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ANTITRUST ENFORCEMENT IN THE DIGITAL ECONOMY: FROM GLOBAL TRENDS TO GOOGLE'S FINES

Abstract

The rapid expansion in the digital economy is reshaping markets around the world and attracting more regulatory attention to ensure fair competition and prevent monopolistic practices. This paper aims to provide a comprehensive analysis of antitrust actions in the digital market, focusing on global trends and specific high-profile cases. The purpose is to examine the distribution of antitrust activity by country income level, geographic region, type of infringement (mergers, abuse of dominance, restrictive agreements), and affected companies to understand broader patterns in global competition policy. Utilizing descriptive analysis and case study methods, this paper explores the significance of these trends and delves into two major actions involving Google – Google Shopping and Google Android – as this company has both the highest number of antitrust investigations and the two largest fines imposed by the European Commission. The results emphasize the critical need for adaptable and enforceable competition policies in digital markets, where dominance by a few large players often challenges market fairness. These insights may inform policy-makers and regulators in developing balanced approaches to competition policy, especially in regulating global tech giants like Google to foster a competitive and innovative digital ecosystem.

Key words: *antitrust, digital economy, market power, Google*

JEL classification: L40, L86, K21

СПРОВОЂЕЊЕ АНТИМОНОПОЛСКЕ ПОЛИТИКЕ У ДИГИТАЛНОЈ ЕКОНОМИЈИ: ОД ГЛОБАЛНИХ ТРЕНДОВА ДО КАЖЊАВАЊА GOOGLE-А

Апстракт

Брза експанзија дигиталне економије преобликује тржишта широм света и привлачи све већу регулаторну пажњу у погледу обезбеђивања

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фер конкуренције и спречавања монополске праксе. Овај рад има за циљ да пружи свеобухватну анализу антимонополских активности на дигиталном тржишту, фокусирајући се на глобалне трендове и специфичне случајеве високог профила. Сврха је да се испита дисперзија антимонополских поступака према нивоу прихода земље, географском региону, врсти прекршаја (недозвољена спајања, злоупотреба доминантног положаја, рестриктивни споразуми) и конкретним компанијама како би се разумели шири обрасци у глобалној политици заштите конкуренције. Користећи дескриптивну анализу и методе студије случаја, овај рад истражује значај наведених трендова и детаљно испитује два карактеристична случаја против компаније Google – Google Shopping и Google Android – будући да ова компанија има највећи број покренутих антимонополских поступака и две највише новчане казне изречене од стране Европске комисије. Резултати наглашавају критичну потребу за прилагодљивим и примењивим политикама заштите конкуренције на дигиталним тржиштима, где доминација неколико великих играча често доводи у питање тржишну праведност. Ови увиди могу да користе креаторима политике и регулаторима у развоју уравнотежених приступа политици заштите конкуренције, посебно у регулисању глобалних технолошких гиганата, као што је Google, како би се подстакао конкурентан и иновативан дигитални екосистем.

Кључне речи: *антимонополска политика, дигитална економија, тржишна моћ, Google*

Introduction

The rapid growth and influence of digital platforms have transformed global markets, sparking fundamental changes in how goods, services, and information are exchanged. Over the past two decades, digital platforms have reshaped the competitive landscape by enabling new business models, accelerating data-driven innovations, and creating highly interconnected market ecosystems. However, these transformative changes have also raised significant concerns around market concentration, competitive fairness, and customer welfare. As some digital companies gain dominant positions within their respective sectors, their market power can stifle competition, limit choices for customers, and reduce incentives for innovation. In response, governments and regulatory bodies worldwide have intensified efforts to examine and address potential anticompetitive behaviors within the digital economy, often resulting in landmark antitrust cases.

This paper delves into the critical role of competition policy in the platform economy by first presenting a comprehensive analysis of global antitrust statistics in digital markets. Through an examination of key data points, including the number and distribution of antitrust cases by region, sector, and specific companies, the study provides an overview of how enforcement practices vary across jurisdictions. This analysis illuminates patterns in regulatory focus, illustrating how competition policy priorities evolve as new challenges emerge in the digital domain.

Following the statistical overview, the paper offers a detailed review of two high-profile antitrust cases against dominant tech player *Google*. These cases represent pivotal moments in competition policy enforcement, each highlighting distinct aspects of regulatory and legal approaches to managing platform dominance. The case studies explore the specific antitrust allegations, the defense arguments presented by the company involved, and the eventual outcomes of these cases, with particular attention to the broader implications for the digital economy. This analysis also considers the impact of these decisions on subsequent policy development, revealing the feedback loop between enforcement actions and regulatory adaptation.

Ultimately, this paper seeks to enhance understanding of the intersection between competition policy and the platform economy, offering insights into the challenges of maintaining fair competition in a landscape increasingly shaped by digital giants. By synthesizing global data and case-specific insights, this study contributes to ongoing discussions regarding the future of competition policy in an era of rapid digitalization, where balancing market dynamism with regulatory oversight remains a critical, yet complex, task.

This paper goes beyond analyzing global trends in antitrust activity within the digital economy, striving also to offer actionable insights for policymakers and regulators. By examining the distribution of cases across income levels, regions, and infringement types, as well as the actions against key players like *Google*, the findings highlight critical areas where regulatory interventions may need to adapt to the unique challenges of the digital market. The study's results offer valuable guidance for shaping policy frameworks that balance market dynamism with fairness, particularly in addressing the dominance of global tech giants. These insights can assist policymakers in identifying priority areas for intervention, crafting region-specific strategies, and ensuring that competition policies remain effective in fostering innovation while safeguarding consumer welfare.

The rise of digital giants: Analyzing corporate and regional concentration in the digital economy

The digital economy has transformed how businesses operate, customers engage, and markets evolve, shaping a new economic landscape that thrives on connectivity and data (Javaid et al., 2024). Driven by rapid technological advancements, it encompasses a wide range of sectors – from e-commerce and social media to online advertising and cloud computing – where digital platforms and services now play central roles (Kraus et al., 2021). Nearly every aspect of modern life has moved online, from shopping and socializing to banking and education, creating a fully interconnected digital ecosystem. According to recent statistics from Forbes (2024), a new website is created every three seconds, more than 71% of businesses now have a web presence, and even 28% of all business activities take place online. This shift has spurred remarkable growth opportunities, yet it has also introduced unique challenges, especially concerning competition and market concentration as a few major players increasingly control key areas (ICC, 2023).

The following table illustrates the current state of global website traffic, highlighting key trends in user engagement as of November 2023 (Statista, 2024b). It

clearly suggests that the digital market is dominated by a few global giants, with data showing that websites like *Google*, *YouTube*, and *Facebook* attract billions of unique monthly visitors. The figures presented highlight the enormous influence of certain platforms, facilitating unprecedented user engagement, but also raising concerns about competition and customer choice.

Table 1: Leading websites worldwide by unique monthly visitors (in billions), November 2023

Site	Number of unique visitors	Company	Country
Google.com	9.01	Google	United States
YouTube.com	5.66	Google	United States
Facebook.com	3.03	Meta	United States
Instagram.com	1.8	Meta	United States
Wikipedia.com	1.69	Wikipedia	United States
Pornhub.com	1.66	Aylo	Canada
Twitter.com	1.53	X Corp.	United States
Xvideos.com	1.27	WGCZ Holding	France
Reddit.com	1.14	Reddit	United States
TikTok.com	1.12	ByteDance	China
Amazon.com	0.92	Amazon	United States
Whatsapp.com	0.86	Meta	United States
Weather.com	0.84	The Weather Channel	United States
Xnxx.com	0.77	WGCZ Holding	France
Bing.com	0.69	Microsoft	United States

Source: Statista (2024b)

Table 1 reveals the overwhelming dominance of a few companies and underscores the concentration of market power within the digital economy, largely anchored in the United States (US). The top websites by unique monthly visitors, led by platforms such as *Google.com* (9.01 billion), *YouTube.com* (5.66 billion), and *Facebook.com* (3.03 billion), showcase the unparalleled reach of US-based technology firms. *Google* and *Meta* alone account for a significant proportion of global web traffic, reflecting these companies' extensive influence over online content, advertising, and data collection. *Google's* presence as the top platform, with both *Google.com* and *YouTube.com* leading in user engagement, exemplifies the strong network effects that make it challenging for smaller competitors to capture significant market share.

The table further highlights that of the fifteen most popular websites, eleven are headquartered in the US, reinforcing the concentration of market influence within a single country. This geographic concentration suggests that competition policy in the US holds a pivotal role in shaping global digital market dynamics. With high-profile firms like *Meta*, *Amazon*, and *Microsoft* among the leaders, the US continues to dominate both in terms of innovation and market power, raising concerns internationally about the degree of influence these companies exert over the global digital ecosystem.

In addition to the US, Table 1 also includes firms from China (*TikTok.com*) and France (*Xvideos.com* and *Xnxx.com*), demonstrating that while a few companies from other countries command substantial traffic, their presence is limited compared to US-based platforms. *TikTok*, operated by China's *ByteDance*, is one of the few non-US platforms to achieve a high ranking, attracting 1.12 billion visitors. *TikTok's* inclusion highlights the competitive impact of a Chinese firm in a market otherwise dominated by US entities. This raises unique considerations for competition policy, as regulatory approaches may differ significantly based on political and economic agendas between countries.

The substantial market concentration seen in Table 1 underscores not only the dominance of specific companies but also points to potential risks associated with limited customer choice, data privacy concerns, and barriers to entry for smaller companies. As US-based firms expand their influence across sectors – from social media to e-commerce, search engines, and cloud services – the challenge of ensuring fair competition intensifies. This concentration of digital market power has spurred significant regulatory attention, with antitrust cases and policy discussions focusing on curbing practices that could harm competitors or reduce innovation.

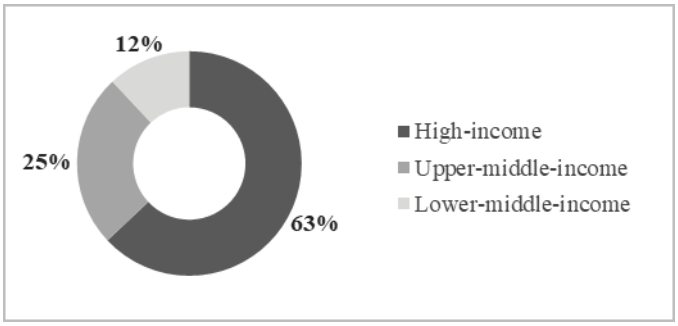
By capturing both the corporate and geographic concentration in the digital marketplace, the presented table serves as a foundation for assessing the implications of such concentrated market power. These insights are essential for understanding how dominant platforms can impact customer access and for guiding the development of robust competition policies that promote a balanced and competitive digital environment.

Mapping antitrust trends: Income, region, and infringement types in digital markets

A high concentration of market share among a few firms does not automatically signal anti-competitive actions. Many leading companies gain their strong market positions through innovation, cost efficiencies, or customer trust (Handoyo et al., 2022; Krstić, Stanišić, & Radivojević, 2016; Spulber, 2023). However, concentrated markets can increase the possibility of dominant players exerting their market power in ways that may restrict competition (Krstić, Radivojević, & Stanišić, 2016a; Krstić, Radivojević, & Stanišić, 2016b). In these situations, companies might engage in practices that hinder new entrants, raise prices, or reduce customer choice. Consequently, regulatory bodies pay close attention to such markets, as high concentration levels may create conditions favorable to practices that could impact competition and customer options negatively.

Moving to the broader picture of digital antitrust enforcement, Figure 1 demonstrates the distribution of antitrust cases by country income level based on World Bank (2024) statistics, showing a significant concentration of cases in high-income nations. This trend suggests that economically advanced countries are more proactive in addressing antitrust concerns in digital markets, likely due to their established regulatory infrastructures and more mature digital economies. This disparity indicates that competition issues in the digital realm may be less visible or less enforceable in low-income regions, where resources and regulatory frameworks might limit antitrust oversight.

Figure 1: Distribution of cases by income level



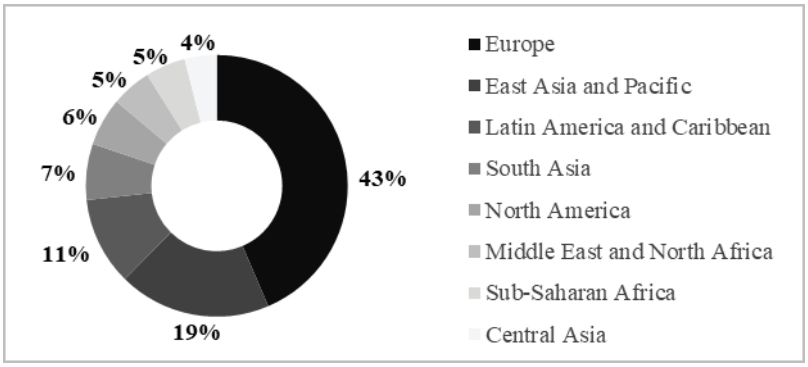
Source: World Bank (2024)

As shown in Figure 1, high-income countries lead significantly, accounting for 63% of all cases. This concentration indicates that wealthier nations tend to prioritize and have greater resources to address anticompetitive behavior, particularly within the digital market, where legislation and institutional capacity are crucial for effective enforcement. Upper-middle-income countries follow, constituting 25% of cases, while lower-middle-income countries represent only 12%.

The disparity in antitrust activity suggests that high-income nations are often the primary enforcers of digital market competition policies. This gap may stem from limited resources and regulatory infrastructure in low- and middle-income countries, which could hinder their ability to monitor and challenge anticompetitive behavior effectively. As digital platforms operate globally, this concentration in high-income regions can lead to gaps in regulatory oversight in lower-income countries, where customer rights and fair market access may remain unprotected. This highlights the need for international collaboration and support to help lower-income countries develop the capability to address antitrust concerns in the digital market.

The following Figure 2 further delves into the regional aspects of this trend, showing that Europe and East Asia and Pacific are at the forefront of antitrust enforcement in digital markets. The figure suggests a general correlation between regions with a high presence of dominant digital platforms and increased regulatory scrutiny. However, this relationship is not consistent in all cases; for instance, while the US hosts the largest number of tech company headquarters, it has comparatively fewer antitrust cases than regions like Europe, which has adopted a more proactive regulatory stance. It confirms the need for more globally coordinated efforts to address the influence of these platforms, as market behaviors in one region can impact competitive conditions worldwide.

Figure 2: Distribution of cases by region



Source: World Bank (2024)

Figure 2 shows that Europe leads with 43% of antitrust cases in the digital market, reflecting its proactive regulatory approach and well-established competition policy. This high percentage likely stems from the EU's strong commitment to regulating digital giants, evident in legislation like the *Digital Markets Act*, which targets large platforms to prevent monopolistic behavior (Andriychuk, 2024; Nicoli & Iosifidis, 2023). Europe's emphasis on protecting customer rights and fostering a competitive market for local businesses also drives extensive regulatory activity.

East Asia and Pacific, with 19% of cases, follows as the second-most active region, largely due to countries like China and Japan, which have increasingly prioritized digital market regulation. China, for instance, has introduced guidelines for the platform economy, focusing on issues like data privacy and abuse of dominance, particularly in response to the rapid growth of companies like *Alibaba* and *ByteDance* (Colino, 2022). Japan has similarly issued guidance on applying competition laws to digital platforms, reflecting the region's heightened focus on addressing the competitive challenges presented by dominant local players (Harada, Nedachi, & Shimada, 2023).

Latin America and Caribbean, accounting for 11%, shows moderate regulatory activity, influenced by growing digital economies in countries like Brazil and Mexico. The region's involvement in antitrust cases reflects an effort to align with global trends and address potential monopolistic behaviors, especially as US and Chinese platforms expand their influence in these markets.

South Asia has a 7% share of antitrust cases, reflecting India's increasing focus on competition within its digital market, driven by the presence of global and regional players. India's regulatory actions aim to create a level playing field for local firms while addressing potential anticompetitive practices by foreign giants.

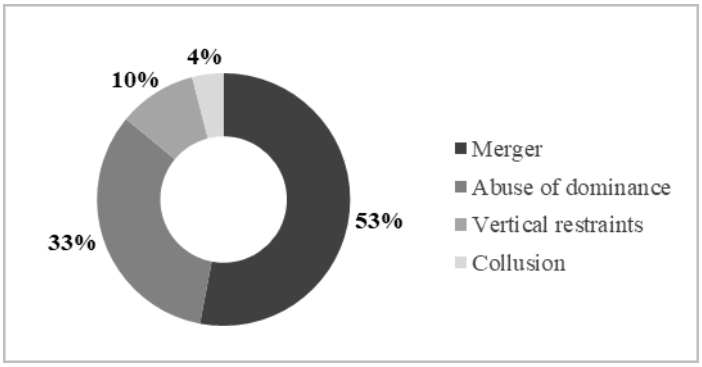
North America surprisingly only represents 6% of antitrust cases, despite housing major digital firms like *Google*, *Meta*, and *Amazon*. This comparatively low percentage might be due to historically relaxed regulatory approaches toward large technology firms and ongoing legislative discussions about how to adapt antitrust laws for the digital era. However, recent trends show increased scrutiny, and future cases may bring North America's share closer to other regions.

Middle East and North Africa (5%), Sub-Saharan Africa (5%), and Central Asia (4%) collectively account for a minor share of cases, reflecting the limited regulatory infrastructure and digital market development in these regions. As digital platforms extend their reach into emerging markets, these areas may need to bolster regulatory frameworks to address competitive challenges. For now, limited resources and economic priorities may lead to less focus on antitrust cases, especially when compared to more economically developed regions.

The distribution of antitrust cases highlights a global disparity in digital market regulation, with Europe and East Asia leading the way, while other regions show varied levels of engagement based on local market dynamics, regulatory capabilities, and economic priorities.

Figure 3 builds on this analysis by presenting the types of antitrust cases in the digital sector, offering a closer look at the specific regulatory issues – such as mergers, abuse of dominance, and restrictive practices – that capture the most attention from competition authorities. Understanding this breakdown offers insight into the specific competitive behaviors that most concern regulators in the context of digital market dynamics.

Figure 3: Distribution of cases by type



Source: World Bank (2024)

The data shown in Figure 3 illustrate that merger cases dominate antitrust actions in the digital market, comprising 53% of cases. This high percentage reflects significant regulatory attention to mergers and acquisitions within the digital sector, where large firms frequently acquire smaller competitors or innovative startups to expand their reach, consolidate their position, and acquire new technologies. Such mergers raise concerns about market concentration, as they can reduce competition by eliminating potential rivals and integrating valuable data and technological assets into already powerful platforms. Given the risk of market monopolization and the potential to stifle innovation, competition authorities often scrutinize mergers closely to protect market dynamism and customer choice.

Abuse of dominance cases account for 33% of antitrust actions, underscoring concerns over how dominant digital platforms may leverage their substantial market power. Dominant firms in the digital space, such as major search engines, social media platforms, and e-commerce sites, can use their position to disadvantage smaller competitors or forcefully enter new markets (Ong & Toh, 2023). Common issues involve

exclusionary tactics, such as restricting access to key infrastructure or prioritizing their own products, which limit opportunities for other players. This focus aligns with previous figures showing high concentration in particular companies and regions, as regulators aim to address behaviors that prevent fair competition.

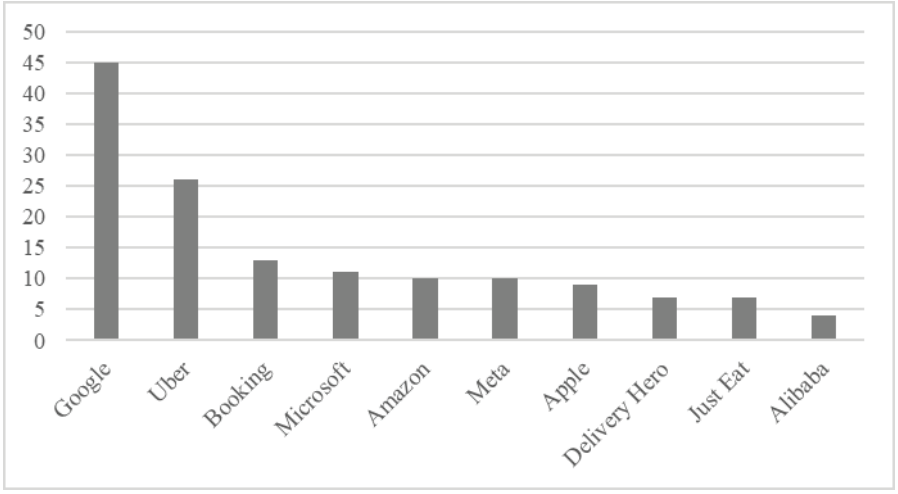
Vertical restraints make up 10% of cases, highlighting concerns over restrictive agreements imposed by dominant digital firms on suppliers or partners, which can impact competition at different levels of the supply chain. In the digital market, vertical restraints may include exclusive contracts or restrictions on pricing policies, limiting the ability of smaller firms to compete on equal footing. This case type reflects how dominant platforms often exert control over various aspects of the market structure, using their influence to secure more favorable terms that reinforce their market position.

Finally, collusion accounts for only 4% of antitrust cases, indicating relatively lower regulatory focus on explicit agreements between digital firms to fix prices or divide markets. While collusion remains a core concern in traditional antitrust enforcement, the digital market's competitive dynamics and transparency in online transactions may reduce opportunities for such overtly collaborative practices. However, the emergence of data-sharing agreements and potential algorithmic collusion may prompt future regulatory action in this area.

This figure reveals a strong regulatory emphasis on mergers and abuse of dominance cases, reflecting the challenges of maintaining competition in highly concentrated digital markets. The data suggests that regulators prioritize actions that address market consolidation and power abuses, given their potential to limit competition and innovation within the rapidly evolving digital economy.

Figure 4 shifts the focus to specific companies most frequently targeted by antitrust actions, such as *Google*, *Uber*, and *Booking*. This figure highlights how these firms' dominant positions and distinctive business models draw considerable regulatory attention due to their influence on competition and customer choice.

Figure 4: Distribution of cases by firm



Source: World Bank (2024)

The data shown in Figure 4 display the distribution of antitrust cases across major digital firms, with *Google* leading at 45 cases. This high figure reflects *Google's* extensive presence across search, advertising, and other digital services, where its dominant market position and data control have led to frequent scrutiny. *Google's* wide range of services and acquisitions may raise concerns about monopolistic practices, exclusionary tactics, and data privacy issues, driving regulators to examine its impact on competition and customer choice.

Uber follows with 26 cases, a notable number for a platform focusing on ride-hailing and delivery services. *Uber's* unique business model, reliance on gig workers, and rapid global expansion often raise questions around market fairness, labor practices, and local competition laws. Regulatory challenges commonly involve *Uber's* potential to disrupt traditional transport markets, alongside concerns about pricing policies and driver treatment.

Booking.com has 13 cases, primarily linked to its dominance in online travel booking. Given *Booking's* large share of the travel market, cases typically focus on restrictive contract terms with hotels and other accommodations, such as price parity clauses that limit competition. Such practices raise regulatory concerns around market barriers and customer access to competitive pricing, prompting action by competition authorities.

Microsoft and *Amazon* follow with 11 and 10 cases, respectively, highlighting scrutiny related to their dominant positions in software, cloud services, and e-commerce. *Microsoft's* cases may involve legacy antitrust issues tied to its software market control, while *Amazon* faces questions about its influence in online retail, marketplace competition, and data usage to advantage its products over third-party sellers.

Meta (10 cases) and *Apple* (9 cases) are also under significant scrutiny, reflecting concerns over their influence in social media, mobile platforms, and app marketplaces. *Meta's* antitrust cases often center on its acquisitions and potential dominance in social media and digital advertising, while *Apple's* cases frequently involve its *App Store* policies, which may disadvantage app developers and limit customer choice.

The presence of *Delivery Hero* and *Just Eat* with 7 cases each, as well as *Alibaba* with 4 cases, suggests increasing regulatory attention on food delivery and e-commerce platforms. *Delivery Hero* and *Just Eat*, both major players in food delivery, face scrutiny over market concentration, pricing practices, and treatment of gig workers, similar to *Uber*. *Alibaba's* cases may involve issues related to market power in e-commerce and concerns over data usage within the Chinese and international markets.

The data underscores the concentration of antitrust cases around a few dominant firms, particularly those that wield significant market power and operate across multiple sectors. This pattern reflects competition authorities' focus on preventing potential monopolistic behavior, protecting customer choice, and ensuring fair competition within highly concentrated digital markets (Stojanović, Radivojević, & Stanišić, 2012).

Summarizing the data from the table and figures underscore the prominent role of high-income regions and a few major digital platforms in shaping the current competition policy landscape. These insights reinforce the global debate on the adequacy of existing regulatory approaches, especially considering the unique nature of digital platforms and the transnational impact of their business practices.

The EU, in particular, has taken a strong stance on curbing monopolistic behaviors within the digital market, imposing some of the highest fines in antitrust history. The following section delves into two landmark cases involving *Google*, each highlighting specific exclusive practices that have raised concerns over competition and fairness in the digital economy. Through these cases, we gain insight into the EU's approach to regulating digital giants and the broader implications for market competition.

Google: Examining exclusive practices…

Google was once a widely admired company, but in recent years it has been under constant government scrutiny and the subject of more than 100 antitrust investigations worldwide (Bergqvist, 2024). Publicly available information suggests that the investigations were conducted in more than 20 jurisdictions, which in addition to the countries of the EU, United Kingdom, and the US, include South Korea, Russia, Japan, India, South Africa, Brazil, Australia, and Turkey. An extensive empirical analysis of antimonopoly cases conducted against this company showed that all violations of competition rules were realized in several categories of services provided by *Google*. For example, Bergqvist (2024) highlights five typical areas, three of which are particularly characteristic of antitrust cases conducted in the EU:

(1) *The Google Search (Shopping)* cases focus on *Google's* practice of favoring its own services in search results, especially in the comparison shopping sector. Through its search engine, *Google* prominently features its own shopping service, *Google Shopping*, at the top of search results, while competing services are often ranked lower or pushed to later pages. This self-preferencing allows *Google Shopping* to capture a substantial share of user clicks, as users tend to click on the top results far more than those that appear lower on the page.

(2) *The Google Android* cases focus on *Google's* strategy of preinstalling its apps, like *Chrome* and *Search*, on *Android* devices, which it licenses for free to smartphone manufacturers. To secure these preinstallations, *Google* allegedly offers financial incentives, such as revenue-sharing from ad profits, ensuring that its apps appear as default options on most *Android* devices. This approach is considered exclusionary because it limits opportunities for competing apps to gain visibility on *Android*, effectively reinforcing *Google's* dominance in search and web browsing.

(3) *The Google AdWords/AdSense* cases center on *Google's* control over online advertising and its influence on publishers to rely on its ad services exclusively. Through contracts and requirements, *Google* allegedly restricts publishers' ability to display ads from competing ad services, thereby limiting the reach and diversity of *non-Google* ad platforms. This conduct, known as "tying", effectively binds publishers to *Google's* advertising tools, potentially reducing competition and making it difficult for other ad providers to compete.

As expected, many of the *Google* investigations that were conducted in the previous period (100+) did not end with the imposition of a competition protection measure. Some investigations did not result in the initiation of antitrust disputes, some were not confirmed in court cases, while some are still in one of the stages of evidentiary proceedings.

… in the web search (Google Shopping)

One of the antitrust cases recently upheld by the European Court of Justice (2024) is the case in which the European Commission imposed a significant fine of €2.42 billion on *Google* in 2017, accusing it of abusing its dominant position as a search engine to give its own comparison shopping service, *Google Shopping*, an unfair advantage. It is the second-highest fine ever levied for breaking EU antitrust regulations (Statista, 2024a). This landmark decision was rooted in *Google's* overwhelming market power in all 31 countries of the European Economic Area (EEA), where it held over 90% of the search engine market share since 2008 (European Commission, 2017). The Commission's investigation, launched following multiple complaints from rival services, found that *Google's* practices significantly hindered competition by prioritizing its own shopping service in search results, thereby disadvantaging competing comparison shopping platforms.

The Commission's findings highlighted that *Google* strategically placed its comparison shopping results at the top or in a prominent reserved space on the right-hand side of the search page. This placement ensured that *Google Shopping* was visible to users searching for product information, while results for rival shopping services were subjected to *Google's* standard search algorithms. As a result, competing services were often demoted to lower ranks, such as the fourth page or beyond, where they were unlikely to be seen by users. Studies cited by the European Commission (2017) showed that search results on the first page receive approximately 95% of clicks, while results on the second page drop to a mere 1%. Thus, this tactic led to a sharp decrease in visibility and traffic for rivals, making it extremely difficult for these services to compete with *Google Shopping* on an equal footing.

The European Commission (2017) stated that the impact of *Google's* actions was notable. Traffic to *Google Shopping* surged significantly across EEA countries, with the service growing 45-fold in the United Kingdom, 35-fold in Germany, and 29-fold in the Netherlands, among other regions. In contrast, traffic to competing comparison shopping websites plummeted. Some rival sites saw sudden and sustained declines in traffic by as much as 85% in the United Kingdom, 92% in Germany, and 80% in France after *Google* adjusted its algorithms. These drops were attributed directly to *Google's* demotion policies, which prioritized its own service and placed competitors at a disadvantage. Although some competitors managed to regain partial traffic over time, they could never fully recover to pre-demotion levels, highlighting the lasting impact of *Google's* practices on market dynamics.

The Commission argued that *Google's* actions limited customer choice and stifled innovation by reducing the viability of competitive comparison shopping platforms. While *Google* claimed its service offered a better user experience, the Commission noted that such practices harmed competitors in a way that did not constitute competition on the merits. *Google's* market power as a search engine gave it a unique responsibility not to distort competition unfairly, yet it leveraged this dominance to bolster *Google Shopping's* success, which ultimately led to the antitrust ruling.

The decision required *Google* to end its preferential treatment of *Google Shopping* within 90 days and to ensure that it applied the same ranking processes to all comparison shopping services, including rivals. The Commission warned that non-compliance would

result in additional fines, set at a daily rate of up to 5% of *Alphabet's* global daily turnover. This directive marked a significant step in the EU's approach to enforcing competition in digital markets, setting a precedent for how authorities might handle similar cases of market dominance and self-preferencing in the future.

… in the mobile operating system (Google Android)

An equally important and widely known antitrust case against *Google* in Europe was conducted for abusing its dominance in the mobile operating system market through its practices related to *Android*. The European Commission (2018) imposed a record-breaking €4.34 billion fine, which was slightly reduced to €4.125 billion by the judgment of the Court of Justice (2022). It is the largest fine ever imposed for a violation of antitrust rules in the EU (Statista, 2024a). The antitrust decision (European Commission, 2018) and judgment (Court of Justice, 2022) identified three key practices as unfair and harmful to competition. Firstly, *Google* required smartphone manufacturers to preinstall both *Google Search* and *Chrome* on *Android* devices as a condition for accessing the *Google Play Store*. This requirement ensured that users would primarily interact with *Google's* search engine and web browser, effectively preserving *Google's* dominant position in search, as most users would naturally use the preinstalled options. By positioning itself as the default search tool, *Google* retained a large share of search-based advertising revenue, limiting customer choice and blocking rivals from reaching a substantial portion of the mobile market.

Secondly, *Google* implemented revenue-sharing agreements with manufacturers and mobile network operators. These agreements rewarded manufacturers for exclusively preinstalling *Google's* services, specifically its search engine, on their devices. In practice, this strategy meant that manufacturers would lose significant financial incentives if they included competing search engines or browsers on their devices. This exclusivity further entrenched *Google's* search monopoly, as it created a strong financial barrier for manufacturers to offer alternative services. Consequently, rivals found it challenging to expand their presence in the mobile search market, as *Google's* financial incentives provided a clear advantage for manufacturers to stick with *Google* products.

Finally, *Google* enforced strict "anti-fragmentation agreements" on manufacturers, preventing them from developing or distributing alternative, modified versions of the *Android* operating system, often called "forked" versions. These anti-fragmentation policies ensured that *Android* remained uniform and prevented fragmentation, but they also stifled innovation and competition by restricting manufacturers' ability to create customized operating systems that could support *non-Google* services. This effectively meant that *Android*, while open-source in theory, operated under constraints that locked out potential competitors. By forbidding manufacturers from developing *Android* alternatives, *Google* limited the ecosystem to a version of *Android* that relied heavily on *Google* services, solidifying its market control and reducing the diversity of mobile operating systems available to customers.

The Commission (2017) argued that these practices collectively harmed competition, not only in the mobile operating system space but also in search and browsing. By leveraging its *Android* platform, *Google* could secure its search engine

and browser's default status across millions of mobile devices in Europe, blocking alternative providers from reaching users. According to the Commission, this conduct was not simply an effort to improve the *Android* experience but a calculated strategy to protect and expand *Google's* search and advertising dominance.

To address these concerns, the Commission (2017) mandated that *Google* cease these anti-competitive practices, requiring it to separate the licensing of *Google Search* and *Chrome* from the *Google Play Store*. This decision was aimed at creating more competitive conditions, allowing other search engines and browsers a fair opportunity to reach mobile users. The Commission also ordered *Google* to revise its revenue-sharing agreements and remove restrictions on *Android* modifications, thereby opening the door for manufacturers to develop more diverse and innovative versions of the *Android* operating system.

This landmark ruling against *Google* set a significant precedent for competition policy in the digital market, especially regarding how regulators view the role of default settings and preinstalled services in the mobile ecosystem. By addressing *Google's* practices with *Android*, the European Commission sent a strong message about the importance of customer choice and fair competition in the rapidly expanding mobile internet market. This decision is expected to have long-lasting impacts, not only for *Google* but for other tech giants with similarly structured ecosystems, as regulators increasingly scrutinize the influence of preinstallation requirements and financial incentives on competitive dynamics in the digital economy.

Conclusion

This study highlights the pressing need for strong antitrust frameworks in the digital economy, where market dominance by a few major players poses intricate regulatory challenges. Through an analysis of global antitrust cases, we observe a marked concentration of enforcement efforts in high-income regions, particularly within the EU and the East Asia and Pacific. Cases related to mergers and abuse of dominance are predominant, reflecting regulatory efforts to prevent monopolistic behavior and to foster competitive diversity within digital marketplaces.

Managing antitrust issues in digital markets requires specialized expertise among antimonopoly bodies, the judiciary, and investigative teams. Cases in this field often involve complex technical concepts, such as algorithms and data handling processes, which demand an advanced understanding beyond conventional legal standards. This specialized knowledge is essential for regulatory bodies, as well as for judges, who must accurately interpret the nuances of high-tech markets in their rulings. Effective oversight requires coordination with technology experts who can identify and evaluate the sophisticated forms of market abuse that may occur within digital platforms, ensuring that outcomes are well-grounded, precise, and actionable.

In developing countries, such as Serbia and others in the region, the challenges are even more significant due to limited resources and expertise. These nations often face budget constraints that make it difficult to respond quickly to the rapidly evolving digital economy and to implement effective antitrust enforcement. Consequently, developing economies may struggle to establish comprehensive and enforceable competition

policies, risking that monopolistic practices could go unaddressed.

The cases of *Google Shopping* and *Google Android* illustrate the broad impact that major tech firms can have on customer choices, market entry, and innovation. These cases reveal how dominant companies may use their market power across various sectors, which could inhibit competition if not closely monitored. The EU's substantial fines and corrective actions against *Google* reflect a growing international consensus on the need for flexible, enforceable antitrust policies that respond to the specific challenges posed by digital platforms.

This study suggests that policymakers and regulators should continue advancing antitrust approaches, especially in developing regions, to ensure that digital markets remain open, competitive, and beneficial to consumers. Supporting a balanced digital environment will require a long-term commitment to specialized training, international collaboration, and resource investment, enabling even smaller economies to safeguard their markets and encourage competition in the increasingly digital global economy.

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