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THE FINANCIAL-THEORETICAL FRAMEWORKS OF THE ANTI-MONOPOLY REGULATION IN THE DIGITAL ECONOMY

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Abstract: This paper explores the transformation of anti-monopoly regulation through the lens of financial-theoretical frameworks in the context of the digital economy. As platform-based business models reshape market structures and consolidate power, traditional theories of competition and regulation face limitations. The study reviews classical, neoclassical, and modern competition theories, evaluates key international regulatory approaches, and highlights the inadequacies of financial models in addressing data-driven dominance. It proposes a multidisciplinary strategy that combines finance, law, and data science to guide effective policy for digital markets.

Key words: Digital economy, Anti-monopoly regulation, Platform economy, Market power, Data monopoly

INTRODUCTION

In the era of digital transformation, traditional market structures are being reshaped by digital platforms, big data, and algorithmic decision-making. According to International Data Corporation, by 2027, spending on digital transformation is expected to grow to \$3.9 trillion. This digital revolution has changed many aspects of our lives, including communication and information exchange on social networks such as Facebook, Messenger, LinkedIn, Instagram, Telegram, WhatsApp, shopping on Amazon, Wildberries, Uzum Market, advertising on OLX and other networks. Today, a new era of economic relations has begun, which has given rise to digital markets as a modern way of exchanging goods and providing services. As a result, digital platforms in the digital market have become key players in this landscape, changing traditional networks and influencing consumer and business behavior.

Digital platforms such as online marketplaces, social media sites, search engines and app stores are increasingly important in our daily lives. These platforms offer a wide range of services that are convenient, accessible and responsive to our changing needs and preferences. By connecting billions of users worldwide, digital platforms have opened up significant opportunities for businesses to reach and engage with consumers in ways that were previously impossible. However, along with the benefits and opportunities, the dominance of digital platforms has also raised concerns and challenges that need to be addressed through regulation. A few powerful platforms have gained unprecedented market power, which can lead to unfair competition, concentration of economic power and potential harm to consumers. These platforms often control valuable data, which allows them to shape markets, influence user behavior and limit consumer choices.

The transition of the economy from traditional markets to a digital economy “erases” the geographical boundaries of markets and defines new rules of operation and behavior of market participants. Compliance of these behaviors with competition law requires a new type of antitrust regulatory state policy. Large tech firms such as Google, Amazon, and Alibaba now wield immense economic power, often dominating the entire market segments. These developments have raised significant concerns about monopolistic behavior and the effectiveness of traditional anti-monopoly regulation grounded in classical financial theory. This paper aims to explore the transformation of anti-monopoly regulation within the context of the digital economy, focusing on how financial-theoretical foundations must evolve to ensure effective market regulation.

LITERATURE REVIEW

Literature analysis shows that the study of competition theory stems from the specific aspects of competition in each era. Scholars of each era developed theories of competition that were appropriate for that time. Based on this, *classical* (traditional), and *neoclassical competition* theories were formed. However, today, *modern competition* theories have also developed and are influencing the methods and instruments of competition.

Classical (traditional) competition theories which date back to the 18th and 19th centuries emphasize concepts such as perfect competition, in which there are many small firms, homogeneous products, perfect information, and no barriers to entry or exit. Classical (traditional) theories of competition have been studied and developed by scientists and economists around the world including the foundations of classical competition theory, Adam Smith's "Theory of the Invisible Hand" and David Ricardo's "Theory of Comparative Advantage".

Neoclassical theories of competition developed in the late 19th and early 20th centuries, expanded upon classical economics. They introduced concepts such as imperfect competition, monopoly, oligopoly, and monopolistic competition. Economists such as Alfred Marshall and Léon Walras are considered to have advanced these theories. These scholars, along with others, developed neoclassical theories of competition and contributed to the development of modern economics. Their work continues to shape economic analysis and policy debates around the world.

Modern theories of competition cover a wide range of perspectives that have developed since the 20th and 21st centuries. These theories include game theory, integration-based competition (based on mutual relations and cooperation), innovation-based competition, digital economy-based competition, and green economy-based competition. They recognize that world markets are often characterized by imperfect competition, strategic behavior, innovation, and regulation. These theories go beyond the assumptions of perfect competition and include a variety of factors, including market power, strategic behavior, innovation, and government regulation.

Modern competition theories form a dynamic and diverse area of economics that builds classical foundations to address the complexities of today's markets. These theories explore how firms compete in the digital economy, emphasizing the impact of network effects, platform strategies, and technology. Innovation economics highlights the role of research and development in gaining competitive advantages. Overall, modern theories incorporate factors such as psychology, sustainability, and digital transformation to offer deeper insights into competitive dynamics in the 21st century.

Research into anti-monopoly regulation has traditionally relied on price theory, market structure analysis, and efficiency considerations (Tirole, 2014). However, in the digital economy, these tools often fall short. Scholars such as Stiglitz (2017) emphasize the growing importance of information asymmetry, while Zuboff (2019) criticizes the extraction and commercialization of personal data in digital markets. The OECD (2021) and the World Bank (2022) advocate for new regulatory frameworks that address the unique attributes of digital platforms, including network effects, data monopolies, and platform envelopment strategies.

Recent academic discourse suggests an urgent need to integrate concepts such as data as a factor of production, intangible asset valuation, and the economics of platform ecosystems (Evans & Schmalensee, 2016; Khan, 2017). These theories push the boundaries of traditional competition models and require a reevaluation of existing financial-theoretical tools in regulatory design.

RESEARCH METHODOLOGY

This research employs a qualitative-comparative methodology, analyzing secondary data from regulatory bodies, academic literature, and case studies of dominant digital firms. Financial-theoretical analysis is combined with digital economy frameworks to assess the effectiveness of anti-monopoly regulation in various jurisdictions including the EU, USA, and China.

The case study analysis focuses on regulatory approaches toward companies like Google, Amazon, and Tencent. The methodology incorporates institutional economics, behavioral finance, and neoclassical models modified for digital market dynamics.

ANALYSIS AND RESULTS

Financial-Theoretical Limitations in Digital Markets

Traditional financial theory, with its assumptions of rational behavior and perfect information, struggles in markets dominated by algorithms and data-driven strategies. Value is no longer solely tied to marginal cost or physical assets but increasingly to data aggregation and user engagement metrics. This shift challenges classical monopoly theories, which focus on price manipulation and cost structures. Anti-Monopoly Challenges in the Digital Economy

Key regulatory challenges include data monopolization, algorithmic pricing, and vertical integration of services. For instance, Amazon's ability to leverage sales data to outcompete third-party sellers on its platform exemplifies digital age predatory behavior. Similarly, Google's dominance in search advertising through data control reflects power far beyond traditional market share metrics (table 1).

Table 1. Comparative Overview of Anti-Monopoly Regulations in Digital Markets

Region	Key Regulation	Focus Areas	Implementation Year
EU	Digital Markets Act	Gatekeeper control, platform fairness	2022
USA	FTC Tech Investigations	Market dominance, mergers	2021
China	Anti-Monopoly Amendments	Data abuse, platform exclusion	2021
UK	Digital Markets, Competition and Consumers Bill	Pro-competitive regime for digital firms	2023 (ongoing approval)
Japan	Act on Improving Transparency and Fairness of Digital Platforms	Fair trading practices, data handling	2021
South Korea	Fair Trade Commission Reforms	App store policies, anti-competitive conduct	2022
Australia	ACCC Digital Platform Services Inquiry	Consumer choice, algorithmic transparency	2021
India	Competition (Amendment) Act	Digital mergers, market data scrutiny	2023
Canada	Competition Act Modernization	Big tech dominance, merger thresholds	2022–2023 (phased)
Germany	GWB Digitization Act (10th Amendment)	Abuse control for digital giants	2021

Toward a New Regulatory Paradigm

To address these challenges, emerging regulations focus on real-time algorithm monitoring, transparency mandates, and structural separation of platform services. Financial theory must adapt by integrating data as a key asset class, revising risk models to incorporate AI behavior, and employing behavioral insights to understand consumer manipulation in digital spaces.

Deepening the Analysis: Structural Power and Cross-Market Effects

Digital monopolies exhibit a type of “structural power” that extends beyond pricing strategies. By controlling digital infrastructure cloud services, app ecosystems, and algorithmic recommendation engines—tech giants exert influence over adjacent markets. For example, Apple’s App Store ecosystem affects both app developers and payment systems, giving Apple leverage to impose fees and prioritize its own applications.

Another emerging issue is “cross-market dominance,” where companies extend their power by entering multiple verticals. Amazon not only dominates e-commerce but also controls logistics, digital advertising, and cloud computing (AWS). This multifaceted control makes it harder for regulators to apply traditional market definitions, which usually focus on single-industry analysis. Additionally, “self-preferencing” practices, where platforms prioritize their own products or services (e.g., Google Search promoting Google Maps), distort fair competition and undermine consumer choice. Financial models based solely on cost curves and price elasticity fail to grasp these subtleties, underscoring the need for regulatory innovation.

Empirical Trends and Consumer Impact

Recent data shows that market concentration in the digital economy has reached historic highs. According to the IMF (2023), the top 10 global tech companies hold over 80% of platform-based revenue. This concentration has led to higher barriers for new entrants and increasing dependence of users and businesses on a handful of platforms. Consumer impact is also significant (figure 1).

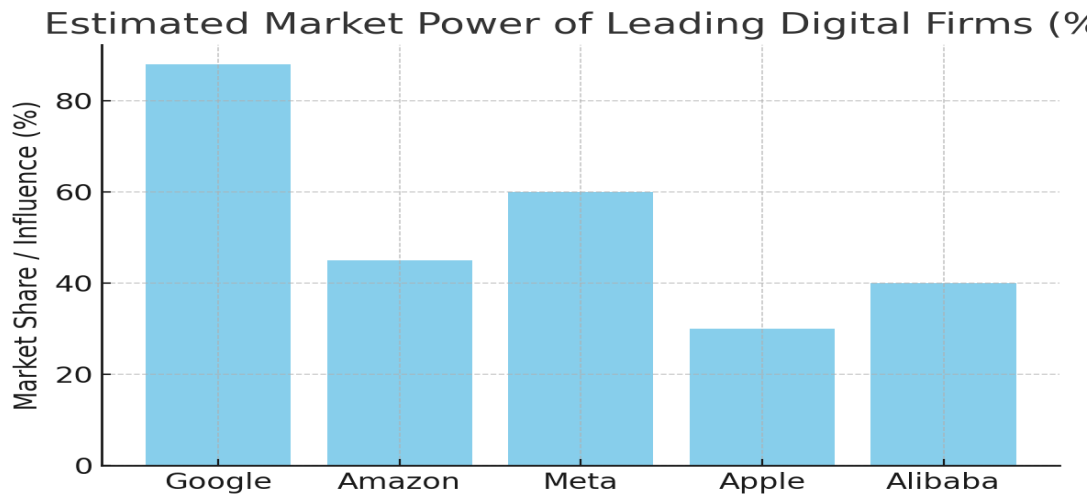


Figure 1. Estimated Market Power of Leading Digital Firms. Source: Compiled from OECD, 2023.

While users often benefit from free services, they pay indirectly through loss of privacy, reduced market choice, and manipulation via algorithmic targeting. Financially, this introduces hidden costs not accounted for in classical consumer surplus models.

CONCLUSION

The foundations of anti-monopoly regulation are under significant strain in the digital economy. As data becomes the central asset and platforms control entire ecosystems, regulators must revise their conceptual and analytical tools. This article underscores the need for dynamic, multi-disciplinary approaches to competition policy - blending finance, data science, and legal theory - to ensure fair and competitive digital markets.

The digital economy has redefined the boundaries of market control and competitive behavior, revealing critical gaps in traditional financial and regulatory theories. Unlike the tangible asset-based models of the 20th century, today's monopolies thrive on intangible resources like data, algorithms, and user networks. These monopolies operate globally, grow rapidly, and evade detection through vertical integration and market envelopment strategies.

Addressing these realities demands a holistic rethinking of anti-monopoly policy. Financial-theoretical models must integrate principles from behavioral economics, data science, and AI ethics to analyze new dimensions of dominance. Regulatory frameworks should evolve to include real-time algorithm audits, structural separations, platform neutrality laws, and global coordination mechanisms. Ultimately, the effectiveness of anti-monopoly regulation in the digital age will depend on governments' ability to craft flexible, proactive policies that anticipate rather than react to digital innovation. Only by combining financial theory with empirical digital insights can policymakers ensure fair competition, economic resilience, and consumer protection in a digital-first world.

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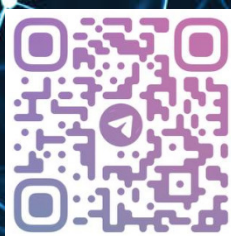
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