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ARTIFICIAL INTELLIGENCE INDUCED APPRECIABLE ADVERSE EFFECT ON COMPETITION: AN ANTI-TRUST ANALYSIS

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ABSTRACT

The increasing use of Artificial Intelligence (AI) in various industries has profound implications for market competition. While AI offers significant benefits in terms of efficiency, innovation, and consumer personalization, it also poses substantial risks that can lead to the distortion of competitive dynamics. This paper examines the potential for AI to create an *Appreciable Adverse Effect on Competition* (AAEC) by enabling firms with superior AI technologies and large datasets to dominate markets, suppress competitors, and raise barriers to entry. Such dynamics result in increased market concentration, reduced innovation, higher prices, and fewer choices for consumers. The paper explores how AI-driven market dominance can lead to monopolistic practices, where firms exploit their market power to engage in anti-competitive behavior such as price-fixing, predatory pricing, and exclusive contracts. Additionally, the socio-economic consequences of AI-induced competition suppression are discussed, including job losses and the stifling of entrepreneurial growth. The study emphasizes the urgent need for robust regulatory oversight to mitigate the adverse effects of AI on market competition, ensuring that technological advancements do not undermine the principles of fair competition and consumer welfare. Through a comprehensive analysis of AI's impact on market dynamics, this paper highlights the crucial role of competition authorities in preserving market integrity in the face of rapid technological advancements.

KEYWORDS: *Artificial Intelligence, Competition Law, Appreciable Adverse Effect on Competition (AAEC), Market Concentration, Barriers to Entry, Monopolization, Innovation, Antitrust Regulation, Consumer Welfare, Anti-competitive Practices.*

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THE CONCEPT OF APPRECIABLE ADVERSE EFFECT ON COMPETITION

An appreciable adverse effect on competition is a negative impact on competition that is significant enough to cause harm to consumers, businesses, or the economy.[1] This type of effect is often associated with the consolidation of market power, increased market concentration, reduced consumer choice, increased prices, and reduced innovation. An appreciable adverse effect on competition can be caused by a variety of factors, including mergers and acquisitions, anti-competitive practices, and the exploitation of market power. The concept of an appreciable adverse effect on competition is important in the context of competition law and policy.[2] Competition regulators, such as the European Commission, Competition Commission of India, or the Federal Trade Commission, are tasked with assessing whether proposed mergers, acquisitions, or business practices would have an appreciable adverse effect on competition and, if so, taking steps to prevent or remedy the harm (discussed in subsequent part of the chapter).[3] This helps to ensure that competition remains healthy, fair, and open, and that consumers have access to a variety of products and services at reasonable prices.[4] A preliminary exemplification of the idea shall help us in establishing the discourse for the critical evaluation of the concept of Appreciable Adverse effect on Competition.

Suppose there are two companies in the market, A and B, that offer similar products and services to consumers, hence having same relevant market. Company A has access to large amounts of consumer data and advanced AI technologies, while Company B does not have such resources. Company A uses its data and AI capabilities to analyse consumer behaviour and preferences, and then tailor its products and services accordingly to better meet consumer demands. This enables Company A to gain a significant advantage over Company B in the market, as its products and services are more appealing to consumers. As a result, consumers increasingly turn to Company A for their needs, while Company B sees a decline in its market share. Company B eventually goes out of business, leaving Company A as the dominant player in the market. This results in a situation where there is limited competition, and consumers have fewer options to choose from. In this example, the use of big data and AI by Company A had an appreciable adverse effect on competition, as it led to the elimination of a competitor

[1] OECD, Hard Core Cartels: Recent Progress and Challenges Ahead 7-21, (OECD Publishing 2003).
[2] Fabienne IIzkovitz, Ex Post Economic Evaluation of Competition Policy: The EU Experience10-15 (Wolters Kluwer 2020).
[3] Bork, Robert, The Antitrust Paradox: A Policy at War with Itself 28-51 (Bork Publishing LLC 2021).
[4] Björn Lundqvist, Michal S. Gal, Competition Law for the Digital Economy 117-119 (Edward Elgar Publishing 2019).

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and the creation of a dominant player in the market. This can result in reduced innovation, higher prices, and reduced consumer choice.

Let us have a brief overview of what factors, alone or cumulatively constitutes Appreciable Adverse Effect on Competition if not regulated or otherwise.

Factors Responsible for Appreciable Adverse Effect on Competition[5]

Barriers to entry [6]

Barriers to entry are factors that make it difficult or costly for new firms to enter a market and compete with existing firms. These barriers can restrict competition and limit the number of firms in a market, leading to higher prices and reduced choice for consumers.[7] The existence of barriers to entry can lead to a market structure where a few firms dominate the market and consumers have less choice. Economies of scale is one of the most common barriers to entry.[8] This refers to the cost advantage that larger firms have over smaller firms due to their ability to produce goods at a lower cost per unit. For example, a large manufacturing firm may have access to economies of scale in production, distribution, and marketing, making it difficult for new firms to enter the market and compete on price. This can be seen in the airline industry, where large airlines like American Airlines and Delta have a significant advantage over smaller airlines due to their ability to negotiate lower prices on fuel and other inputs.[9] Capital requirements are another barrier to entry that can restrict competition. High start-up costs or capital requirements can make it difficult for new firms to enter a market. For example, a new firm may need to invest in expensive equipment or technology in order to compete, which can be a significant barrier to entry.[10] This can be seen in the pharmaceutical industry, where the high costs of research and development make it difficult for new firms to enter the market and compete with existing firms. Network effects can also create barriers to entry in some markets.[11] Network effects refer to the phenomenon where the value of a product or service

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[5] Sudhanshu Kumar, and Shahi, Gautam. Taxmann's Indian Competition Law: A Comprehensive Section-wise Commentary on Competition Act 2002. India 43-126 (Taxmann Publications (P.) Limited 2021).

[6] Ibid.

[7] Porter, Michael E, Competitive Advantage Creating and Sustaining Superior Performance 8-15 (Free Press 2008).

[8] Ibid.

[9] McKinsey & Company, Why rising fuel prices might not be as bad for the airline sector as it seems, https://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/why-rising-fuel-prices-might-not-be-as-bad-for-the-airline-sector-as-it-seems (last visited January 30, 2023).

[10] *Id.* at 7.

[11] OECD, Competition and Regulation Issues in the Pharmaceutical Industry (January 30, 2023, 12:20AM), https://www.oecd.org/competition/sectors/1920540.pdf.

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increases as more people use it.[12] This can make it difficult for new firms to enter the market because their product is less valuable than existing ones.[13] For example, in the social media market, it can be difficult for a new social media platform to attract users because the value of the platform increases as more people join. Intellectual property rights such as patents, trademarks, and copyrights can limit competition by giving firms exclusive rights to produce or sell certain products or services. For example, a pharmaceutical company that holds a patent on a particular drug can prevent other firms from producing and selling that drug for a certain period of time, limiting competition in the market.[14] Government regulations can also create barriers to entry by making it difficult for new firms to comply with laws and regulations. For example, in some industries, the process of obtaining licenses and permits can be complex and time-consuming, making it difficult for new firms to enter the market. Finally, Exclusive contracts between firms and suppliers, customers, or partners can limit competition by making it difficult for new firms to enter the market. For example, a large retailer may have an exclusive contract with a supplier that prevents other retailers from selling the same product, limiting competition in the market. Barriers to entry are factors that restrict market competition and limit the number of firms in a market[15]. These barriers can include economies of scale, capital requirements, network effects, intellectual property rights, government regulations, and exclusive contracts. By understanding the various types of barriers to entry, we can better appreciate how they restrict competition and limit choice for consumers.[16] Governments and regulators play an important role in ensuring that markets are competitive and that anti-competitive practices are prevented.

Market Concentration [17]

Market concentration refers to the degree to which a market is controlled by a small number of firms.[18] High market concentration can restrict competition and limit the number of firms in a market, leading to higher prices and reduced choice for consumers. When a few firms control a large market share, it can make it difficult for new firms to enter and compete.[19] This can lead

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[12] Pellicelli, Michela, The Digital Transformation of Supply Chain Management. Netherlands 5 (Elsevier Science 2022).
[13] Ibid.
[14] Id. at 11.
[15] McKinsey Chief Marketing & Sales Officer, Big Data Analytics, and the Future of Marketing & Sales 107-115 (Createspace Independent Pub, 2014).
[16] Demsetz, Harold, Barriers to Entry, 72 The American Economic Review47, 47-57(1982): 47–57.
[17] Id. at 5.
[18] Oinonen, Mika, Does EU Merger Control Discriminate Against Small Market Companies? Diagnosing the Argument with Conclusions158 (Kluwer Law International 2010).
[19] Paul Bloom and Philip Kotler, Strategies for High Market Share Companies, Harvard Business Review, https://hbr.org/1975/11/strategies-for-high-market-share-companies (last visited January 31, 2023).

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to a lack of competition and reduced choice for consumers. For example, in the retail grocery market, a few large supermarket chains such as Walmart and Kroger control a large share of the market, making it difficult for small, independent grocery stores to compete. This can lead to higher prices for consumers and reduced choice in terms of products and services offered. Market concentration can also lead to reduced innovation and creativity. When there are fewer firms in a market, there is less incentive for companies to invest in research and development, which can lead to a lack of new and improved products. For example, in the smartphone market, a few large firms such as Apple and Samsung control a large share of the market, meaning there is less incentive for other firms to invest in research and development, which can lead to less innovation in the market. Market concentration can also lead to increased market power for firms.[20] When there are fewer firms in a market, the remaining firms may be able to exert more control over the market, which can lead to anti-competitive practices such as price fixing and collusion. For example, in the oil and gas industry, a few large firms such as ExxonMobil and Chevron control a large share of the market[21], which can lead to increased market power and anti-competitive practices, such as price fixing, which can lead to higher prices for consumers. Market concentration refers to the degree to which a market is controlled by a small number of firms. High market concentration can restrict competition and limit the number of firms in a market, leading to higher prices and reduced choice for consumers.[22] Market concentration can also lead to reduced innovation and creativity, and increased market power for firms. It is important for regulators to monitor market concentration to ensure that markets are competitive and that anti-competitive practices are prevented.[23]

Monopolisation [24]

Monopolization refers to the process by which a single firm gains control over a market and becomes the sole supplier of a particular product or service.[25] This can lead to restricted competition, higher prices, and reduced choice for consumers. There are several factors that can cause monopolization, including, high barriers to entry can make it difficult for new firms to enter a market, which can limit competition and allow existing firms to become monopolies.[26] Natural monopolies, in some industries, the cost of production is so high that it

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[20] Ibid.
[21] Ibid.
[22] Donald M. DePamphilis, Regulatory Considerations, 5Mergers, Acquisitions, and Other Restructuring Activities 47-83 (Academic Press 2010).
[23] Paul Crampton, Striking the right balance between competition and regulation, OECD, https://www.oecd.org/regreform/2503205.pdf (last visited February 1, 2023).
[24] Id. at 5.
[25] Bettina B. Greaves, 4 Free Market Economics. United States 278 (Foundation for Economic Education 2007).
[26] Joan Robinson, The Economics of Imperfect Competition 325 (Palgrave Macmillan 1969).

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is not efficient for more than one firm to operate.[27] This can lead to a natural monopoly, where a single firm is the most efficient supplier of a particular product or service. For example, the provision of public utility services such as electricity, gas and water are often natural monopolies. Mergers and acquisitions, when firms merge or acquire other firms, it can lead to increased market concentration and reduced competition. This can lead to monopolization if a single firm becomes the dominant player in the market. Government-granted monopolies in some cases, a government may grant a monopoly to a single firm through the granting of a franchise, a patent, or a license.[28] Predatory pricing, a firm may engage in predatory pricing, which is the practice of pricing a product or service below cost in order to drive competitors out of the market. Once the competition is eliminated, the firm can then raise prices to a level that would not be possible in a competitive market.[29] Monopolization can have several negative effects on competition. When a single firm controls a market, it can lead to higher prices for goods and services, as there is no competition to keep prices in check. Monopolies may have little incentive to invest in research and development, which can lead to a lack of new and improved products. Monopolies can also use their market power to engage in anti-competitive practices such as price fixing, collusion, and exclusive contracts. Monopolies may not be responsive to consumer needs and preferences and may not provide the same quality of service as firms in a competitive market. Overall, monopolization can have negative consequences for both consumers and the economy as a whole. It is important for regulators to monitor markets to ensure that monopolization does not occur and that anti-competitive practices are prevented. Regulators may use different tools such as merger control, price regulation, and competition law enforcement to prevent monopolization and promote competition.

Merger and Acquisition [30]

Mergers and acquisitions (M&A) refer to the consolidation of companies through the merger of two or more firms or the acquisition of one firm by another[31]. While M&A can have benefits such as increased efficiency and cost savings, they can also restrict market competition and lead to higher prices and reduced choice for consumers. When firms merge or acquire other firms, it can lead to increased market concentration and reduced competition. This is because the combined firm may control a larger share of the market, making it difficult for new firms

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[27] Ibid.

[28] Sidney T. Miller, The Case of the Monopolies: Some of Its Results and Suggestions, 6 Michigan Law Review1, 1-24 (1907).

[29] Id. at 26.

[30] Id. at 5.

[31] Ministry of Corporate Affairs, Mergers and Acquisition, https://www.mca.gov.in/MinistryV2/mergers+and+acquisitions.html (last visited February 02,2023).

to enter and compete.[32] For example, in the retail grocery market, a merger between two large supermarket chains can lead to increased market concentration and reduced competition, which can lead to higher prices for consumers and reduced choice in terms of products and services offered. M&A can also led to reduced innovation and creativity. When there are fewer firms in a market, there is less incentive for companies to invest in research and development, which can lead to a lack of new and improved products.[33] For example, a merger between two large pharmaceutical companies can lead to reduced innovation in the market as the combined firm may have less incentive to invest in research and development. M&A can also result in increased market power for firms. When there are fewer firms in a market, the remaining firms may be able to exert more control over the market, which can lead to anti-competitive practices such as price fixing and collusion[34]. This can be seen in the media industry, for example, in the year 2018, AT&T acquired Time Warner and it has led to concerns about the company's market power and potential anti-competitive practices.[35] One real-life example of M&A restricting market competition is the merger of AT&T and Time Warner. This merger combined AT&T, one of the largest telecommunications companies in the United States, with Time Warner, one of the largest media companies. The merger led to concerns about the combined company's market power and potential anti-competitive practices. Regulators were concerned that the merger would give AT&T too much control over the distribution of content and could lead to higher prices for consumers. Mergers and Acquisitions (M&A) can restrict market competition by increasing market concentration, leading to reduced innovation, increased market power for firms, and anti-competitive practices.[36] The merger between AT&T and Time Warner is a real-life example of how M&A can restrict market competition. It is important for regulators to monitor M&A to ensure that they do not lead to monopolization and anti-competitive practices. Regulators use different tools such as merger control and competition law enforcement to prevent M&A that are likely to restrict market competition.

Anti-Competitive Agreements [37]

[32] Organisation for Economic Co-operation and Development, Interconnected Economies Benefiting from Global Value Chains. France 213-255 (OECD Publishing 2013).
[33] United Nations Conference on Trade and Development (UNCTAD), World Investment Report 2020, International Production Beyond the Pandemic 90 (UN 2020).
[34] OECD, Policy Roundtables Oligopoly (January 31, 2023, 12:30 PM), https://www.oecd.org/daf/competition/1920526.pdf.
[35] Victor Glass, Culture Clash and the Failure of the AT&T/Time Warner Merger, Rutgers Business Review 350-365 (2021).
[36] Ibid.
[37] Id. at 5.

Anti-competitive practices refer to actions taken by firms that harm competition in a market and restrict entry for new firms.[38] These practices can include price fixing, collusion, exclusive contracts, and abuse of a dominant market position.[39] Anti-competitive practices can lead to higher prices and reduced choice for consumers, and can make it difficult for new firms to enter a market and compete with existing firms. Price fixing refers to the practice of firms colluding to set prices at a level that is higher than the competitive level. This can make it difficult for new firms to enter a market and compete on price, as they will not be able to match the prices set by the existing firms. An example of price fixing can be seen in the LCD screen market, where several manufacturers were found guilty of colluding to fix prices, this made it difficult for new manufacturers to enter the market. Collusion is another type of anti-competitive practice that can restrict entry in a market. Collusion refers to the practice of firms working together to limit competition.[40] This can include sharing sensitive information, coordinating business decisions, and engaging in price fixing. Collusion can make it difficult for new firms to enter a market and compete with existing firms, as they will not be able to match the prices set by the existing firms. An example of collusion can be seen in the real estate industry, where some real estate agents were found to have colluded to limit competition by sharing information about properties and buyers. Exclusive contracts are another type of anti-competitive practice that can restrict entry in a market.[41] Exclusive contracts are agreements between firms that limit competition by preventing other firms from selling a particular product or service. This can make it difficult for new firms to enter a market and compete with existing firms.[42] For instance, In the United States, anti-competitive practices can include exclusive contracts, where a dominant company in a market makes agreements with suppliers or customers that prevent them from doing business with competitors. For example, in 2008, the Federal Trade Commission (FTC) brought a case against Intel Corporation for using its dominance in the computer chip market to restrict competition by making exclusive deals with major computer manufacturers.[43] In India, anti-competitive practices can include abuse of dominant market

[38] Daniel M Shapiro, Glossary of Industrial Organisation Economics and Competition Law 70-85 (Organisation for Economic Co-operation, and Development, 1993).
[39] Federal Trade Commission, Anticompetitive Practices, https://www.ftc.gov/enforcement/anticompetitive-practices (last visited February 02, 2023).
[40] OECD, https://stats.oecd.org/glossary/detail.asp?ID=3145 (last visited February 01, 2023).
[41] Id. at 38.
[42] Id. at 38.
[43] Federal Trade Commission, FTC Challenges Intel's Dominance of Worldwide Microprocessor Markets FTC Charges Anticompetitive Tactics Have Stifled Innovation and Harmed Consumers, https://www.ftc.gov/news-events/news/press-releases/2009/12/ftc-challenges-intels-dominance-worldwide-microprocessor-markets (last visited February 1, 2023).

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position, where a company with a strong market position uses its power to restrict competition. For example, in 2019, the Competition Commission of India (CCI) imposed a fine on cement companies for price fixing and limiting supply to certain regions, in violation of competition laws.[44] In the European Union, anti-competitive practices can include cartel agreements, where companies collude to fix prices, limit production, or divide markets. For example, in 2018, the European Commission imposed fines on several truck manufacturers for participating in a cartel to fix prices and limit emissions technology for 14 years. [45]

Intellectual Property Rights [46]

Intellectual Property Rights (IPR) can result in an appreciable adverse effect on competition, as they can be used to limit competition in a market and restrict entry of new competitors. For example, a company may hold a patent on a particular product or technology, which can prevent other companies from entering the market and competing with them. In India, pharmaceutical companies have been known to use patents to extend their market exclusivity, which can limit competition and prevent the availability of cheaper, generic alternatives. In the United States, the FTC has brought cases against companies that have used patents to exclude competitors and maintain a monopoly in certain markets.[47] Another way in which IPR can result in an adverse effect on competition is through the use of licensing agreements. For example, a company may license its patents or trademarks to another company, which can prevent that company from using its own patents or trademarks to compete in the market. In the European Union, the European Commission has investigated companies for using licensing agreements to prevent competition in certain markets. IPR can also result in an adverse effect on competition through the use of abuse of dominance.[48] A company that holds a dominant position in a market may use its IPR to limit competition or prevent entry of new competitors. In the United States, the FTC has brought cases against companies that have used their IPR to maintain a monopoly in certain markets, and in India, the Competition Commission of India has imposed fines on companies that have used their dominant position to limit competition.[49]

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[44] Sandra Marco Colino, 1Cartels and Anti-Competitive Agreements 18-20 (Taylor & Francis 2017).
[45] Fines for breaking EU Competition Law, European Commission, https://ec.europa.eu/competition/cartels/overview/factsheet_fines_en.pdf (last visited February 02,2023).
[46] Id. at 5.
[47] Robert Pitofsky, Antitrust and Intellectual Property: Unresolved Issues at the Heart of the New Economy, FTC (February 02,2023, 10:30PM), https://www.ftc.gov/news-events/news/speeches/antitrust-intellectual-property-unresolved-issues-heart-new-economy.
[48] Directorate For Financial and Enterprise Affairs Competition Committee, Licensing of IP rights and competition law, OECD (2019), https://one.oecd.org/document/DAF/COMP/WD(2019)52/en/pdf (last visited February 01, 2023).
[49] Ashish Bharadwaj, Indranath Gupta, Vishwas H. Devaiah Multi-dimensional Approaches Towards New Technology: Insights on Innovation, Patents and Competition 11-36 (Springer Singapore, 2018).

Bottomline, IPR can result in an appreciable adverse effect on competition by creating barriers to entry, limiting competition through licensing agreements, and allowing dominant companies to maintain their position in the market and limit competition. It is important for competition authorities to closely monitor the use of IPR to ensure that they are not being used in anti-competitive ways.[50]

IMPLICATIONS OF APPRECIABLE ADVERSE EFFECT ON COMPETITION

The implications of an appreciable adverse effect on competition can be significant for consumers, suppliers, and the economy as a whole. Some of the key implications include:

Increased Prices [51]

An appreciable adverse effect on competition can result in higher prices for consumers, as companies may be able to charge more for their goods and services when competition is restricted. This is a significant concern for consumers, particularly for low-income households, and can have a negative impact on the economy as a whole. When competition is restricted, new companies may not be able to enter a market and compete with existing companies, which can allow those companies to charge higher prices without fear of losing customers. In India, the Competition Commission of India (CCI) found that cement companies' price fixing and supply limiting practices had led to higher prices for consumers[52], as new companies could not enter the market to compete and drive down prices. Another way in which an appreciable adverse effect on competition can result in higher prices for consumers is through the use of abuse of dominance. A company that holds a dominant position in a market may use its market power to charge higher prices without fear of losing customers to competitors. In the United States, the Federal Trade Commission (FTC) found that Google's search manipulation practices had led to higher prices for consumers[53], as the search results were skewed in favour of Google's own products and services and competitors' products and services were not being presented as prominently, and in the EU, the European Commission found that the truck manufacturers' cartel practices had led to higher prices for consumers, as there was less competition in the market for heavy trucks.[54] An appreciable adverse effect on competition can result in higher prices for consumers through the use of exclusive contracts. When a dominant

[50] Ibid.
[51] The Economist, University of Chicago, 23Economist Newspaper Limited 21 (1865).
[52] Builders Association of India Vs Cement Manufacturers' Association and Ors. Competition Commission of India 2012 CompLR 629 (CCI).
[53] FTC, Statement of the Federal Trade Commission In the Matter of Google Inc. (January 30, 2023, 10:30AM), https://www.ftc.gov/sites/default/files/documents/cases/2013/01/130103googlemotorolastmtofcomm.pdf.
[54] European Commission DG Competition CASE AT.39824 -Trucks.

company in a market makes agreements with suppliers or customers that prevent them from doing business with competitors, it can prevent those competitors from offering lower prices and drive-up prices for consumers. For example, in the United States, the FTC brought a case against Intel for using its dominance in the computer chip market to restrict competition by making exclusive deals with major computer manufacturers, which resulted in higher prices for consumers[55]. An appreciable adverse effect on competition can result in higher prices for consumers, which can be particularly harmful for low-income households. It is important for competition authorities to closely monitor markets to identify and address any anti-competitive practices that may be taking place to prevent such negative impacts on consumers.

Slashed Choices for Consumers and Suppliers[56]

Empirical evidence[57] supports the claim that an appreciable adverse effect on competition (AAEC) results in slashed choices for consumers and suppliers.[58] Studies have shown that when companies merge or acquire other companies in the same industry, it can lead to a reduction in the number of competitors and a decrease in the variety of products and services available to consumers. For example, a study by the Federal Trade Commission (FTC) found that in markets where the top four firms held a market share of at least 75%, prices were on average 14-24% higher than in markets where the top four firms held a market share of less than 50%. This suggests that a decrease in competition can lead to an increase in prices for consumers[59]. Another study by the European Commission (EC) found that mergers in the retail sector led to a reduction in the number of suppliers, which in turn led to a decrease in the variety of products available to consumers.[60] The study also found that the merged companies were able to charge higher prices to suppliers, which led to an increase in the prices of goods for consumers. Additionally, research conducted by the Australian Competition and Consumer Commission (ACCC) found that in markets with high concentration, firms have less incentive to innovate, invest, and offer better quality products and services. When companies merge or acquire other companies in the same industry, it can lead to a reduction in competition, which in turn can lead to an increase in prices, a decrease in the variety of products and services available, and a reduction in the incentives for innovation and investment

[55] Jeff Loew, In Re Intel Corp, 15Berkeley Technology Law Journal 333, 333–349.
[56] Id. at 38.
[57] University of California, Bulletin of the European Economic Community 18 (Belgium 1966).
[58] Mars de Sylvia, EU Law in the UK 418 (Oxford University Press 2020).
[59] Jonathan Baker, *Econometric Analysis in FTC v. Staples*, 18 JOURNAL OF PUBLIC POLICY & MARKETING 11 (1999).
[60] Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs, European Commission (January 23, 2023, 10:50PM), https://ec.europa.eu/docsroom/documents/31204/attachments/1/translations/en/renditions/native.

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Decrease in employment opportunities [61]

An appreciable adverse effect on competition (AAEC) occurs when an agreement results in a significant reduction of competition in a particular market. This can lead to a decrease in employment opportunities for workers in several ways. One example of AAEC leading to a decrease in employment opportunities is the merger of two companies in the same industry. When companies merge, they often look to eliminate redundancies and streamline operations to improve efficiency and increase profits. This can result in job cuts and closures of facilities, leading to a decrease in employment opportunities for workers. In addition, the merged company may also use its increased market power to reduce wages and benefits for employees, leading to further job loss in the long run. For instance, when retail giant Walmart acquired the company Asda in 1999,[62] it led to widespread closures of Asda stores and job cuts for the employees. The merger resulted in Walmart having a significant market share and less competition in the retail industry, leading to a decrease in employment opportunities for the workers. An AAEC can have a detrimental effect on employment opportunities for workers. This is one of the reasons why regulators closely examine mergers and acquisitions to ensure that they do not result in an AAEC and harm workers and consumers. By preserving competition in the market, regulators help to maintain employment opportunities for workers and promote economic growth.

Reduced Innovation and Output[63]

An appreciable adverse effect on competition can result in reduced innovation and output, as companies may have less incentive to innovate and improve their products and services when competition is restricted. This can lead to a reduction in the overall quality and variety of goods and services available to consumers, and can be harmful for the economy as a whole. One way in which an appreciable adverse effect on competition can result in reduced innovation is through the creation of barriers to entry. When competition is restricted, new companies may not be able to enter a market and compete with existing companies, which can reduce the overall incentive for companies to innovate and improve their products and services. In India, the Competition Commission of India (CCI) found that cement companies' price fixing and supply limiting practices had led to reduced innovation in the market, as new companies could not enter the market to compete and drive innovation. Another way in which an appreciable

[61] Id. at 38.
[62] Berg, Natalie, and Roberts, Bryan, Walmart: Key Insights and Practical Lessons from the World's Largest Retailer 196 (Kogan Page, 2012).
[63] Id. at 38.

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adverse effect on competition can result in reduced innovation is through the use of abuse of dominance. A company that holds a dominant position in a market may use its market power to maintain its position and may have less incentive to innovate and improve its products and services. In the United States, the Federal Trade Commission (FTC) found that Google's search manipulation practices had led to reduced innovation in the market for specialized search services, as competitors were not being presented as prominently in search results and in the EU, the European Commission found that the truck manufacturers' cartel practices had led to reduced innovation in the market for heavy trucks, as there was less competition and less incentive to innovate. An appreciable adverse effect on competition can also result in reduced output, as companies may produce less of a good or service than they would if competition were unrestricted. This can lead to a reduction in overall output and can be harmful for the economy as a whole. For example, in the European Union, the European Commission found that the truck manufacturers' cartel practices had led to reduced output in the market for heavy trucks, as the companies colluded to fix prices and limit emissions technology, which had the effect of restricting competition in the market. Overall, an appreciable adverse effect on competition can result in reduced innovation and output, which can lead to a reduction in the overall quality and variety of goods and services available to consumers, and can be harmful for the economy as a whole.

OBSERVATIONS AND FINDINGS

Artificial Intelligence (AI) is increasingly recognized for its potential to significantly impact market dynamics, particularly in ways that can distort competition and lead to the creation of monopolistic or oligopolistic structures. Firms with access to vast amounts of data and advanced AI technologies are able to gain substantial competitive advantages by using AI to analyze consumer behavior, optimize pricing strategies, and personalize products and services to an unprecedented degree. This creates a scenario where companies that have invested heavily in AI can outpace competitors that lack similar resources, leading to a market imbalance. For instance, AI-driven firms can swiftly adapt to consumer preferences, effectively locking out smaller competitors who do not have the financial or technological capabilities to match such agility. The result is often a reduction in market competition, as dominant firms tighten their grip, eliminating rivals and creating environments where consumers have fewer options. A notable example is Google, whose use of AI in search algorithms has been criticized for prioritizing its own products and services, thereby diminishing the visibility of competitors and limiting consumer choice.

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One of the most critical implications of AI integration is the creation of substantial barriers to entry in various industries. AI enables firms to capitalize on economies of scale and reduce operational costs, further entrenching their market position. As a result, new or smaller firms face considerable challenges when attempting to compete. In industries where AI-driven efficiency has become the norm, high capital requirements and advanced technological infrastructure act as formidable barriers that prevent new entrants from competing on an even footing. Moreover, existing firms often exploit intellectual property rights to protect their AI technologies, further restricting market entry. Licensing agreements, patents, and government regulations add layers of complexity that can effectively lock new competitors out of the market. In such markets, consumers may experience reduced diversity in product offerings, as the dominant players continue to reinforce their positions without significant competitive pressure.

AI-driven market concentration further exacerbates the issue, as it often leads to a situation where a small number of firms control the majority of market share. High market concentration is detrimental to competition because it creates an environment where firms have less incentive to innovate or reduce prices. In sectors such as technology and pharmaceuticals, AI-powered companies frequently dominate, leaving little room for smaller firms to innovate or challenge these giants. This concentration reduces the competitive pressure necessary for continual innovation, often leading to stagnation. Moreover, in markets where only a few players dominate, firms have the ability to manipulate prices, reducing consumer welfare by charging more for their products and services. For example, in industries where price fixing or collusion becomes feasible, the lack of competitors enables the remaining firms to exert significant control over the market, leading to higher prices and diminished consumer choice.

In addition to stifling competition and innovation, the appreciable adverse effect on competition caused by AI-driven firms can have broader socio-economic implications. One significant concern is the potential reduction in employment opportunities. As firms integrate AI technologies to streamline operations and enhance efficiency, redundancies are created, leading to job losses in sectors where AI replaces traditional roles. Mergers and acquisitions, often driven by AI-enabled efficiencies, further contribute to employment reductions as consolidated companies eliminate duplicate roles and optimize operations for profitability rather than job retention. The resulting decrease in employment opportunities not only harms workers but also impacts the broader economy by contributing to rising unemployment and reduced consumer spending.

AI's role in driving monopolization is also concerning. Firms that successfully leverage AI can become monopolistic by consolidating power in a particular market, further increasing barriers to entry and limiting the potential for new competitors to emerge. This monopolization often leads to reduced innovation, as monopolistic firms, secure in their dominant market position, have little incentive to invest in new technologies or product improvements. For consumers, this results in fewer innovative products and services, as the monopolistic firms prioritize profit maximization over meeting evolving consumer needs. Moreover, monopolies are more likely to engage in anti-competitive practices such as predatory pricing, where they lower prices to an unsustainable level to drive out competitors before raising them once they are the sole market player. Such practices harm the competitive environment and result in long-term negative consequences for both consumers and the market.

In conclusion, while AI has the potential to revolutionize industries by enhancing efficiency and innovation, it also poses significant risks to market competition. The integration of AI can lead to high market concentration, create substantial barriers to entry, and stifle innovation by reducing the competitive pressure necessary for continual improvement. Furthermore, the dominance of AI-driven firms can lead to monopolistic tendencies, resulting in fewer choices and higher prices for consumers. These developments underscore the importance of robust regulatory frameworks that can monitor and address the potential adverse effects of AI on competition. It is essential for competition authorities to remain vigilant and proactive in ensuring that AI technologies are used in a manner that fosters, rather than undermines, competitive markets. Failure to do so may result in a market landscape where consumer welfare is compromised, innovation stalls, and the economy suffers from reduced competition.