefficient, so consumers will not use multiple services at the same time.[9] The likelihood of market monopolization increases with single-homing markets, since new market entrants will have more difficulties and higher costs of attracting users from existing platforms. In other markets, such as ride-hailing markets, consumers may be more willing to switch to other applications. However, multi-homing can be limited through the amounts of data in the hands of market players.[10] In fact, research has shown that the significant amounts of data held by the incumbent firms are among the paramount barriers to entry in the digital economy.

12. Digital platforms are highly dependent on data. These platforms function through algorithms, which are developed and maintained through data. An algorithm is a set of heuristics and calculations that creates a model from data.[11] To create a model, the algorithm first analyses the data users provide, looking for specific types of patterns or trends.[12] This portrays the importance of data in algorithms and hence in digital platforms.

13. The technologies needed for data storage are costly, but the marginal cost associated with any additional data are low.[13] Therefore, digital platforms are characterized by having high sunk costs but low marginal costs.[14] Consequently, this cost structure exhibits high economies of scale and scope and could thus lead to the concentration of big data in the hands of few market players.[15]

[8] Laure Claire Reillier and Benoit Reillier, Platform Strategy, Routledge, 1st Edition, 2017, p. 35.

[9] Ariel Ezarchi and Maurice E. Stucke, Virtual Competition, Harvard University Press, 1st Edition, 2016, pp. 20-25.

[10] Lear for the Competition and Market Authority, Ex-post Assessment of Merger Control Decisions in Digital Markets, 9 May 2019, pp. 128-130.

[11] Microsoft, Data Mining Algorithms (Analysis Services - Data Mining), May 2015. Available: https://docs.microsoft.com/en-us/analysis-services/data-mining/data-mining-algorithms-analysis-services-data-mining.

[12] Ibid.

[13] UNCTAD, Competition Issues in the Digital Economy, July 2019, pp. 3-4. Available at: https://unctad.org/meetings/en/SessionalDocuments/ciclpd54_en.pdf.

[14] Ibid.

[15] OECD, 2016, Big data: Bringing Competition Policy to the Digital Era, p.11.

14. In Egypt, digital platforms are rapidly growing. In 2018, the number of active Egyptian Facebook users reached 35 million,[16] 11 million active Instagram users,[17] while Google received, in the same year, 259,700,000 visits a month from Egypt[18]. The Information and Decision Support Center (IDSC) surveyed Egyptian users and the results demonstrated that 48% of respondents use Facebook and 48% use WhatsApp. These rates are only set to increase, as the annual growth rate of Internet subscribers in 2018 was 16.85%.[19]

15. These figures serve to show that such markets play an important role in the everyday life of Egyptian consumers; it is critical for these markets to stay competitive. For that reason, ECA often finds that, as a matter of policy, it is often necessary to intervene in transactions taking place in the digital economy due to their nascent nature and to the irreversible harm that could result from a transaction absent ex-ante assessment.

3. ECA's jurisdiction in reviewing mergers and acquisitions ex-ante

16. ECA may find it necessary to intervene, under Articles 6, 7, and/or 8 of the Egyptian Competition Law ("ECL"), in cases where a transaction – in the form of a merger or acquisition – may lead to irreversible harm on the competitive landscape, mainly through the creation of a non-contestable dominant position.

17. Such transactions are defined as agreements that bring together two independent undertakings, in which one party controls another party by absorbing the latter's assets or in which one of the parties ceases to be an independent competitor. If the transaction concerns two parties competing at the horizontal level, it may constitute an infringement of Article 6(1) ECL. Article 6(1) of ECL prohibits agreements or contracts between competitors if they are *likely* to restrict the freedom of competition and in particular if they may result in any of the conduct listed therein. It is sufficient that the harm to competition is theoretically likely in light of the legal and economic context in which the agreement takes place. The law in no part restrains ECA's intervention or suggests that the harm must occur so that ECA can intervene. Otherwise, it would run against ECL's very purpose of establishing a preventive legal regime capable of ensuring effective competition throughout the economy.[20] As will be shown below, this further necessitates the accurate, dynamic prediction of the potential results of a transaction. Notably, at the condition of prior notification of the parties, ECA may grant the parties an exemption under Article 6(2) if the agreement creates economic efficiencies that are verified by ECA's dynamic analysis. As such, ECA has the authority to block an anticompetitive agreement before the harm resulting from it materializes as long as, at the moment of the conclusion of the agreement, the parties to it are two or more independent competitors.

[16] Digital Marketing Community, Social Media Users in Egypt: Facebook Insights and Usage in Egypt, 2018, available at: https://www.digitalmarketingcommunity.com/indicators/facebook-insights-usage-in-egypt-2018/.

[17] Ibid.

[18] Data Reportal, Digital 2019 Egypt, 2019. Available at: https://datareportal.com/digital-in-egypt.

[19] Ministry of Communications and Information Technology (Egypt), ICT Indicators in Brief, 2018.

[20] Article 1 ECL.

18. Moreover, if the agreement is between parties in a vertical relationship, Article 7 ECL may be applied instead. Finally, if at least one of the parties is in a dominant position prior to the transaction, it may constitute an infringement of Article 8 ECL.[21]

19. Notably, ECA has the power to intervene ex-ante through Article 20 ECL, which allows ECA to issue interim measures, binding potential infringing parties from carrying out certain conduct.

20. The above serves to show that, using Articles 6, 7, and/or 8, ECA can intervene to ensure that economic entities do not undertake practices, or agreements in the form of mergers or acquisitions, that restrict the freedom of competition through the creation of non-contestable dominant position. This allows ECA to practice its main role of ensuring that "economic activities shall be undertaken in a manner that does not prevent, restrict, or harm the freedom of competition".[22]

21. ECA finds that it may be exceptionally necessary to intervene in transactions that may result in the creation of a concentration on growing, developing dynamic sectors, as harm as such sectors may be irreversible due to their nascent nature. For that reason, the following section serves to show that ECA uses both static and dynamic tools in its analysis in order to capture the peculiarity of the digital market and provide a complete and through assessment that fully describes market conditions.

4. Competitive assessment in the digital economy

22. When assessing a transaction in the digital economy, ECA uses a combination of static and dynamic tools in order to capture the current dynamics of the market and predict how these will evolve. This guarantees ECA's preventive role by ensuring that mergers and acquisitions do not cause irreversible harm on competition, such as the creation of a non-contestable dominant position.

23. Static analysis looks at the nature of competition in the market[23] by examining the number of market players, investigating the extent to which the market structure may be affected, and looking at the possibility of entry in the short-run.[24] Dynamic analysis considers market dynamics in a longer term, including entry, expansion, and exit by firms. The purpose of dynamic analysis is to capture the process of dynamic competition, which

[21] The European Commission still resorts to Article 101 TFEU in relation to some mergers and acquisitions. This is because, as stated by the Deputy Director General of the DG Comp in charge of mergers: "EU merger control is 'the child' of both Articles 101 and 102 TFEU". See: Carles Esteva Mosso, The Contribution of Merger Control to the Definition of Harm to Competition, March 2016. Available at: http://ec.europa.eu/competition/speeches/text/sp2016_03_en.pdf.

[22] Article 1 ECL.

[23] Steven Berry and Ariel Pakes. Some Applications and Limitations of Recent Advances in Empirical Industrial Organization: Merger Analysis, The American Economic Review, Vol. 83, No. 2, 1993, pp. 247–252.

[24] Irvin M. Grossack, Towards an Integration of Static and Dynamic Measures of Industry Concentration, The Review of Economics and Statistics, Vol. 47, No. 3, Aug., 1965, pp. 301-30.

involves the rolling out of new services in adjacent markets as well as other market changes such as future mergers and future geographic expansions over an extended period of time.[25]

24. The main parameters ECA employs in order to conduct a thorough analysis that is static as well as dynamic are: product substitutability, market concentration, potential entry, and efficiencies, all in an appropriate timeframe.

4.1. Timeframe

25. The establishment of the appropriate timeframe of merger review is crucial to ECA, as it enables it to accurately predict how the market may evolve in a post-merger scenario.

26. ECA assesses the likely effects that a merger will have in one year, five years, or in a ten-year time period, depending on several factors – notably, the degree of the maturity of the market. It is more likely that a market in its earlier stages will endure more changes and fluctuations than a mature and established market. For that reason, ECA assesses the likely effects of the merger in a young market in a larger timeframe within comparison to the more stagnant market.

27. As such, when assessing mergers or acquisitions in dynamic digital markets, ECA employs a combination of static and dynamic analyses. It uses the former to grasp the realities of the market and pave the way for the latter, creating an accurate predication of the market post-merger.

4.2. Substitutability

28. ECA's analysis of substitutability can be described as static. In analyzing horizontal mergers and assessing unilateral effects, ECA looks at product substitutability using diversion ratios. Diversion ratios measure the proportion of consumers that switch from one product to an alternative following a price increase and/or a quality decrease.26 ECA is more concerned about mergers that involve products with higher diversion ratios; the closer the competition between the merging parties is, the more likely the merger will result in unilateral price effects.27

29. Another important tool that ECA uses in assessing substitutability mergers is the Critical Loss Analysis (CLA). It examines the level of sales loss that could be borne for a specified change in price without rendering that price increase unprofitable.28 CLA offers "a benchmark for the maximum extent of consumer switching that would permit a hypothetical monopolist to profitability raise prices."29 CLA provides ECA with a strong insight to understand substitutability. For example, if a price increase is found to be unprofitable, this implies that substitution to other products is significantly great to impose

[25] Magdalina Laskowska, Dynamic Efficiencies and Technological Progress in EC Merger Control, the University of Oxford Centre for Competition Law and Policy, Working Paper CCLP (L) 29, 2013, p. 3.

[26] Christopher T. Conlon, Julie Holland Mortimer, Empirical, Properties of Diversion Ratios, National Bureau of Economic Research, Working Paper 24816, 2018.

[27] Ibid.

[28] Daniel Gore, Stephan Lewis, Andrea Lofaro and Frances Dethmers, The Economic Assessment of Mergers under European Competition Law, Cambridge University Press, 2013, p.51.

[29] Ibid.

an effective competitive constraint. Using static methods to assess substitutability allows ECA to come to an accurate understanding of consumer behavior and of the market, and hence proceed to assess the transaction accordingly.

4.3. Market concentration

30. ECA employs a number of tests to assess market power and concentration resulting from a merger. ECA uses concentration ratios such as the Herfindahl-Hirschman Index (HHI) and the CR4 to determine the level of concentration in the market. The digital economy in Egypt is considered relatively nascent and is usually characterized by having a small number of market players. Thus, ECA relies more heavily on the HHI rather than on the CR4. ECA also looks at market shares to determine the post-transaction market structure. For example, if the merger will result in creating a market with few large firms (or one firm) with market shares that exceed the combined market shares of other firms, the merger will most likely disrupt competition in the market.

31. Moreover, upon the assessment of market power and concentration in such dynamic markets, ECA takes into account the special features of digital economies. In such markets, market shares are quite volatile as the switching costs from a platform to another are quite low and consumers could easily divert to other platforms. So, it does not suffice to look at market shares at a specific point in time; ECA usually examines the trends and evolution of market shares for an elongated time frame. These techniques help ECA understand the current market conditions and facilitates the prediction of the future of the market.

4.4. Entry

32. A key part of merger review that involves dynamic predictions of the market post-merger is entry assessment. Mergers often lead to an increase in market concentration – but, a merged entity's market power will be limited or constrained upon the entry of new firms. ECA's view is that, especially in digital markets, entry is only sufficient if is it sustainable in the long-term. In order for entry to be effective, as international best practices dictate, it must be likely, sufficient, and timely. If entry meets these three conditions, it will most likely impose a competitive constraint on the post-merger entity and constrain its behavior.[30]

33. ECA assesses how the change in market structure resulting from a merger will affect market outcomes. This change in market outcomes would inevitably impact the possibility of potential entry through either creating incentives for new entrants or augmenting barriers to entry. For that reason, assessing entry entails a dynamic prediction of the future of the market through analyzing static features of the merging entities.[31]

34. The features of digital markets – which include high sunk costs, low marginal costs, and low switching costs, as identified above – may render the theory of the presence of contestable markets in digital markets inapplicable in most cases, as contestable markets exist when there are no sunk costs to entry. Thus, although the seemingly ease of entry onto digital markets may incentivize players to enter, market incontestability and the inability

[30] European Council, Guidelines on the assessment of horizontal mergers under the Council Regulations on the control of concentrations between undertakings, OJ C 21, 5.2.2005, para. 69.

[31] Douglas H. Ginsburg and Joshua D. Wright, Dynamic Analysis and the Limits of Antitrust Institutions, Antitrust Law Journal, Vol. 78, No. 1, 2012, p. 12.

of new entrants to compete with a post-merger entity on the market may create a model known as the dominant firm-competitive fringe model and facilitate hit-and-run entry.

35. Entry is unlikely if the market post-merger exhibits a dominant firm-competitive fringe model: where the market consists of a dominant firm along with small firms that each have a small share of the market, but have a bigger share combined. In this model, it is highly likely that the dominant firm sets the price and that the fringe firms will be "price-taking" firms. The smaller firms will compete with one another and will take the price set by the dominant firm.[32] In order to maximize profits, fringe firms will supply all they profitably can at this price. However, the dominant firm can set a price that is equal to or lower than the shutdown price of the fringe firms. Hence, fringe firms will be unable to profitably operate in the market and may eventually exit. The dominant firm is more prone to set a price below the shutdown price of the fringe firms when it enjoys low marginal costs. This may lead to the exit of fringe firms from the market and thus disincentivizes future entry. This serves to show that it is not sufficient to solely look at short-run entry, especially in digital markets.

36. Another reason why short-run entry is not a good indicator of sufficient entry is that, for the reasons described above, digital markets are also prone to "hit-and-run entry". Hit-and-run is an entry model in which an entrant incurs supernatural profits and then exits the market as soon as they are exhausted.[33] This is also known as uncommitted entry. In contestable markets where there are no sunk costs to entry and the incumbent will stick to the pre-entry price for some time after observing entry, hit and run entry is plausible and feasible.[34] In such markets, free, even uncommitted entry, can deter incumbents from acting anti-competitively. However, when markets are incontestable, it is unlikely that this model of entry may constraint the incumbent.[35] Even if hit-and-run entry occurs, it will be naturally short-lived, and hence the effect it has on incumbents is unsustainable. Thus, the market features manifested in the presence of high sunk costs and network effects would thus render hit-and-run entry ineffective, as it will not constrain the behavior of the incumbent.

37. This is especially true if the merged entity has certain competitive advantages. ECA takes this into consideration in its assessment through a static view of the prevalent advantages of market players.

38. Despite the dynamic nature of digital markets, some competitive advantages gained by market players, by their nature, cannot be lost or transferred due to competition; they emanate from a situation or an event that happened at a certain point in time. The clearest example of these advantages is the first-movers' advantage. It is an advantage that is irreversible through the passing of time and cannot be lost to a competitor. It is hence a static competitive advantage in a dynamic market. The static nature of these advantages creates a market power that can be self-sustained giving an edge to the firms detaining them – even if they were less innovative in comparison to other firms. First-movers become standard setters by default which confers them the position of a market leader even temporarily, making other competitors followers who adhere to the prices and output

[32] Michael A. Utton, Market Dominance and Antitrust Policy, Edward Elgar, 2nd Edition, 2003.

[33] Massimo Motta, Competition Policy: Theory and Practice, Cambridge University Press, 12th Edition, 2009, p.75.

[34] Ibid, p.74.

[35] OECD, Barriers to Entry, Summary of Contributions, Policy Roundtables, 6 March 2006, available at: https://www.oecd.org/regreform/sectors/36344429.pdf.

quantity put forth by the leaders. One example of this immutable advantage is when the trade name of the firm becomes the generic of the service presented even if the namesake is not the most prominent firm in the market anymore. Other examples of static advantages are owning an essential facility or an important infrastructure.

39. In these situations, static advantages are not altered by the dynamics of competition. They are a constant in a market of changing parameter and they affect the competition in dynamic markets without being altered or affected by the process of steady innovation. When a merger occurring in a dynamic market involves static advantages, ECA can predict a large part of the effects a merger will have on the structure of the market and on competition through static analysis.

40. ECA undertakes the above analysis to detect whether entrants will be able to place competitive constraints on the post-merger entity. Entry analysis requires taking into account static advantages of the merging parties in order to predict the ability of players to enter the market and stay on it, hence constraining the merged entity. This is especially true in digital markets, where entry may seem theoretically likely but will often prove difficult and costly in reality.

4.5. Efficiencies

41. As explained above, parties must present economic efficiencies that are passed on to consumers and that outweigh the restriction on competition that may result from the transaction in order to avail an exemption under Article 6(2) ECL. Economic efficiency is defined in Article 2(e) of ECL as: "decreasing the average of the variable cost of products or improving their quality, or increasing output or distribution, or producing or distributing new products, or accelerating their production or distribution". This provision accounts for both static and dynamic efficiencies, meaning that ECA must consider both in its assessment of a merger or acquisitions. Moreover, efficiencies must be transaction-specific, verifiable, and lead to outcomes that are beneficial to consumers.[36] To analyze whether proposed efficiencies meet these conditions and whether the harms of a transaction will be outweighed by potential benefits, ECA considers both static and dynamic efficiencies.

42. Static efficiencies are those that result in an immediate change in infrastructure, price, or quality are easy to detect and to verify if they will be passed down to consumers. They only happen once and they only account for static efficiency gains such as cost improvements in a point in time.

43. When assessing static efficiencies, ECA checks that static efficiencies are transaction-specific, passed down to consumers, and are verifiable, in compliance with the criteria above. First, it must be shown to ECA that cost reductions arising from the merger will not be achieved absent the merger and that they will be realized without the lessening of effective competition. Second, ECA examines if the reductions in cost will be passed on to consumers via lower prices. Finally, in case the merger will result in a decrease in price levels, ECA assesses if the price reductions will outweigh the reduction in competition resulting from the transaction.[37] Conversely, if the merger will result in an increase in price

[36] Daniel Gore, Stephan Lewis, Andrea Lofaro and Frances Dethmers, The Economic Assessment of Mergers under European Competition Law, Cambridge University Press, p. 305.

[37] Ibid.

levels, ECA examines if cost reductions outweigh the deadweight loss of the expected price increase and the reduction in competition resulting from the transaction.[38]

44. For example, if the merger will create an entity that is able to exercise market power, ECA will accordingly assess how the market power would affect costs and price levels. If the merger would lead to an increase in the price level and a decrease in the average cost, a merger is said to create static efficiencies if the deadweight loss that results from the decrease in quantity and increase in price is lower than the cost savings resulting from efficiency gains.

45. Thus, ECA looks at price levels and cost structures in order to quantify static efficiency gains. ECA requests from the parties to a merger to submit detailed data sets that differentiate between variable and fixed costs and outline price levels across time.

46. ECA recognizes that static efficiencies alone will, most likely, not capture the full effects of a transaction. Hence, in analyzing efficiency gains, ECA finds it necessary to couple the above analysis with a dynamic analysis in order to get a clearer picture of the impact of the transaction.

47. Dynamic efficiencies are the result of innovation, research and development; the results of which become apparent over the medium to long term. ECA recognizes that dynamic efficiencies will most likely occur on the long-run and as such are not easily verifiable. A competition authority may have to perform a trade-off between static and dynamic efficiencies; despite an expected decrease in welfare in the short-run due to the merger, in the long-run, dynamic efficiencies will lead to a substantial increase in welfare that outweighs the loss incurred in the short-run. For such trade-off to occur, dynamic efficiencies must be verifiable and likely in order to ensure that the loss of competition will not reduce the incentive to reach such efficiencies.

48. Dynamic efficiencies are usually the result of the achievement of economies of scale and scope in R&D and the elimination of duplicative R&D. Increasing returns to scale in R&D arise due to specialization, complementarities of resources and skills, and more efficient utilization of resources. A merger is said to lead to experience economies of scale in R&D if the R&D program implemented in the post-merger entity is more productive than two separate R&D programs implemented by each firm separately, assuming that the size of the R&D program of each firm is half the size of that of the post-merger entity.[39] A merger would lead to economies of scope if engaging in a range of different R&D activities is more productive than engaging in a smaller number of activities.[40] A merger would also create dynamic efficiencies if it avoids duplicating costly R&D efforts; the merger would eliminate redundant R&D and consequently avoid the waste of resources.

[38] OECD, Dynamic Efficiencies in Merger Analysis, Policy Roundtables, 15 May 2007, p. 22. Available at: http://www.oecd.org/daf/competition/mergers/40623561.pdf

[39] Competition Bureau Canada, Innovation and Dynamic Efficiencies in Merger Review, 9 April 2007, available at: https://www.competitionbureau.gc.ca/eic/site/cb-bc.nsf/eng/02376.html#dynam

[40] Ibid.

49. Therefore, when balancing the harms and the efficiencies brought by the merger, ECA considers the likelihood and the cost of innovation and R&D in its calculations.[41] The margin for innovation depends on the "age" of the market; a younger market may have a higher likelihood of innovation than a mature market.[42] Additionally, ECA also looks at quality improvements that may include reliability, speed of the service, privacy and data security, user friendliness, and customizability.

50. While the assessment of dynamic efficiencies is crucial during the merger review period, the process of analyzing and quantifying these efficiencies is often associated with difficulties. Not only is uncertainty inherent to the nature of dynamic efficiencies, but even if there is some sort of certainty in the occurrence of dynamic efficiency gains, they usually happen over several time periods.[43] In particular, efficiency gains related to innovation are the most difficult to assess; the extent to which an innovative activity will succeed is uncertain and the transformation of innovation into a measure of welfare is difficult.[44] For example, while increasing the speed of service could be regarded as an improvement, its importance varies depending on the features of each market, the behavior of consumers, and whether such efficiency could have been naturally achieved in the absence of the transaction. As such, in the absence of certainty of the scope of dynamic efficiencies, it may be difficult for a competition authority to capture their impact. The merging parties should therefore present to the authority what illustrates that these efficiencies are verifiable.

51. Dynamic efficiencies require an extensive knowledge and understanding of the sector, technology and, ironically, a prediction of the unpredictable nature of innovation. ECA (with the assistance of the parties and industry experts) may conduct its assessment through an understanding of the underlying technology of the relevant sector and a close follow-up of the developments in the business. It also detects the behavior of firms and consumers, the problems that consumers face and how firms may respond to them, whether through innovation, more investment, or both. This will often require that the parties to the transaction thoroughly and consistently cooperate in providing requested information. That being said, the efficiencies claimed in relation to innovation can be too speculative[45] and it is the discretionary power of the authority to determine, based on a thorough examination and understanding of the market, the difference between baseless speculation and predictive analysis. With this respect, ECA follows closely the developments in the literature surrounding the assessment of dynamic efficiencies in different markets. In general, ECA considers that maintaining effective competition is the main driver for innovation and other dynamic improvements in different sectors in particular the digital economy.

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[41] Antitrust Standard, Competition Policy International, Spring 2007, at 47; A. Douglas Melamed, Exclu-sionary Conduct Under the Antitrust Laws: Balancing, Sacrifice, and Refusals to Deal, 20 Berkeley Tech. L.J. 1247, 1267 (2005).

[42] This is not to discredit the potential of innovation in mature markets as it can revive those markets and render them innovative again.

[43] Competition and Consumer Protection Commission, Guidelines for Merger Analysis, 31 October 2018. Available at: https://www.ccpc.ie/business/wp-content/uploads/sites/3/2017/04/CCPC-Merger-Guidelines.pdf.

[44] OECD, Dynamic Efficiencies in Merger Analysis, Policy Roundtables, 15 May 2007, p. 9. Available at: http://www.oecd.org/daf/competition/mergers/40623561.pdf

[45] United States Court of Appeals, District of Columbia Circuit, FTC v. H.J. Heinz Co., 246 F.3d 708, 722–723.

52. Therefore, the assessment of efficiencies by ECA is both static and dynamic, which is necessary in the endeavor of testing whether a proposed transaction may bring benefits to consumers.

5. Remedies

53. In some cases, ECA may find remedies proposed by parties to a transaction sufficient to alleviate the potential harm on competition. Much like most other authorities around the world, ECA will assess, depending on the transaction in question, structural and/or behavioral remedies.

54. When applying to transactions taking place on dynamic markets, ECA is cautious not to manipulate or slow down the natural dynamics of such markets and that it does not accept remedies that regulate a monopoly rather than promote competition. Proposed commitments must be verifiable, transaction-specific and passed on to consumers.[46] Moreover, given the dynamic nature of the markets in question, any commitments must be assessed and updated periodically.

55. Upon receiving remedies from parties to a transaction, ECA will carry out the thorough analysis of static and dynamic aspects explained above. In doing so, ECA will notably carry out market testing, which entails engaging with stakeholders and providing them with a non-confidential version of the proposed commitments, in order to allow them to express their opinions and expertise. This ensures that any decisions taken by ECA are based on the opinions of actual players and experts on the market. In addition, ECA also relies on best practices from other jurisdictions that have studied similar transactions when imposing and studying the remedies provided by the parties.

56. Additionally, any remedies must be reviewed periodically in order to remain accurate and effective; ECA clearly does not aim to over-regulate markets in a way that hinders innovation. Therefore, any accepted remedies must be dynamic so as to not muffle the natural growth on the digital market. Naturally, the market may evolve for reasons unrelated to the remedies, which can change the initial appropriateness or the effectiveness of the commitments. ECL clearly dictates that the (conditional) clearance of a transaction must be reviewed every two years. According to Article 17 of the Executive Regulations of ECL, any exemption granted under Article 6(2) ECL is to last for two years and can revised then after. This allows ECA to adequately and systematically ensure that approved transactions continue to offer economic efficiencies. It also allows ECA to closely monitor any remedies so that it can sufficiently update them in order to keep up with the ever-changing dynamics of digital markets.

57. In order to appropriately address issues on dynamic markets, any remedies accepted by competition authorities must be a result of a static and dynamic study that pictures and predicts the future of the market. As the market evolves, these remedies must be verified and updated so as to not result in over or under-regulation but instead foster innovation.

[46] European Commission, Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings, C031, 5 February 2004, para 86.

6. Conclusion

58. When assessing a merger in a dynamic market, there is a longstanding debate regarding the employment of static and dynamic tools: how they should be combined and when each one of them should be conducted. ECA is not unfamiliar with this debate. When reviewing mergers in digital markets, ECA uses a combination of dynamic and static analyses. Digital markets have specific characteristics that must be taken into account when analyzing a transaction. Moreover, each merger has specific characteristics, so the balance between the static and dynamic tools is case specific. Generally, merger review focuses mostly on analyzing present features in order to envision future effects, such as changes in market structure and, consequently, shifts in the competitive landscape. Exploiting these predictions, ECA accepts and reviews remedies that do not disrupt or manipulate the innovation or dynamics present on the ever-evolving digital market. This does not come without challenges, as these markets are naturally highly innovative and dynamic, making them inherently unpredictable. Nevertheless, ECA aims to capture market dynamics by employing a combination of static and dynamic tools, ensuring that its review of mergers and acquisitions in dynamic digital markets is contemporary and up-to-date with the new realities of the digital world. This is ultimately, ECA's *raison-d'être:* protecting the freedom of competition – which, in recent times, necessitates a thorough understanding of nascent, disruptive, and dynamic markets.