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Tech's Impact on Financial Services Competition

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Tech's Impact on Financial Services Competition

ABSTRACTS

Technology's impact on competition in the financial services sector is profound. It has changed the competitive landscape by laying the ground for new financial products and services offered by traditional banks, fintechs and big tech. This has created new issues for antitrust enforcement and regulation, the scope of which are continually to evolve. The question is – how will antitrust enforcement and regulation ensure procompetitive outcomes and increased innovation without creating adverse competitive impacts?

L'impact de la technologie sur la concurrence dans le secteur des services financiers est profond. Elle a modifié le paysage concurrentiel en jetant les bases de nouveaux produits et services financiers proposés par les banques traditionnelles, les fintechs et les big techs. Cela a créé de nouveaux problèmes pour l'application et la réglementation antitrust, dont la portée ne cesse d'évoluer. La question est la suivante : comment l'application et la réglementation des ententes et des abus de position dominante peuvent-elles garantir des résultats favorables à la concurrence et une innovation accrue sans créer d'effets négatifs sur la concurrence ?

The evolving financial services landscape: Can antitrust enforcement and regulation keep up? A foreword

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Big Techs, banks, and the Digital Markets Act

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“Sideways competition” & market definition in the fintech industry

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The antitrust fintech challenge

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The inevitable reform of the Bank Merger Guidelines

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Platform competition and the regulation of stock exchange fees

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The evolving financial services landscape: Can antitrust enforcement and regulation keep up? A foreword

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1. The fact that the financial services sector has been and continues to be transformed by technology is incontestable. Technology's impact has been pronounced: it has permitted untold numbers of firms, broadly referred to as "fintechs," to offer services that had previously been the domain only of traditional banks; it has attracted "big tech" platforms to play a growing role in providing financial services; and it has compelled traditional banks, often in reaction to what is perceived as competitive threats from fintechs and big tech, to reconsider their delivery of financial services.

2. These developments have fueled innovation, introduced new financial products and services, and realigned competitive relationships. These developments have impacted many segments of the financial services sector—consumer banking, payment systems, trading exchanges—and have elevated the importance of data for the delivery of all such services. They have also, consequently, resulted in greater scrutiny of issues relating to the safety and security of financial systems, whether with regard to protecting against credit and fraud risks or accessing personal information. Questions concerning ownership of personal information have also come to the fore.

3. Not surprisingly, these developments have also generated a growing body of commentary asking whether and how antitrust enforcement and regulation should apply to financial services. We have also seen efforts by antitrust enforcers and regulators globally to address conduct involving financial services in this increasingly complex environment.

4. If anything, however, how antitrust enforcement and regulation should address competition in the financial services sector involves myriad open questions. At the

most fundamental level, a question exists whether current legal standards are sufficient to assess whether financial sector conduct is procompetitive or anticompetitive. How should competition even be defined, and what firms should be included in properly defined relevant markets? What are proper indicia of market or monopoly power (or dominance), and is such power durable or fragile, and what factors properly serve as constraints on the exercise of such power? Are enforcement efforts sufficient, or is regulation necessary? What competitive impact do new intermediating platforms have on competition in the delivery of financial services? How should regulatory asymmetries between banks and non-bank fintechs and big tech companies be addressed? Can competition law principles and privacy rights be reconciled? What competition law issues arise in connection with access to and ownership of data used for providing financial services?

5. This is not intended to be an exhaustive list of questions. I am indeed certain that, the full scope of issues and questions concerning antitrust enforcement and regulation with respect to financial services has not yet been fully identified. If anything, as technology and innovation continue to advance at breakneck speed, leading to the introduction of new financial products and services globally, new questions will arise requiring careful thought and consideration regarding their competitive implications. At the most fundamental level, however, as is the case for antitrust law generally, the question will remain how to distinguish procompetitive conduct that leads to greater innovation, increased output, lower prices, and improved quality in financial services, from conduct that harms the competitive process. This question is not unique to financial services, but the complex competition issues applicable to financial services make the question that much more important.

* The views expressed here are solely the author's own and do not necessarily reflect the views of Morgan, Lewis or any of its clients.

6. We are very fortunate, therefore, to present this *Concurrences* publication, which includes contributions from leading thinkers in this area from the U.S. and Europe. They bring perspectives as antitrust practitioners and economists. If nothing else, we hope that the discussion presented here and in the following contributions will advance the dialogue around how antitrust and competition enforcers and regulators, as well as financial industry regulators, might evaluate conduct in the delivery of financial services to optimize innovation and social welfare, while at the same time ensuring the safety and security of financial transactions. This will not be a straightforward or easy task, but it is an increasingly important discussion that must proceed.

7. Thus, an overview of the contributions to this publication.

- Glynn and Jacobson lead off with a discussion of “sideways competition”—that is, where two companies do not compete in their core businesses, but present competitive threats to a portion of each other’s business. The authors note that such competition is particularly prevalent in the financial sector, with fintechs providing new payment system competitive alternatives. The authors discuss how U.S. agencies, and specifically the Department of Justice, have treated “sideways competition” in different ways in the context of mergers and litigation. They discuss proceedings that have involved theories of “nascent competition,” “segmented offering” competition, and the competitive influence of complementary products outside the relevant market. They discuss the adequacy of these various forms of “sideways competition” for assessing competitive effects, and whether they properly recognize the potential for new competition while also addressing anticompetitive conduct.
- Cenedella, Christoforou, Pellow, and Roellke discuss whether the 1995 Bank Merger Competitive Review Guidelines remain relevant or whether they should be revised to reflect emerging trends in financial services. The authors set the stage for the discussion by pointing out that reconsideration of the Bank Merger Guidelines is directed by President Biden’s Executive Order on Promoting Competition in the American Economy, which specifically directs the agencies to revitalize merger oversight to “*ensure Americans have choices among financial institutions and to guard against excessive market power.*” The paper specifically discusses whether the Guidelines’ current approach for assessing bank mergers in terms of specified relevant product and geographic markets based on lines of traditional banking services and by weighting services based on the type of bank still holds relevance. Cenedella et al. further consider whether more rigorous competitive analyses of bank mergers are required, and whether additional U.S. agencies will and should participate in bank merger reviews given the current political climate and the reinvigoration of the Consumer Financial Protection Board.

– Padilla and Riera present economists’ views on big tech, banks, and the potential regulatory scheme of the Digital Markets Act (the “DMA”) in Europe. In their paper, the authors observe that big tech companies have the ability and incentive to enter into retail banking by leveraging their existing and growing ability to accumulate consumer data. But they point out that whether big tech’s entry into banking will promote or undermine competition in providing financial services is an open question. They further discuss how the DMA, by imposing obligations on “gatekeeper platforms,” might sufficiently constrain big tech companies to ensure that the long-term impact of their entry into financial services is positive.

– Vives provides another economist’s views on the anti-trust fintech challenge. He starts by observing that technology has disrupted the delivery of financial services by, among other things, introducing new payment systems and applying machine learning to data for credit assessments and other purposes. He then poses the central question of whether anti-trust has coped adequately with technological progress, in particular in dealing with platforms that may have gained dominance. Vives recognizes the complexity of understanding properly how technology has and will continue to impact competition, even to the extent that it may lead to excessive competition or excessive entry from a social welfare perspective. He further identifies potential differences between the impact of big tech versus fintech disrupters, and whether regulatory schemes such as the DMA will provide a sufficient balance of all interests.

– Finally, Rysman and Schwabe consider how competitive effects should be considered in connection specifically with stock exchanges, which are, according to the authors, textbook examples of multi-sided platforms, and therefore present their own unique set of challenges. The authors review the various ways that stock exchanges act as platforms in multiple senses in bringing together buyers and sellers of shares and for trading and data. In the U.S., stock exchange fees are regulated by the Securities and Exchange Commission to ensure they are “reasonable.” As Rysman and Schwabe point out, however, the way the SEC has assessed “reasonableness” is in flux, and as discussed in this paper, the door remains open for platform competition-based approaches. While this paper focuses solely on the regulation of stock exchange fees, it should not be a far reach to wonder whether what the authors refer to as platform competition-based approaches have a role in other sectors of the financial services industry where multi-sided platforms are becoming more prevalent.

8. These papers touch on just some of the important questions that need greater clarity for antitrust enforcement and regulation to coherently understand and address competition issues in the financial sector. We hope this publication adds positively to this very important discussion. ■

“Sideways competition” & market definition in the fintech industry

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I. Introduction

1. Is Facebook a shopping site? Is Amazon a search engine? Is Google a social network? Of course, the answers are no. But do these companies compete against one another for users and shoppers? You bet. An important but little remarked feature of the tech economy is the competition between companies whose business models are completely different but nevertheless can impose significant constraints on any potential exercise of others' market power.

2. Antitrust agencies and courts are increasingly having to deal with instances of what we call “sideways competition” more regularly than ever before. We use this term to refer to instances in which two companies, at their core, do not compete against each other, but present a competitive threat to some portion of the other company's business.

3. Historically, this was not an issue. Antitrust agencies typically saw companies as competitors or not. Markets were simpler. Oil. Tobacco. Railroads. Telephones. With the advent of new technologies, lines are blurring and there is more overlap between companies. It is becoming more common for one company to be able to introduce a new technology that competes against one portion of what another company does, even if the companies themselves do not appear to be competitors. This is particularly prevalent in the fintech industry, where companies are introducing technologies that handle one portion of a complicated payment system and thus could be viewed as competing against a host of other companies, even if their technologies are completely different.

4. So far, antitrust agencies and courts have struggled with how to treat this type of competition and have used different approaches in different circumstances, unable to come up with one uniform approach to use for all instances of “sideways competition.” Sometimes, they have approached “sideways competition” through the lens of nascent competition, asserting that the company that can handle a piece of the other company's business has the ability to expand its business and therefore poses a nascent competitive threat to the other company.¹ At times, they have been able to segment off the companies' offerings into smaller units, finding competition between the companies for some portion of their offerings but not for others, requiring divestiture for the overlapping portion of the business and otherwise agreeing that the companies do not compete against each other.² Other times, they have defined the market narrowly, completely excluding new technologies from the product market and instead viewing them as complements to the existing product market.³ Notably, this last approach has been taken in litigation brought by the government, as opposed to being used in a government's review of a merger between two companies engaged in “sideways competition.”

5. Below, we look at several recent cases involving the fintech industry and analyze how “sideways competition” has been handled in each case.

* The authors of this article and their law firm have represented parties in some of the matters discussed.

1 See, e.g., Administrative Complaint ¶¶ 21, 81, *In re Illumina, Inc. and Pacific Biosciences of California, Inc.*, 2019 FTC LEXIS 97 (F.T.C. Dec. 17, 2019) (No. 9387) (alleging that PacBio has improved its technology and was becoming a closer substitute for Illumina's technology, meaning that Illumina's acquisition of PacBio “would eliminate the nascent competitive threat that an independently owned PacBio poses to Illumina's monopoly power”); Complaint ¶¶ 44, 62, 76 *United States v. Visa Inc.*, No. 3:20-cv-07810 (N.D. Cal. Nov. 5, 2020) (alleging that Plaid's “nascent technology,” which had not yet been built, posed “a significant threat to Visa” and thus “Visa's proposed acquisition of Plaid would eliminate the nascent competitive threat that an independently owned Plaid poses to Visa's monopoly power”).

2 Complaint, *United States v. Intuit*, No. 1:20-cv-03441 (D.D.C. Nov. 25, 2020).

3 Complaint, *United States v. Am. Express Co.*, No. 1:10-cv-04496-NGG-RER (E.D.N.Y. Oct. 4, 2015); Complaint, *United States v. Visa U.S.A., Inc.*, No. 99-cv-7076 (S.D.N.Y. 2001).

II. *Visa/Plaid*: Nascent competition

6. Visa, a large, established public company that offers both credit cards and debit cards, signed an agreement to purchase fintech startup Plaid in January 2020.⁴ Unlike Visa, Plaid is a young technology company that develops APIs that are used by fintech developers to assist with authenticating payments that are made over the Automated Clearing House (ACH). Plaid is not a payment company, offers no credit cards or debit cards, and does not have the capability to move money from a consumer to a merchant. While the companies' profiles are extremely different, the Department of Justice (DOJ) ultimately decided to sue to block the transaction, alleging that Plaid poses a competitive nascent threat to Visa because Plaid was able to complete one step in the complicated process of transferring money.⁵ Given that Plaid already had this capability, the DOJ asserted that Plaid could, in the future, handle additional steps in the payment process and ultimately offer consumers a new way to pay merchants that would compete against long-standing debit cards.⁶ The DOJ did not allege that any of Plaid's current technologies or products directly competed with the credit and debit cards offered by Visa, or even that any of Plaid's current technologies or products could compete in the future with Visa's products. Instead, the DOJ's complaint focuses on Plaid's "*nascent technology*,"⁷ which the DOJ predicted could be introduced in the future and could present a "*nascent competitive threat*" to Visa's monopoly power.⁸

7. At the time the complaint was filed, Visa and Plaid could be seen as sideways competitors. Plaid only competed in one step of the payment process—a step that is not core to Visa's business. Regardless of the fact that numerous companies can handle one—or more—steps in the payment process, the DOJ alleged that Plaid was a nascent competitor and that, absent its acquisition by Visa, its technology could be used to improve pay-by-bank technologies, which would threaten Visa's dominance in online debit card transactions.⁹ The DOJ's complaint alleged harm to the online debit transactions market, even though Plaid was not a competitor in that market and remained, at its core, a technology company selling its APIs to fintech developers—just like many other fintech companies.

8. Shortly after Visa announced its intent to acquire Plaid, Mastercard—a credit and debit card company that competes directly with Visa—announced its acquisition of Fincity, an API developer that, like Plaid, develops APIs that are used by fintech developers for a step of the payment process.¹⁰ While Fincity is just as likely to compete against Mastercard as Plaid is to compete against Visa, the DOJ did not allege that Mastercard's acquisition of Fincity would harm competition in any market, presumably because of Mastercard's lower market share. The transaction was consummated in November 2020, just weeks after the DOJ filed its lawsuit against Visa and Plaid.¹¹

9. In the end, Visa and Plaid abandoned their transaction, so it is not clear how the DOJ's nascent competition theory would play out in court, particularly where the theory appears to be applied inconsistently in very similar situations. After Visa and Plaid abandoned their merger, Visa announced the acquisition of another data aggregator, Tink.¹² While Visa and Tink are not direct competitors, the DOJ may find that, like Plaid, Tink presents a nascent competitive threat to Visa's online debit transactions. The transaction was announced in June 2021, but has not yet closed, so we have no insight into how the DOJ is viewing competition between Tink and Visa and whether it will consider Tink a nascent competitor to Visa's online debit business based on the current "sideways competition" between the companies.

10. If antitrust agencies are going to use a nascent competition theory to address "sideways competition," they should also consider the other potential nascent competitors that could enter the market even if the merger is consummated. The acquisition of one company that does not compete with the other, and may or may not present a competitive threat in the future, does not necessarily result in harm to competition when there are numerous other alternatives just as likely to pose that same threat in the future.¹³ In this example, any of the numerous companies that have capabilities similar to Plaid could continue to compete against the combined Visa-Plaid entity, and could, just as easily as Plaid, introduce a pay-by-bank solution that would offer consumers a new way to pay merchants.

4 Press Release, Visa to Acquire Plaid (Jan. 13, 2020), <https://usa.visa.com/about-visa/newsroom/press-releases.releaseId.16856.html>.

5 Complaint ¶ 8, *United States v. Visa Inc.*, *supra* note 1.

6 *Ibid.* ¶ 66.

7 *Ibid.* ¶ 44.

8 *Ibid.* ¶ 76.

9 *Ibid.* ¶¶ 66–67.

10 Press Release, Mastercard to Acquire Fincity to Advance Open Banking Strategy (June 23, 2020), <https://www.fincity.com/mastercard-to-acquire-fincity-to-advance-open-banking-strategy>.

11 N. Mascarenhas & A. Wilhelm, The DOJ has approved Mastercard's acquisition of Fincity, *TechCrunch* (Nov. 16, 2020, 12:38 PM), <https://techcrunch.com/2020/11/16/the-doj-has-approved-mastercards-acquisition-of-fincity/>.

12 R. Dillet, Visa to acquire open banking platform Tink for more than \$2 billion, *TechCrunch* (June 24, 2021, 8:25 AM), <https://techcrunch.com/2021/06/24/visa-to-acquire-open-banking-platform-tink-for-more-than-2-billion/>.

13 J. Jacobson & C. Mufarrige, Acquisitions of "Nascent" Competitors, *The Antitrust Source* (Aug. 2020), at 11.

III. Intuit/Credit Karma: Segmented offerings

11. Intuit is a software company that offers several different financial software products to both individuals and small businesses. In February 2020, it announced its intent to acquire Credit Karma, a personal finance management platform that is known for its core business of providing credit scores, reports, and insights.¹⁴ While the two companies are known for very different technologies, both Intuit and Credit Karma offered digital DIY tax preparation as part of their larger platform and software offerings.

12. Intuit's acquisition of Credit Karma was investigated by the DOJ, which understood that the two companies offer a host of solutions that are, for the most part, very different from each other. However, the DOJ also noted that the two companies engage in what we refer to as "sideways competition"—they both offer one solution (digital DIY tax preparation services), not core to their business, that compete against each other. Acknowledging that the companies were not stereotypical competitors, the DOJ did not sue the companies to block the entire transaction. Instead, the DOJ broke down each company's platform and identified the overlap between the tax preparation tools. The DOJ's complaint was limited to the one area of overlap—providing tax preparation products to assist individuals.¹⁵ According to the DOJ's complaint, since Credit Karma launched its digital DIY tax preparation product in 2017, "*Credit Karma has begun to erode Intuit's dominance in the market for the development, provision, operation, and support for DDIY tax preparation products.*"¹⁶ Given that this technology was not at the core of Credit Karma's business, however, the DOJ alleged that Credit Karma only served 3% of customers.¹⁷ Nonetheless, the DOJ also found Credit Karma to be Intuit's "*most disruptive competitor for DDIY tax preparation.*"¹⁸ Given the narrow overlap between the parties, and the many other technologies that the companies provide that do not compete with each other, the parties were able to divest Credit Karma's tax preparation product and close the transaction.¹⁹

13. Notably, this result differed from H&R Block's 2010 attempted acquisition of TaxACT. In that case, digital DIY tax preparation services were also at issue, but the services were central to both companies' business. TaxACT, at its core, was a digital DIY tax preparation company. H&R Block offered digital DIY tax preparation services, as well as assisted tax preparation services through a professional. Because TaxACT was solely a digital DIY tax preparation company, and because the DOJ alleged that unassisted pen-and-paper tax preparation and assisted tax preparation services were outside of the relevant market, the government did not seek a divestiture in that case.²⁰ Unlike the "sideways competition" between Intuit and Credit Karma, the competition between TaxACT and H&R Block was central to both companies' businesses. In fact, the companies' own documents showed that they viewed each other as competitors, regularly tracking each other's pricing, and that H&R Block employees viewed TaxACT as a disruptor in the market.²¹ Thus, the DOJ filed a complaint seeking to block the entire transaction.²² According to the complaint, H&R Block, TaxACT, and Intuit were the only major suppliers of digital DIY tax preparation products, and TaxACT had aggressively competed with H&R Block, leading to lower prices and increased innovation.²³ The DOJ's challenge to the transaction was successful, with the court finding that the acquisition would have eliminated head-to-head competition between the second and third largest digital DIY tax preparation companies.²⁴ The parties were forced to abandon their transaction.

14. Segmenting off a portion of a company's business to define the relevant market affected by the transaction or conduct, as the DOJ was able to do with the *Intuit/Credit Karma* transaction, seems to be a helpful approach to dealing with "sideways competition." However, while Credit Karma was able to clearly break off one portion of its larger platform, this approach seems unsatisfactory for other technologies where there is a less clear divide between the various offerings. This approach is also only helpful when both companies have another core business outside of the portion of their businesses that compete with each other. Otherwise, as seen with H&R Block and TaxACT, the government will view the companies as head-to-head competitors and the only remedy that the government will consider adequate is to fully block the transaction.

14 I. Lunden, Intuit confirms that it is buying Credit Karma for \$7.1B in cash and stock, *TechCrunch* (Feb. 24, 2020, 4:02 PM), <https://techcrunch.com/2020/02/24/intuit-credit-karma>.

15 Complaint ¶¶ 16–17, *United States v. Intuit*, *supra* note 2.

16 *Ibid.* at ¶ 6.

17 *Ibid.* at ¶ 5.

18 *Ibid.*

19 Final Judgment at 1–2, *United States v. Intuit*, No. 1:20-cv-03441-ABJ (D.D.C. Aug. 2, 2021).

20 Complaint, *United States v. H&R Block, Inc.*, No. 1:11-cv-00948 (D.D.C. May 23, 2011).

21 *United States v. H&R Block, Inc.*, 833 F. Supp. 2d 36, 52 (D.D.C. 2011).

22 Complaint ¶ 55(b), *United States v. H&R Block, Inc.*, *supra* note 20.

23 *Ibid.* ¶ 45.

24 *H&R Block, Inc.*, 833 F. Supp. 2d at 42, 44.

IV. *U.S. v. American Express*: Product complements outside the relevant market

15. The need to consider “sideways competition” in market definition arises not only in the context of merger reviews, but also in litigation. Interestingly, the DOJ has taken a different approach when bringing a conduct case against a company as opposed to when it sues to block a merger. In monopolization cases, the DOJ is interested in defining the market as narrowly as possible to ensure it can prove that the defendant has market power. Thus, it is less likely that the DOJ will want to consider companies engaged in “sideways competition” as true competitors to the defendant. Instead, it would prefer to view companies that do not compete head-to-head with the defendant outside of the relevant market.

16. In a lawsuit the DOJ brought against American Express in 2010 relating to alleged anti-steering provisions, the DOJ sought to define the market in which American Express competed as limited to credit and charge cards only, expressly excluding debit cards, prepaid cards, and gift cards.²⁵ At the time, the only participants in the alleged market were American Express, Discover, Mastercard, and Visa.²⁶ This was consistent with how the DOJ sought to define the relevant market in a prior complaint against Visa in 1998.²⁷ According to the DOJ, payment methods such as debit cards, cash and checks are used by “less affluent purchasers” and “effectively subsidize part of the cost” of credit card rewards and benefits, as opposed to competing directly with the credit and charge cards.²⁸ The DOJ admitted in its complaint that these other payment options exist, but it asserted that they are not viewed as reasonable substitutes for credit and charge cards from the perspective of merchants.²⁹

17. Even though there had been many advancements in financial technology between 1998 and 2010, which had led consumers to rely more heavily on new ways to pay merchants, the DOJ urged the court to adopt the same relevant product market as had been used in *United States v. Visa U.S.A., Inc.* Fighting against the DOJ’s proposed relevant market, American Express pointed to the many other ways consumers can pay merchants as a way to expand the product market beyond credit cards. In particular, American Express focused on debit cards, proprietary and private label credit cards, ACH transfers,

checks, and cash.³⁰ American Express also noted the competition it faced with “[t]he rise of new digital payment options like PayPal, Square, and Google Wallet.”³¹

18. However, the district court agreed with the DOJ, finding that the new methods of payment were not adequate substitutes for credit cards.³² This holding was focused on how merchants view debit and credit card network services, regardless of whether consumers view debit and credit cards as substitutable.³³ Even though the court admitted that “the payment systems market has undergone a significant evolution” since the *Visa* decision, it adopted the same relevant product market definition, claiming that the market still remained “highly concentrated and constrained by high barriers to entry.”³⁴ The court acknowledged that American Express viewed digital payment options as presenting “unique competitive challenges to its business,” but held that the new payment companies were more akin to merchants, not competitors, because they did not establish their own payment option and instead “piggyback on existing methods of payment—including credit and charge, debit, and ACH—in order to facilitate their use at both online and brick-and-mortar merchants.”³⁵

19. The district court’s decision was reversed on appeal. However, American Express did not argue before the Second Circuit that the relevant market should include other alternative payment types.³⁶ Thus, the court did not opine as to whether debit cards, or even the new payment options like PayPal and Square, should be included in the relevant product market. However, the Second Circuit did disagree with the district court’s focus on merchants’ point of view and disregard of consumers’ point of view as to whether alternatives should be properly included in the relevant product market. The Second Circuit found that “the market as a whole includes both cardholders and merchants, who comprise distinct yet equally important and interdependent sets of consumers sitting on either side of the payment-card platform.”³⁷ However, the Second Circuit did not opine as to whether the cardholders or merchants would view debit cards or other alternative payment methods as interchangeable. The Second Circuit’s decision was upheld by the Supreme Court.³⁸ Again, the issue before the Supreme Court was not whether debit cards and other payment methods should be part of the relevant market, but whether the market should be viewed from both sides of the two-sided platform.³⁹ The decision, like that of the Second Circuit, focused exclusively on credit and charge cards.

30 *United States v. Am. Express Co.*, 88 F.Supp. 3d 143, 151-53 (E.D.N.Y. 2015).

31 *Ibid.* at 190.

32 *Ibid.* at 175.

33 *Ibid.* at 180.

34 *Ibid.* at 180, 189.

35 *Ibid.* at 190.

36 *United States v. Am. Express Co.*, 838 F.3d 179, 184 n. 1 (2d Cir. 2015) (affirmed on appeal).

37 *Ibid.* at 204–05.

38 *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2283 (2018).

39 *Ibid.*

25 Complaint ¶ 12, *United States v. Am. Express Co.*, *supra* note 3.

26 *Ibid.* ¶¶ 35, 53.

27 Complaint ¶ 8, *United States v. Visa U.S.A., Inc.*, No. 98-cv-7076 163 (S.D.N.Y. Oct. 7, 1998).

28 Complaint ¶ 72, *United States v. Am. Express Co.*, *supra* note 3.

29 *Ibid.* ¶ 43.

20. Since the district court’s decision in *American Express*, fintech has exploded, with more and more companies involved in the payment process, and partnering together, to allow for payment methods that do not rely on credit or debit cards. As explained above, the DOJ itself complained that just one of these fintech companies could ultimately, and in the very near future, pose a formidable threat to Visa. As technologies continue to evolve, courts and antitrust agencies will need to look practically at how fintech products are being used by both consumers and merchants. While many new technologies are, indeed, complements to existing payment methods, others are viewed—by both consumers and merchants—as current or very near competitors in the payment space. Antitrust agencies should be consistent with their views as to whether a new technology does, in fact, pose a competitive threat to existing payment methods, regardless of whether they are litigating a proposed merger or a conduct case.

V. Conclusion

21. The issue of “sideways competition” will only become more prevalent in the future, particularly in the fintech industry. When defining a market where there are issues of “sideways competition,” antitrust agencies should follow their own guidance and remember that “[t]he Agencies’ analysis need not start with market definition.”⁴⁰ Deciding whether a new technology poses a competitive threat to an existing and longstanding payment method is a fact-intensive inquiry that requires an analysis into the views of both consumers and merchants, as well as the views of the companies themselves who regularly track competitive threats. Antitrust agencies and courts should focus on the views of all these parties before deciding on a supposed relevant product market. The key issue must remain whether a company that provides only one step in a complicated process actually operates as a sufficient constraint on potential market power, and whether there are any other companies that also provide that same significant threat. ■

40 U.S. Dep’t of Justice & Fed. Trade Comm’n, Horizontal Merger Guidelines § 4 (2010).

The inevitable reform of the Bank Merger Guidelines

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1. The breakneck pace of technological change in the financial services sector, fueled in significant part by innovations, has resulted in new entry by a number of “fintechs” that offer services in direct competition with traditional banks. The competitive landscape in the financial sector has changed in significant ways over the past decade, especially in consumer banking services, where customers increasingly bank from their phones, and bank branches appear to be a thing of the past. Now, combined with the current political environment pushing for antitrust law reform, it should come as no surprise that the review standards applied to consolidation in the banking sector will change. This article examines the issues around some of the proposed reforms.

I. The recent calls for reform

2. On July 9, 2021, President Biden issued a broad Executive Order on Promoting Competition in the American Economy that encourages the attorney general, in consultation with the federal banking agencies,¹ to revitalize merger oversight to “ensure Americans have choices among financial institutions and to guard against excessive market power.”² Revamping bank merger reviews has been the topic of much debate since 2019, when Representative Jesús “Chuy” García and Senator

Elizabeth Warren introduced their respective bills in Congress to mandate a more rigorous analysis of bank mergers, requiring approval of the Consumer Financial Protection Bureau and the examination of a merger’s impacts on individual banking products.³ With the spotlight on bank merger reviews, the Antitrust Division in September 2020 sought public comment on whether the 1995 Bank Merger Competitive Review Guidelines (the “1995 Guidelines”) should be revised to reflect “*emerging trends*” in the banking and financial services sector.⁴ While banking and financial services have evolved significantly in the past twenty-five years, the Guidelines have not. And when the Antitrust Division updated its Horizontal Merger Guidelines in 2010, the banking industry was specifically excluded. In the meantime, the financial services industry has changed dramatically with fintechs transforming the way Americans now bank. At one end of the spectrum, echoing Senator Warren is the view that the Guidelines should be even more stringent and must take into account the “public interest” effects of bank consolidation, especially on low-to-middle income (LMI) and rural communities. At the other end is a chorus of industry observers who recognize that non-banks (i.e., fintechs) offer services that compete directly with banks, eroding the boundaries of traditional product and geographic markets and necessitating broader product and geographic market definitions. Change is inevitable. The scope and extent, however, are yet to be determined.

1 This includes the chairman of the Board of Governors of the Federal Reserve System, the chairperson of the Board of Directors of the Federal Deposit Insurance Corporation, and the comptroller of the Currency.

2 Exec. Order No. 14036, 86 FR 36987 (July 9, 2021).

3 Bank Merger Review Modernization Act of 2019, S. 3213, 116TH Cong. (2020), available at <https://www.govinfo.gov/content/pkg/BILLS-116s3213is/pdf/BILLS-116s3213is.pdf>; see also Bank Merger Review Modernization Act of 2019, H.R. 5318, 116 Cong. (2020), available at <https://www.congress.gov/116/bills/hr5318/BILLS-116hr5318ih.pdf>.

4 U.S. Dep’t of Justice, Antitrust Div., Antitrust Division Seeks Public Comments On Updating Bank Merger Review Analysis (Sep. 1, 2020), available at <https://www.justice.gov/opa/pr/antitrust-division-seeks-public-comments-updating-bank-merger-review-analysis>.

II. The 1995 Guidelines

3. The 1995 Guidelines reflect the somewhat unique, and some argue highly regulated, nature of the banking industry, where the Antitrust Division, alongside the relevant federal banking agency, conducts independent competitive analyses of banks and bank holding company mergers, and proscribes any mergers that would “*tend to substantially lessen competition.*” To provide guidance to the industry on their competitive review process, the Antitrust Division and the federal banking agencies issued the 1995 Guidelines, introducing an initial “screen” to determine likely competitive effects of the transaction, which is based on market shares and market concentration for the local banking markets in which the merging parties have overlapping operations.

4. The Antitrust Division and the banking agencies each look at competition in predefined markets developed by the Federal Reserve. Once all competitors in these predefined markets are determined by the agencies, market shares are computed based on the Herfindahl–Hirschman Index (HHI), which is calculated as the sum of the squared market shares in a local banking market. The Federal Reserve publishes information on the local banking markets for all of its twelve districts. A transaction with an HHI greater than 1,800 and a post-merger HHI increase of 200 or more in any overlapping local banking market, or an increase in the post-transaction market share of the acquiring firm to more than 35% in any overlapping market, is subject to further review. Conversely, a transaction with an HHI lower than 1,800 and an increase of less than 200 is unlikely to have significant anticompetitive effects.

5. The Antitrust Division also has an alternative screen that looks at the competition for commercial loans. A transaction that exceeds the 1,800/200 threshold would warrant further scrutiny. Parties to the transaction, however, are encouraged to provide information that “*establish a clearer picture of competitive realities in the market,*”⁵ including evidence that the merging parties are not significant competitors in the market, or that the geographic market is outdated because of rapid economic change.

6. The market shares are based on the deposits of the depository institutions in the market. While different types of institutions—commercial banks, thrifts and credit unions—are authorized to take and hold deposits, they are not treated equally. For the initial calculation, deposits of all institutions with a commercial bank charter are given 100% weighting, while deposits of institutions with a thrift charter (i.e., savings banks and savings and loan institutions) typically receive 50% weighting. Credit union deposits may be considered

5 U.S. Dep’t of Justice, Antitrust Div., Bank Merger Guidelines (1995), § 2 at 3.

under certain circumstances.⁶ Significantly, deposits of online banks are generally not included in local market share calculations.⁷

7. These HHI thresholds that frame the basis of the Antitrust Division’s analysis of bank mergers have remained the same since 1995, and were reaffirmed as the operative initial screening standard for bank transactions in 2010, when the Horizontal Merger Guidelines were issued, and again in 2014, when the Antitrust Division and the banking agencies jointly issued FAQs. Although the 2010 Horizontal Merger Guidelines changed the HHI thresholds for all industries, by defining a “*highly concentrated*” market as one with an HHI greater than 2,500 and a post-merger HHI increase of 200 or more, banking was not included. This exclusion, claims one commentator, ignored the Antitrust Division’s prior acknowledgment that banking should have lower HHI thresholds than other industries because banks face competition from sources that cannot be captured by computing HHIs based solely on deposits.⁸

III. Some proposed reforms

1. Abandon the 1995 Guidelines or change the HHI thresholds to match the 2010 Horizontal Merger Guidelines

8 Not surprisingly, after a decade of the disparate HHI thresholds applicable to the banking industry, there has been a loud call to revisit the 1995 Guidelines. Indeed, the Antitrust Division sought public comment on whether,

6 Credit unions are typically included in HHI calculations, with 50% weighting, if two conditions are met: (i) the field of membership includes all, or almost all, of the market population, and (ii) the credit union’s branches are easily accessible to the general public. See Board of Governors of the Federal Reserve System, How do the Federal Reserve and the U.S. Department of Justice, Antitrust Division, analyze the competitive effects of mergers and acquisitions under the Bank Holding Company Act, the Bank Merger Act and the Home Owners Loan Act? (Oct. 9, 2014) at Question 18. However, a credit union with significant commercial lending and staff available for small business services may be eligible for 100% weighting. *Ibid.*

7 *Ibid.* at 8 (“*Deposits of Internet banks are generally not included in local market share calculations, because it is not possible, given current data, to determine where the depositors of such banks are located.*”).

8 Submission of Wachtell, Lipton, Rosen & Katz to the Antitrust Division of the Department of Justice as to Revisions to the 1995 Banking Guidelines (Oct. 15, 2020), available at <https://www.justice.gov/atr/page/file/1330316/download>. As a point of comparison, the European Commission does not exclude the EU’s banking sector from its standard approach for assessing overall levels of market concentration, with the same test for all industries. The European Commission’s assessment of the significance of HHIs also differs slightly from the 2010 Horizontal Merger Guidelines, in that transactions with a post-merger HHI below 1,000 are unlikely to be investigated. With regard to “mid-ground” mergers (e.g., a post-merger HHI between 1,000 and 2,000 and delta below 250, or a post-merger HHI above 2,000 and a delta below 150), the European Commission is unlikely to identify horizontal competition concerns unless other relevant factors are present, such as evidence of past or ongoing coordination between the parties, or the existence of significant cross-shareholdings with other market participants.

among other things, it should align the HHI thresholds in the 1995 Guidelines with those in the 2010 Horizontal Merger Guidelines,⁹ recognizing that much has changed in the last two-plus decades.¹⁰ In particular, “*the way people bank and the new technologies that are available (...) provide consumers competitive alternatives to traditional banking.*”¹¹ Perhaps for this reason, in its recent review of the BB&T and SunTrust merger, the Antitrust Division “*did not rely exclusively on the Banking Guidelines and its formulas.*”¹² HHI thresholds, however, must be contextualized within their limited role as an initial screening tool for both the Antitrust Division and the banking regulators, as well as to practitioners advising their clients on transactions. Rarely are HHIs dispositive on the issue of whether a bank transaction is anticompetitive. As noted by one commentator, “*the DOJ and banking regulators have often cleared transactions with concentration levels that significantly exceed the current thresholds.*”¹³ While this same commentator argues that this fact should support revising up the HHI thresholds to those of the 2010 Horizontal Merger Guidelines, the approval of transactions exceeding these thresholds would suggest the limited utility of HHIs in bank merger reviews.

9. Traditional HHI analysis also does not take into account “*evidence that smaller banks tend to excel at serving the credit needs of local businesses*” or “*how common ownership of banks by large asset managers may affect post-merger competition.*”¹⁴ This argues in favor of limiting the deference of HHIs in bank merger reviews.

2. Redefining relevant product and geographic markets

10. HHI thresholds draw their significance from properly defined product and geographic markets. The Antitrust Division assesses the competitive effects of bank transactions on disaggregated products markets such as retail, small business or middle-market banking products and services. The banking agencies such as the Federal Reserve, by contrast, looks at the “cluster” of commercial banking products and services.¹⁵ For retail banking, the Antitrust Division treats the deposits of commercial banks and thrifts the same, weighing them at 100%, for purposes of calculating the HHI. For small business banking, the Antitrust Division applies a 2% test to

determine which competitors to include, which assigns 100% weighting to all institutions that devote 2% of their total assets to commercial and industrial (C&I) loans.¹⁶ Credit unions may be included if they are an active competitor in the market but reliable data may not be readily available since they do not report deposit data to the Federal Deposit Insurance Corporation (FDIC). Significantly, online banking alternatives are not considered for purposes of HHI calculations.

11. Given the emergence of new technologies and the rise of fintechs offering realistic alternatives to traditional banking, the question arises whether and how non-depository institutions should be included in bank merger reviews. As the Office of the Comptroller of the Currency (OCC) observed in its response to the Antitrust Division’s Request for Public Comments on Updating Bank Merger Review Analysis, the “*core question is whether the merged company will be able to raise prices or not. Pricing for loans or payment services aren’t necessarily correlated with deposits.*”¹⁷ The major hurdle in considering non-depository institutions is the difficulty of obtaining readily available data, so the onus clearly falls on the merging parties to develop evidence of competition from non-traditional banks. The important takeaway is that the opportunity exists to demonstrate a broader relevant product market than a traditional one based solely on deposits.

12. A similar opportunity exists for more flexible geographic markets. In the initial screening exercise, the Antitrust Division uses the Federal Reserve’s predefined banking markets. But it is not bound to these markets. In fact, the Antitrust Division acknowledges that the geographic area in which a retail customer is willing to travel for banking services may differ from that of a small business customer. Small business customers tend to be more limited geographically.¹⁸ The skeptics of bank consolidation have focused their concerns on the impact that bank mergers have on rural markets, in particular on low-income communities.¹⁹ The argument goes that low-income communities do not have access to the technologies they need for new technologies and fintechs to have any meaningful impact.²⁰ This appears to be supported by a recent study of Federal Reserve Board staff, finding that “[r]ural households are less likely to use online banking, and are less likely to use the internet to obtain information for borrowing and savings decisions. Rural households are also more likely to be ‘unbanked’ and tend to travel farther for banking services than urban households. Rural households are less likely to have high search intensity for banking as well, evidence consistent with greater search costs in

9 *Supra* n. 4.

10 Deputy Assistant Attorney General Michael Murray, The Muscular Role for Antitrust in Fintech, Financial Markets, and Banking: The Antitrust Division’s Decision to Lean In (Oct. 14, 2020), available at <https://www.justice.gov/opa/speech/deputy-assistant-attorney-general-michael-murray-delivers-remarks-university-michigan-law>.

11 *Ibid.* at 6.

12 *Ibid.* at 5.

13 *Supra* n. 8, at 10.

14 Comment of FTC Commissioner Rohit Chopra and Professor Jeremy C. Kress on Bank Merger Competitive Review (Oct. 16, 2020), available at https://www.ftc.gov/system/files/documents/public_statements/1581730/chopra_-_comment_doj_banking_merger_guidelines.pdf.

15 *Supra* n. 6 at Question 9.

16 *Ibid.* at Question 31.

17 Office of the Comptroller of the Currency, Response to Department of Justice Antitrust Division’s Request for Public Comments on Updating Bank Merger Review Analysis (Oct. 1, 2020) at 2, available at <https://www.justice.gov/atr/page/file/1330161/download>.

18 *Supra* n. 6 at Question 29.

19 Letter from Senator Elizabeth Warren to Assistant Attorney General Makan Delrahim (Oct. 16, 2020), available at https://www.warren.senate.gov/imo/media/doc/2020_10_16%20Comment%20Letter%20to%20DOJ%20on%20Bank%20Merger%20Review%20Process.pdf.

20 *Ibid.* at 3.

rural banking markets. These differences suggest that it is more difficult for rural banking clients to leave their bank if they are confronted with quality degradation or a price increase.”²¹

13. Another research study by Fed staff, however, suggests that older, higher-wealth and self-employed households are more likely to use their local branch.²² That same study concluded that data indicated nonlocal lenders are gaining importance in small business lending, suggesting the broader product and geographic markets may be appropriate. Perhaps the most important takeaway is that there appears to be real differences between rural and urban banking customers, which needs to be considered in any antitrust analysis of bank mergers in less urban areas.

14. In any event, the importance of considering the impact of bank mergers on rural markets is not lost on the Antitrust Division, as reflected in its recent agreement with BancorpSouth Bank and Cadence Bank on September 2, 2021.²³ In requiring divestitures of seven branches in three Mississippi towns, including all deposits and loans as well as physical assets, Acting Assistant Attorney General Richard A. Powers said that the “*settlement underscores that all Americans, including those in rural communities and small towns, are entitled to access competitively priced banking products and services close to where they live and work.*”²⁴ Noteworthy is a provision in the settlement agreement that would require the merging parties to sell or lease to an insured depository institution that offers deposit and credit services to small businesses any branches located in the affected rural markets that are closed within three years of the merger’s closing.²⁵ It may be that bank mergers in less urban areas or those that have a disproportionate impact on LMI communities, where fintech purportedly has a more limited presence, will be more heavily scrutinized by the Antitrust Division.

3. More rigorous analysis required?

15. The glaring absence of a single court challenge by the Antitrust Division in thirty-five years and the parallel absence of a bank merger application denial by the banking agencies in over fifteen years have been interpreted as “rubber stamping” of bank mergers. The absence of a court challenge or merger application

denial, however, should not be indicative of missing rigor in the Antitrust Division’s competitive analysis of bank transactions.²⁶ In the past six months, the Antitrust Division has required divestitures of multiple branches in two separate bank transactions as a condition of its approval.²⁷ Based on the dates these transactions were announced and when they were cleared by the Antitrust Division, one can surmise that each transaction was subject to several months of investigation. In the BB&T and SunTrust merger, which was announced in early 2019, the Antitrust Division approved the transaction, but with the “*largest bank divestiture in a [bank merger] in over a decade,*”²⁸ staff “*conducted almost 100 interviews of market participants, reviewing thousands of documents, analyzing data and considering the broad competitive impact of a merger (...) on a national, regional and local level.*”²⁹ More telling, the divestitures ordered by the Antitrust Division support their commitment to maintain competition for banking services at the local level by requiring that any branch closed by the merging parties is restored with another competent operator.

16. Branch closures following a bank merger have been used by critics as further evidence of the inadequacy of the merger review process.³⁰ Given the new competitive realities presented by fintechs, branch closures should not be synonymous with anticompetitive conduct, especially given the ever-increasing number of Americans who now bank primarily online. Are branch closures the result of technological innovation responding to changing customer behavior, or is technology killing bank branches? The cause of branch closures, and consequently its probative value on bank merger analysis, is less important than recognizing the role of technology in transforming the way consumers bank. As reflected in a recent speech by Federal Reserve Governor Michelle Bowman to the ABA’s Conference for Community Bankers: “*Technological developments and financial market evolution are quickly escalating competition in the banking industry, and our approach to analyzing the competitive effects of mergers and acquisitions needs to keep pace. (...) I believe we should consider revisions to that framework that would better reflect the competition that smaller banks face in an industry quickly being transformed by technology and non-bank financial companies.*”³¹

17. While technology may help to mitigate the potential harm from branch closures, the benefits are not equally distributed across communities. The Antitrust Division’s recent agreements with merging parties seem

21 D. Benson, S. Grundl and R Windle, How do Rural and Urban Retail Banking Customers Differ?, *FEDS Notes*, Washington: Board of Governors of the Federal Reserve System (June 12, 2020), <https://doi.org/10.17016/2380-7172.2513>.

22 E. Anenberg, A. C. Chang, S. Grundl, K. B. Moore, and R. Windle, The Branch Puzzle: Why Are there Still Bank Branches?, *FEDS Notes*, Washington: Board of Governors of the Federal Reserve System (Aug. 20, 2018), available at <https://doi.org/10.17016/2380-7172.2206>.

23 Press release, Justice Departments Requires Divestitures in BancorpSouth Bank’s Merger with Cadence Bank (Sept. 2, 2021).

24 *Ibid.*

25 *Ibid.*

26 For a more detailed analysis on this issue, please see Bank Policy Institute (“BPI”), *Bank Merger Applications in Law and Practice* (Aug. 20, 2021).

27 *Ibid.*; Press release, Justice Department Requires Divestitures in Huntington Bancshares Incorporated’s Acquisition of TCF Financial Corporation (May 25, 2021).

28 Press release, U.S. Dep’t of Justice, Justice Department Requires Divestitures in Order for BB&T and SunTrust to Proceed with Merger (Nov. 8, 2019).

29 *Supra* n.10.

30 *Supra* n. 20, at 3.

31 Federal Reserve Governor Michelle W. Bowman, My Perspective on Bank Regulation and Supervision (Feb. 16, 2021), available at <https://www.federalreserve.gov/newsevents/speech/files/bowman20210216a.pdf>.

to acknowledge this, by requiring that branches closed within three years of closing must be sold or leased to an institution with experience in providing banking services and loans to the local community.³² This ensures competition is restored or maintained.

4. Transparency of pre-merger discussions with regulators

18. Interestingly, the practice whereby banks wanting to merge confer with their regulators before submitting their application has been heavily criticized for its lack of transparency. This criticism would suggest that absent these pre-merger conferences with regulators, there would be more transactions blocked or bank merger applications denied. Yet, it is likely that this very process of pre-merger discussions encourages merging parties to identify and resolve any potential competitive issues upfront, obviating the need for the Antitrust Division to challenge a transaction in court or the banking agencies to deny a merger application. If the argument is that the local community should be heard on their views about the likely effects of a merger, then there is already a mechanism for that. The banking agencies welcome public comments on proposed transactions even though there is no statutory requirement to do so.

5. Adding another regulator to review and approve bank mergers

19. Senator Elizabeth Warren supports a new role for the Consumer Financial Protection Bureau (“CFPB”), in addition to the Antitrust Division and the banking agencies, to review and approve any merger in which one party offers consumer financial products. The CFPB is an independent bureau within the Federal Reserve System, and as its name suggests, its purpose is to ensure that banks, lenders and other financial companies treat consumers of their financial products and services “fairly.”³³ FTC Commissioner Rohit Chopra, and recently confirmed head of the CFPB, has been a vocal advocate for more rigorous bank merger review standards, citing evidence that current standards have permitted too many consolidations, which have led to higher fees, less lending,

and less economic activity, a consequence that has fallen especially hard on low-income and minority communities.³⁴ Commissioner Chopra also proposed that the DOJ’s bank merger framework take into account the effect that consolidation would have on consumer data and privacy, suggesting that access to more consumers, and therefore their data, confers a competitive advantage. The corollary is that a bank merger consolidating customer personal data could raise competitive concerns. If Senator Warren has her way, Commissioner Chopra’s presence at the helm of the CFPB may lead to the interesting result of a bank merger being blocked in over thirty-five years by an agency that lacks the relative expertise to conduct competitive analyses of bank transactions.

20. To ensure that bank mergers serve the convenience and needs of communities, Senator Warren has also proposed prohibiting mergers unless the parties attained the highest rating in two of their last three Community Reinvestment Act (“CRA”) exams. The CRA, enacted in 1977, requires the Federal Reserve and other federal banking regulators—namely, the Federal Deposit Insurance Corporation and the Office of the Comptroller of the Currency—to encourage financial institutions to help meet the credit needs of the communities in which they do business, including LMI neighborhoods. This introduces social objectives into bank merger review, which may be more appropriately enforced by the banking agencies than the Antitrust Division, which is mandated to block mergers that result in a “*substantial lessening of competition*.”

IV. Conclusion

21. The drumbeat for antitrust law reform keeps getting louder, with bank merger reform in the crosshairs. The disposition of the current administration clearly favors more stringent standards for merger review, with the Federal Trade Commission’s withdrawal from the Vertical Merger Guidelines that it jointly developed with the Antitrust Division a harbinger of change. Counsel for merging bank clients should be prepared to defend transactions not only on traditional antitrust grounds but also on how the convenience and needs of communities will continue to be met. ■

³² *Supra* n. 24.

³³ See <https://www.consumerfinance.gov>.

³⁴ *Supra* n. 14.

Big Techs, banks, and the Digital Markets Act

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I. Introduction

1. Big Tech companies have the ability and incentive to enter successfully into retail banking, leveraging their many competitive advantages, especially those originating from the accumulation of soft information about potential borrowers. Their entry is bound to have significant implications for traditional banks and competition and, importantly, for financial stability.¹

2. Whether Big Techs' entry into banking ends up promoting or undermining competition and financial stability in banking is at best uncertain. It will depend, among other things, on the regulatory framework and, specifically, on how regulators treat these new entities in relation to existing banks.

3. Specifically, the potential effects of the entry of Big Tech platforms into banking are bound to be affected if the Digital Markets Act ("DMA"),² proposed by the European Commission ("EC") and currently under discussion in the European Parliament, is finally enacted.

4. The DMA specifies a series of obligations on so-called gatekeeper platforms, i.e., providers of core platform services, such as online intermediation, search engines or app store services, which serve as important gateways

for business users (e.g., banks) to reach end users (e.g., borrowers), are important for the EU economy, and enjoy entrenched and durable positions.

5. Some of those obligations are meant to curtail, or at very least limit, the data superiority of the gatekeepers. Others are meant to protect competition within the gatekeepers' platforms, while still others are supposed to protect competition between those and other platforms.

6. All Big Tech firms who, in one way or another, have shown interest in banking—Google, Apple, Facebook and Amazon—are likely to be designated as gatekeepers and, hence, all of them are likely to be constrained by the specific obligations set out in the DMA. In what follows, we discuss whether such constraints are sufficient to ensure that the long-term impact of Big Techs' entry into banking is unambiguously positive.

II. Big Tech entry into banking

7. Unlike fintech companies, which so far have made little dent in the profits of traditional banks, Big Tech platforms possess significant competitive advantages that can be successfully leveraged onto the retail banking market: large installed customer bases, powerful brands, considerable earnings, unfettered access to capital markets and, most importantly, superior information about consumer preferences, habits, and conduct.

8. Their entry into retail banking, particularly in payment systems and consumer and SME lending, may increase competition to the benefit of consumers, though the impact of their entry may depend on whether they enter on a stand-alone basis or through cooperation agreements with established banks.

9. Big Tech platforms will benefit from a "regulatory asymmetry" when competing with established banks in Europe. The European Union's PSD2 requires banks to

* The views expressed in this paper are the authors' sole responsibility and cannot be attributed to Compass Lexecon or its clients. Please send your comments to jpadilla@compassexecon.com.

1 See M. de la Mano and J. Padilla (2018), Big Tech Banking, *Journal of Competition Law and Economics*, 14(4), pp. 494–526. See also R. M. Stultz (2019), FinTech, Big Tech, and the Future of Banks, *Journal of Applied Corporate Finance*, 31(4), pp. 86–97; J. Frost, L. Gambacorta, Y. Huang, H. S. Shin, and P. Zbinden (2019), BigTech and the changing structure of financial intermediation, *BIS Working Papers* No. 779; and, for a more up-to-date overview, J. C. Crisanto, J. Ehrentraud, A. Lawson, and F. Restoy (2021), Big tech regulation: what is going on?, *FSI Insights on policy implementation* No. 36, BIS, available at <https://www.bis.org/fsi/publ/insights36.pdf>.

2 European Commission, Proposal for a Regulation of the European Parliament and of the Council on contestable and fair markets in the digital sector (Digital Markets Act), COM(2020) 842 final, 15 December 2020, available at <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52020PC0842&from=en>.

allow authorized third-party providers (“TPPs”) access to their customers’ account information and make payments from customers’ accounts. Banks are obliged to provide access to customer data to all authorized competitors in digital form and free of charge. In sharp contrast, under the General Data Protection Regulation (“GDPR”),³ TPPs, including Big Tech platforms, are obliged to facilitate data portability only where it is technically feasible.

10. According to the Institute of International Finance, this “*asymmetry [in regulation] or lack of reciprocity [concerning data sharing] means that a regulation intended to facilitate the entrance of new players and promote competition and end-user choice in the payments market has created a competitive disadvantage for banks and other financial services firms vis-à-vis players from other industries. [These risks are] contributing to the existing trend in digital markets towards the concentration of power in the hands of a few big technological players.*”⁴

11. As regards lending, Big Tech platforms are unlikely to enter as “intermediaries,” in direct competition with incumbents, since that would entail a substantial regulatory burden. Therefore, they are likely to operate as “marketplaces,” offering their customers the ability to engage with many financial institutions (banks and non-banks) using a single distribution channel.⁵ Banks may have no option but to join these platforms if they want to reach out to the platforms’ customers. Relative to the status quo, where each borrower is de facto locked into the bank with which it has a relationship, borrowers joining a marketplace where many banks operate will benefit from increased banking competition.

12. The risk is that, within a few years, they succeed in monopolizing some segments of the retail banking industry, such as the origination and distribution of loans to consumers and SMEs.⁶ They may end up transforming into “narrow banks,” accepting deposits from the public and investing them in products originated and distributed by others, including the Big Techs. This will be particularly troublesome for established banks since these are their most profitable lines of business.⁷

3 See Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data and repealing Directive 95/46/EC (General Data Protection Regulation), OJ L 119, 4.5.2016, p. 1. Likewise, the UK Open Banking initiative requires the nine largest banks in the UK to allow their customers to provide access to their own bank data securely with third parties, using an open banking standard. The CMA requires banks to adopt and maintain a common and open application programming interface (API) standard that permits authorized intermediaries to access information about bank services, prices, and service quality.

4 See Institute of International Finance (2018), Reciprocity in Customer Data Sharing Frameworks.

5 See A. Hagi and J. Wright (2015), Marketplace or Reseller? *Management Science*, 61(1), pp. 84–203.

6 According to Moody’s, banks will likely “cede a portion of their control over the distribution of retail financial services despite efforts to increase their presence on digital platforms.” See Moody’s (2018), Big Tech a real threat to financial firms in retail services.

7 According to a recent McKinsey report, the distribution business of banks represents 47% of their revenues but 65% of their profits and has a ROE of 20% (compared with an average ROE of 7–8%). See McKinsey (2017), Weathering the storm: Asia-Pacific Banking Review 2016.

Because most rents associated to lending are appropriated by those who originate and distribute, traditional banks could experience a significant decline in profit margins due to the commoditization of their businesses and might be forced to repurpose their distribution businesses to address the needs of special customer niches.

13. While their extensive experience and established customer relationships may protect traditional banks for a while, allowing them to offer superior products at a more reasonable cost, Big Tech competitors will have the incentive and ability to recruit financial talent, and thus we expect them to bridge that gap relatively soon. The experience from other industries—from online advertising to software; from travel distribution to retailing—shows that Big Tech firms scale up their businesses very quickly, tailoring their services around customers’ needs, exploiting economies of scope and data advantages, and cross-subsidizing their services with the revenues obtained in their primary markets.

14. Whether Big Tech entry ends up fostering competition in retail banking in the medium and long term is at best uncertain. It will depend, among other things, on the ability of traditional banks to ring-fence their loyal and highly profitable customer bases, exploit their informational advantages and reputation regarding data protection, and/or bundle products with the current accounts of their customers.

15. In a market scenario where Big Tech platforms originate and distribute loans and banks simply fund the loans originated elsewhere, the proportion of bad projects being funded may increase. Default rates may also increase since a retail banking market where the origination of loans and their funding are in different hands is typically subject to significant moral hazard and adverse selection problems.

16. Big Tech platforms may, depending on their contracts with the banks funding the projects, have little or no stake in the loans they help to originate and distribute and may, therefore, have incentives to reduce the quality of the loan pool to maximize loan origination volume and, in parallel, the volume of other products or services sold to borrowers through their (bundled) platforms.⁸ They may also invest less in screening projects and borrowers, even if they could do so at a lower cost than the banks themselves.⁹ Limited screening results in the origination of loans with poor soft information and high default rates.¹⁰

8 See B. Vallée and Y. Zeng (2019), Marketplace Lending: A New Banking Paradigm?, *Review of Financial Studies*, 32(5) pp. 1939–1982.

9 See A. Purnanandam (2011), Originate-to-Distribute Model and the Subprime Mortgage Crisis, *Review of Financial Studies*, 24(6), pp. 1881–1915. Purnanandam shows evidence that the screening incentives of lenders to collect soft information decrease under an originate-to-distribute model.

10 See T. Balyuk and S. Davydenko (2018), Reintermediation in FinTech: Evidence from Online Lending, Working Paper, Joseph L. Rotman School of Management at the University of Toronto. Balyuk and Davydenko show that default rates on loans handled by fintech firms are higher than on other credits to consumers with similar credit scores.

17. Moral hazard risk may increase even if the platforms funded the loans they originate, since they will have incentives to expand credit to, e.g., sell additional products or services or acquire complementary data that can be monetized through their platforms.

18. Digital platforms acting as lending platforms will make money charging fees on both lenders (including banks) and borrowers. Therefore, they will have the incentive to broker as many deals as possible, which is bound to result in adverse selection on both sides of the market.

19. Even if the entry of the Big Techs into retail banking fails to produce the change in the business model of traditional banks, the increase in competition resulting from their entry “*may also intensify risk taking by eroding the franchise value of the bank and diminishing incentives to monitor loans and maintain long-term relationships with [clients].*”¹¹ In this regard, the Financial Stability Board (FSB), which comprises ministries of finance, central banks, supervisory and regulatory authorities from twenty-five jurisdictions, expressed concern that entry of big techs in competition with traditional banks may generate financial instability as “*heightened competition could (...) put pressure on financial institutions’ profitability. This could lead to additional risk taking among incumbents in order to maintain margins.*”¹²

III. Regulating Big Techs

20. The competitive effect of the entry of Big Tech firms, and the ensuing effects on financial stability, will depend on how regulation treats these new entities in absolute terms but also in relation to existing banks.

21. Banning Big Techs from retail banking is not a solution. Many economists, policymakers and industry commentators remain seriously concerned about the poor state of competition in the banking industry.¹³ This state of affairs, it is argued, explains why the cost of financial intermediation remains high and has only declined marginally since the 2008 crisis. The negative implications for consumer welfare and economic growth are said to be significant.¹⁴

22. Cross-border entry has failed to make a difference, since large national incumbents have been able to leverage their large and partly captive customer base, proven experience and reputation, superior knowledge of existing regulations, and access to cheaper capital funding. Fintech companies do not seem capable of changing the status quo, given the absence of an installed, loyal customer base, limited access to soft information about potential customers,¹⁵ lack of reputation and brand recognition, and a relatively high cost of capital.¹⁶ Their ability to effectively compete in, e.g., the origination and distribution of consumer and SME lending, is unclear, to say the least.¹⁷

23. Given that banning entry by Big Techs is not appropriate public policy, taking advantage of the benefits of Big Techs’ entry, while limiting the risks to financial instability above mentioned, requires regulating the Big Tech.

24. How? At a minimum, the regulatory gap that separates them at present should be closed. If a Big Tech platform has discretion in selecting potential borrowers or portfolios of borrowers for their clients, then it should be regulated as a portfolio manager. If it develops a secondary market for its products and issues tradable and non-tradable securities, it should be subject to security regulations. Big Tech platforms should also be required, e.g., to disclose whether their preselection of financial products is independent and neutral, and to act honestly, fairly, and professionally in accordance with the best interests of their clients. They should refrain from engaging in predatory lending and comply with the same fiduciary and investor protection obligations as traditional banks and other financial intermediaries.

25. And yet closing the regulatory gap may prove insufficient due to the data superiority of the Big Techs. This could be achieved, for instance, by mandating data sharing. Any mandated data sharing scheme ought to respect the following principles.¹⁸ Firstly, customers should be able to exercise control over the data about them and their transactions that are shared with third parties. Secondly, the nature and scope of the data exchange should be transparent to customers. Thirdly, the information exchange must happen through secure methods. Fourthly, the data should be accessible through standardized APIs, so that the exchange takes place efficiently and without undue delay. Finally, the sharing scheme must

¹¹ See X. Vives (2016), *Competition and Stability in Banking: The Role of Regulation and Competition Policy*, Princeton University Press.

¹² See Financial Stability Board (2019), *FinTech and market structure in financial services: Market developments and potential financial stability implications*.

¹³ See note 25 and references therein.

¹⁴ See, among others, G. Bazot (2014), *Financial Consumption and the Cost of Finance: Measuring Financial Efficiency in Europe (1950–2007)*, Working Paper, Paris School of Economics; T. Philippon (2015), *Has the Financial Industry Become Less Efficient? On the Theory and Measurement of Financial Intermediation*, *American Economic Review*, 105(4), pp. 1408–1438; and T. Philippon (2018), *The FinTech Opportunity*, Working Paper, Stern School of Business at New York University.

¹⁵ As noted by Liberti and Petersen (2018), “*Hard information is quantitative, easy to store and transmit in impersonal ways, and its information content is independent of its collection.*” Instead, “*Information that is difficult to completely summarize in a numeric score, where context matters, and where it is difficult to separate the collection of the information from its use is what we call soft information.*” See J. M. Liberti and M. A. Petersen (2018), *Information: Hard and Soft*, Working Paper, North-Western University. See also R. T. Thakor and R. C. Merton (2019), *Trust in Lending*, Working Paper, MIT Sloan School of Management.

¹⁶ See G. Buchak, G. Matvos, T. Piskorski, and A. Seru (2018), *Fintech, Regulatory Arbitrage, and the Rise of Shadow Banks*, *Journal of Financial Economics*, 130(3), pp. 453–483.

¹⁷ For a more optimistic view of the impact of Fintech companies, see T. Philippon (2020), *On Fintech and Financial Inclusion*, *BIS Working Papers*, No. 841.

¹⁸ World Economic Forum (2018), *The Appropriate Use of Customer Data in Financial Services*.

provide incentives so that the party in control of the data does share the data and the party which receives it builds value-added propositions with such data.

26. An alternative would be to limit the ability of large tech platforms to gather and combine personal and transaction data. This would require explicit regulation. Self-regulation is bound to fail. Firstly, while consumers do care about privacy,¹⁹ they seem to be resigned about having to surrender their personal data in order to be able to make use of the largest and most popular tech platforms.²⁰ As a result, they spend little or no time checking the privacy policies of online platforms and, even when they do so, they seem unable to understand their implications. Secondly, data on a user can be used not only to tailor the platform's products and services to satisfy the needs of that user, but also to adjust the service, including its price, to other users who are related. Hence, individual consent by a user may generate (positive or negative) externalities on other users. In other words, data have a social value.²¹ As noted by Choi et al. (2019),²² because this externality may be negative in many circumstances, "*excessive loss of privacy emerges even with costless reading and perfect understanding of all privacy policies.*" That is, informed consent may prove insufficient.

IV. The DMA: An overview

27. The DMA proposal, which introduces rules for platforms that act as "gatekeepers" in the digital sector, will, if approved, constrain Big Tech firms in ways that are likely to have a material impact on their conduct in retail banking markets. The goal of the DMA is to ensure that markets where gatekeepers are present are, and remain, contestable and fair, independently from the actual, likely or presumed effects of the conduct of a given gatekeeper on competition on a given market.

28. The DMA applies to "core platform services" provided or offered in the European Union. These include online intermediation services: online search engines, online social networking services, video-sharing

platform services, number-independent communication services, operating systems, cloud computing services, and advertising services.

29. It regulates companies providing such services provided they hold a "gatekeeper" position. A platform is presumed to be a gatekeeper if it meets three cumulative criteria: (i) size, annual turnover in the EEA equal to or above €6.5 billion in the last three financial years, or market capitalization of at least €65 billion in the last financial year; (ii) number of users, more than 45 million monthly active end users in the EU and more than 10,000 yearly active business users in the EU; and (iii) entrenched position, presumed to be the case if the company met the other two criteria in each of the last three financial years. A specific company meeting these thresholds will be designated as a gatekeeper unless it submits substantiated arguments to demonstrate the contrary.²³

30. The DMA establishes a series of prohibitions and obligations for gatekeepers.²⁴ Some of these are considered self-executable without the need for particularization or specifications. For example, gatekeepers shall refrain from combining personal data sourced from their core platform services with personal data from their other services, or from third-party services unless the user has been presented with the specific choice and provided consent.

31. Other obligations are regarded as susceptible of being further specified, such as, e.g., gatekeepers (i) need to provide their business users with access to the data generated by their activities on the gatekeeper's platform; (ii) shall not use data obtained from their business users to compete with these business users; (iii) shall refrain from self-preferencing their services and products in rankings; etc.

32. If a gatekeeper does not comply with the rules, the EC can impose fines of up to 10% of the company's total worldwide annual turnover and periodic penalty payments of up to 5% of the company's total worldwide annual turnover. In case of systematic infringements, the Commission can impose additional remedies, including obliging a gatekeeper to sell a business, or parts of it.

33. The EC will have the power to carry out market investigations for the purpose of (i) identifying gatekeepers that are not captured by the quantitative thresholds defined above; (ii) identifying new prohibitions and obligations not included in the current list; and (iii) designing additional remedies for when a gatekeeper has systematically infringed the rules of the DMA.

¹⁹ See, e.g., T.-M. Jai and N. J. King (2016), Privacy versus Reward: Do Loyalty Programs Increase Consumers' Willingness to Share Personal Information with Third-Party Advertisers and Data Brokers? *Journal of Retailing and Consumer Services*, 28, pp. 296–303; J. Grossklags and A. Acquisti (2007), When 25 cents is too much: An experiment on willingness-to-sell and willingness-to-protect personal information, in *Workshop on Economics of Information Security (WEIS)*, Pittsburgh; A. Acquisti, L. K. John and G. Loewenstein (2013), What Is Privacy Worth? *Journal of Legal Studies*, 42(2), pp. 249–274; and T. Regner and G. Riener (2017), Privacy is Precious: On the Attempt to Lift Anonymity on the Internet to Increase Revenue, *Journal of Economics and Management Strategy*, 26(2), pp. 318–336.

²⁰ See J. Turow, M. Hennessy and N. A. Draper (2015), The Trade-off Fallacy – How Marketers Are Misrepresenting American Consumers and Opening Them up to Exploitation, Working Paper, University of Pennsylvania, Annenberg School for Communication.

²¹ See D. Bergemann and A. Bonatti (2019), The Economics of Social Data: An Introduction, *Cowles Foundation Discussion Paper No. 2171*.

²² See J.-P. Choi, D.-S. Jeon and B.-C. Kim (2019), Privacy and Personal Data Collection with Information Externalities, *Journal of Public Economics*, 173(C), pp. 113–124.

²³ The three thresholds above are sufficient but not necessary for the presumption. The Commission may identify as a gatekeeper a provider of core platform services that does not meet those thresholds if it can demonstrate that: (i) it has a significant impact on the internal market; (ii) it operates a core platform service which serves as an important gateway for business users to reach end users; and (iii) it enjoys an entrenched and durable position in its operations, or it is foreseeable that it will enjoy such a position in the near future.

²⁴ For those gatekeepers that do not yet enjoy an entrenched position but are expected to do so in a near future, only those obligations that are necessary and appropriate to ensure that the company does not achieve by unfair means such an entrenched and durable position in its operations apply: i.e., these are the obligations included in Articles 5(b), 6(1)(e), 6(1)(f), 6(1)(h) and 6(1)(i) of the DMA proposal.

V. The DMA: Implications for retail banking

34. The effects of the entry of Big Tech firms into retail banking will be necessarily conditioned by the enactment of the DMA. In this section, we assume that the obligations and prohibitions listed in Articles 5 and 6 of the EC proposal are part of the final version of this regulation and assess whether such constraints will limit the downside risk of Big Tech's entry while preserving its beneficial effects.

35. Before discussing the impact of the obligations set out in the DMA, it is worthwhile noting that all Big Tech firms who, in one way or another, have shown interest in banking—Google, Apple, Facebook and Amazon—are likely to meet the gatekeeper thresholds set out in Article 3 of the DMA. Thus, all these companies will be constrained in their behavior by the specific obligations included in the DMA.

1. Dealing with the gatekeepers' data superiority

36. Some of those obligations could curtail, or at very least limit, the data superiority of the digital platforms competing with traditional banks.

37. For example, Article 5(a) limits the scope for bundling banking data with data stemming from, say, a search engine: “[G]atekeeper[s] shall (...) refrain from combining personal data sourced from [their] core platform services with personal data from any other services offered by the gatekeeper or with personal data from third-party services (...) unless the end user has been presented with the specific choice and provided consent.”

38. While it is not entirely clear what is meant by “specific choice” and “consent,” according to Recital 36, “[t]he conduct of combining end user data from different sources or signing in users to different services of gatekeepers gives them potential advantages in terms of accumulation of data, thereby raising barriers to entry. To ensure that gatekeepers do not unfairly undermine the contestability of core platform services, they should enable their end users to freely choose to opt-in to such business practices by offering a less personalised alternative (...) and should be proactively presented to the end user in an explicit, clear and straightforward manner.”

39. Thus, for example, Big Tech company X would not be allowed to combine data obtained through the platforms in which it operates with user data obtained from its payment services platform unless (i) the user is given the option to use that payment services platform even if she does not agree to the combination of such data; (ii) that choice is proactively presented to her in an explicit,

clear and straightforward manner; and (iii) she opts in to use the more personalized alternative.

40. Article 6(1)(a) is also relevant in this respect. It states that gatekeepers shall “refrain from using, in competition with business users, any data not publicly available, which is generated through activities by those business users, including by the end users of these business users, of its core platform services or provided by those business users of its core platform services or by the end users of these business users.”

41. That is, for example, a gatekeeper platform offering, among other things, the financial services of banks will not be able to collect non-publicly available data from the banks operating in its platform, or their users, to compete against them.

42. Article 6(1)(h), in turn, requires gatekeepers to “provide effective portability of data generated through the activity of a business user or end user and shall, in particular, provide tools for end users to facilitate the exercise of data portability, in line with Regulation EU 2016/679, including by the provision of continuous and real-time access.”

43. That is, business users (e.g., a bank operating through the gatekeeper's platform) and end users (e.g., the bank's customers in the platform) have the right to access and port elsewhere (e.g., to the bank's own platform) the data they provided or generated while using the gatekeeper's platform. The gatekeeper is required to facilitate such portability by providing continuous and real-time access (e.g., by granting access to properly documented APIs).

44. In turn, Article 6(1)(i) requires gatekeepers to “provide business users, or third parties authorised by a business user, free of charge, with effective, high-quality, continuous and real-time access and use of aggregated or non-aggregated data, that is provided for or generated in the context of the use of the relevant core platform services by those business users and the end users engaging with the products or services provided by those business users; for personal data, provide access and use only where directly connected with the use effectuated by the end user in respect of the products or services offered by the relevant business user through the relevant core platform service, and when the end user opts in to such sharing with a consent in the sense of the Regulation (EU) 2016/679.”

45. In other words, banks must be granted access free of charge and in a continuous and real-time fashion to non-personal data generated or provided by them or their customers in the platform when using the gatekeeper's core platform services. For the case of personal data, banks only have the right to access such data if their customers opt in and such data are directly connected with the use effectuated by those customers in respect of the banks' products or services.

2. Protecting competition across platforms

46. Other obligations limit gatekeepers' ability to limit competition with other platforms, including the digital platforms operated by banks.

47. For example, Article 5(b) implies that gatekeepers should refrain from entering contracts with banks and other financial intermediaries imposing retail parity agreements, such as those used by hotel room distribution platforms. Specifically, this article states that gatekeepers shall *“allow business users to offer the same products or services to end users through third party online intermediation services at prices or conditions that are different from those offered through the online intermediation services of the gatekeeper.”*

48. That is, gatekeepers cannot enter into agreements forcing banks and financial intermediaries to offer their products or services through the gatekeeper platform at prices or conditions that are better, or at least no worse, than the prices and conditions available through any other platform, including their own websites. Thus, assuming Big Tech platform X is designated to be a gatekeeper, it will not be able to impose on the banks offering their products or services through X the obligation to offer better terms through X than through other online banking platforms, including their own.

49. Article 5(c), in turn, states that gatekeepers shall *“allow business users to promote offers to end users acquired via the core platform service, and to conclude contracts with these end users regardless of whether for that purpose they use the core platform services of the gatekeeper or not, and allow end users to access and use, through the core platform services of the gatekeeper, content, subscriptions, features or other items by using the software application of a business user, where these items have been acquired by the end users from the relevant business user without using the core platform services of the gatekeeper.”*

50. For example, this obligation prevents, say, a smartphone's app store that is designated as a gatekeeper from restricting a third-party banking app distributed through that app store from offering products and services through alternative platforms (e.g., the third-party bank's website) to customers acquired within the gatekeeper's app store. Furthermore, those customers should be allowed to use the products and services acquired outside the gatekeeper's app store within it.

3. Protecting competition within the gatekeeper's platforms

51. The DMA also includes a series of obligations seeking to protect competition within the gatekeepers' platforms. For example, Article 5(f) states that gatekeepers shall *“refrain from requiring business users or end users*

to subscribe to or register with any other core platform services identified pursuant to Article 3 or which meets the thresholds in Article 3(2)(b) as a condition to access, sign up or register to any of their core platform services identified pursuant to that Article.”

52. That is, for example, an app store that is designated to be a gatekeeper cannot require its customers to subscribe to, or register with, an app owned by the gatekeeper—say an app providing payment services—when the user accepts the app store's terms of service.

53. Also, Article 6(1)(f) requires gatekeepers to *“allow business users and providers of ancillary services access to and interoperability with the same operating system, hardware or software features that are available or used in the provision by the gatekeeper of any ancillary services.”*

54. In the context of payment services, for example, assuming Apple and Google were regarded as gatekeepers, they could be required to grant access to the NFC antennas of iPhones and Android phones to third-party digital wallets.

55. The DMA also seeks to control the risk of self-preferencing. Thus, Article 6(1)(d) says that gatekeepers shall *“refrain from treating more favourably in ranking services and products offered by the gatekeeper itself or by any third party belonging to the same undertaking compared to similar services or products of third party and apply fair and non-discriminatory conditions to such ranking.”*

56. Again, in the context of payment services, assuming Apple and Google were regarded as gatekeepers in the provision of app store services, this obligation would prevent Apple's App Store and Google's Play Store from favoring the ranking of their own payment services Apple Pay or Google Pay relative to the services offered by banks and financial services distributing their apps through those app stores.

57. Furthermore, pursuant to Article 6(1)(k), which states that gatekeepers shall *“apply fair and non-discriminatory general conditions of access for business users to its software application store designated pursuant to Article 3 of this Regulation,”* while Apple Store or Google Play Store would not have an obligation to grant access to third-party banking/payment apps (see Recital 57), if access is granted, then the terms and conditions applied should be fair and non-discriminatory, relative to other banking/payment apps distributed through the app store, banking/payment apps distributed through other app stores, and the gatekeeper's own banking/payment app, if available.

58. Finally, Article 6(1)(c) states that gatekeepers shall *“allow the installation and effective use of third[-]party software applications or software application stores using, or interoperating with, operating systems of that gatekeeper and allow these software applications or software application stores to be accessed by means other than the core platform services of that gatekeeper.”*

59. Suppose again that Apple’s iOS and Google’s Android are designated as gatekeepers. Suppose further that a third-party online banking platform wishes to be accessed through iPhones and Android phones but does not want to be distributed through Apple’s App Store or Google’s Play Store, then Apple and Google could be required to allow iPhone and Android users to “sideload” that platform’s software so that it seamlessly interoperates with iOS and Android.

VI. Concluding remarks

60. To the extent that the DMA is enforced properly, the risk that Big Techs’ entry into banking may end up distorting competition in payment systems and or consumer and SME lending is significantly reduced. However, this does not mean that such entry will turn riskless post-DMA, since the DMA is unlikely to correct the financial stability problems that may characterize banking markets where both Big Techs and traditional banks compete. And there is, of course, another risk: namely, that following the DMA, Big Tech companies reconsider their plans to compete with traditional banks and decide, instead, to partner with them so that we are left, not just without the competition enhancing effect of their entry, but in a world in which banks and platforms share their data to protect and entrench their leading positions in their respective markets.²⁵ ■

25 Other potential scenarios are considered by De Nederlandsche Bank (“DNB”), the central bank in the Netherlands, in a recent paper: Changing Landscape, changing supervision: Developments in the relationship between Big Techs and financial institutions (2021). Depending on the relative innovation potential of financial institutions and Big Techs and the strategy of the Big Techs, the DNB defines four scenarios: (i) Status quo, (ii) Finance in charge, (iii) Big Tech in charge, and (iv) In competition. We are concerned about a possible fifth scenario: Cooperation and Market allocation.

The antitrust fintech challenge

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I. Introduction

1. Information technology is disrupting the world of finance both in markets and intermediation. The disruption extends from new payments systems and decentralized finance to the application of machine learning techniques to big data in credit assessment. It disrupts the offer of banking services, asset management and trading. The accumulation and processing of data are at the core of the revolution, in particular, the ability to transform soft into hard codifiable information.

2. A central question is whether progress in digital technology makes finance more contestable, in the sense of lowering barriers to entry and exit. There is no doubt that digital technology allows efficiency gains, for example, in making fast and cheaper payments, loan screening and processing, and in the speed of trading, and that it has allowed new entrants to offer new services. It has also extended the market by fostering financial inclusion offering financial services to unbanked segments of the population, particularly so in less developed financial systems. At the same time, it has allowed more targeted discrimination of customers, which can be used not only to supply more personalized services but also to price discriminate to a very fine degree. The enhanced price transparency brought by digital technology may have ambiguous dynamic pricing effects since, for example, algorithmic pricing may be a facilitating practice for collusion. Last but not least, information technology (IT) raises monopolization possibilities due to the combination of network effects and the exploitation of dynamic economies of scale due to data accumulation and efficient processing by Big Tech platforms.

3. Against this background, there is the increasing perception that antitrust has not coped with technological progress, in particular in dealing with the expansion of platforms that have gained dominance.

4. In this article, I highlight the complexity of the impact of IT on competition in the provision of financial services and the challenge that antitrust faces. I deal

first with two cases where improvements in IT may lead to excessive competition or excessive entry (in relation to a social welfare standard) in the loan market and in trading exchanges, respectively. I then present a projected oligopolistic market structure for the supply of financial services due to IT developments and consolidation of the platform delivery of financial services. I conclude with the antitrust challenges within a general policy framework.

II. Information technology progress and the intensity of competition

5. Consider two instances where the development of IT may yield excessive competition from a social welfare perspective. The first is in the loan market for credit to entrepreneurs and the second is in the proliferation of trading exchanges.

1. The impact of IT on competition in the loan market

6. Banks feel increasing pressure from the threat of digital entrants in traditional banking businesses such as lending.¹ Pressured by fintech entrants, the banking sector is adopting information technology (IT) using unconventional data like “digital footprints” to assess the quality of borrowers,² offer personalized services, and price discriminate. The COVID-19 pandemic accelerates the digitalization process and fosters remote loan operations.

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1 In emerging and developing markets mostly Big Tech platforms make inroads in lending to SMEs (e.g., MYbank in China, Mercado Libre in Argentina). In developed economies mostly fintech lenders have a relevant penetration (e.g., Quicken Loans and LendingClub in the US).

2 See T. Berg, V. Burg, A. Gombović and M. Puri, On the Rise of FinTechs: Credit Scoring Using Digital Footprints, *The Review of Financial Studies* 33, No. 7 (2020): 2845.

7. Recent work considers a context where financial intermediaries (banks for short) are specialized and can discriminate loan applicants.³ In this context, banks compete to supply entrepreneurs in each sector of activity and since they can price discriminate, this results in localized Bertrand competition. IT technology improves the capacity of financial intermediaries to screen and/or monitor loans. Entrepreneurs in a sector are located at a certain “distance” from the specialization of each bank and they benefit from its screening services since, due to the analysis of their digital footprint, the bank may know more about the success of the entrepreneur’s project than the very entrepreneur.

8. This work finds that the impact of the development of IT technology depends on the type of technology. Namely, technology that reduces the general cost of monitoring/screening projects in a sector or industry (e.g., by improving the processing of hard information) does not typically change the competitive advantage of a financial intermediary and, therefore, does not impact the intensity of competition. However, if the technology weakens the influence of bank-borrower distance on monitoring/screening costs, then it intensifies competition by reducing the relevance of expertise or bank specialization. This type of technological progress may harden soft information or improve a bank’s organizational structure.⁴ The issue is that banks may have excessive incentives to adopt the technology of the second type even if they end up fostering rivalry because they get trapped in a prisoner’s dilemma situation whenever the IT technology is cheap enough. In this case, there is excessive competition since the level of screening or monitoring of projects (which moves positively with the loan rates than banks can charge) is too low and the total surplus generated in the banking industry decreases.

9. A regulator would like banks to charge higher loan rates to induce a higher level of monitoring or screening of projects, the more so if there are costs associated with bank failure. However, if IT progress implies that the market is extended, that is that entrepreneurs who were at unserved locations obtain loans due to the lowering of monitoring or screening costs of banks, then social welfare always increases with whatever type of IT progress.

2. Technological progress and exchange competition

10. Governments and regulators have moved to foster competition among trading venues by changing their ownership structure to publicly listed companies and allowing them to compete. This has induced market

fragmentation, contributing to a drastic reduction in the cost of trading and has led exchanges to increase their reliance on the provision of services such as the sale of market data, co-location space, and fast connections to matching engines. US regulators have voiced their concern both about the potential excessive proliferation of venues and over the pricing of such technological services with the Securities and Exchange Commission (SEC) alleging that exchanges exercise too much market power in their provision.⁵

11. Recent work models liquidity provision as a vertical market where upstream exchanges with market power supply technological services (connectivity) to competitive downstream liquidity providers (market makers), who use them to satisfy liquidity traders’ demand for immediacy.⁶ Technology allows to increase the proportion of market makers that are continuously present in the market, that is, to improve the connectivity services that an exchange offers to market makers. Exchanges face a set-up cost and a variable cost of offering the connective service.

12. It is found that the entry of exchanges may be excessive or insufficient with respect to what a regulator with social welfare in mind would have. An exchange, when entering, does not account for two external effects. The first is that its decision depresses the profits of other exchanges; the second is that its entry augments connectivity capacity, market maker presence and market liquidity. Depending on what effect prevails, we will have excessive or insufficient entry from a social welfare perspective. The interesting thing is that when the set-up cost is small, the number of platforms (and the associated total capacity) is high and the profitability depression effect dominates, making entry is excessive (also note that under these conditions, further entry would have a limited impact on liquidity since the presence of market makers is already substantial).

13. Technological improvements have lowered the set-up cost of an exchange;⁷ this means that the advancement of technology has made the likelihood of an excessive number of exchanges more likely. Note that currently, in the US, thirteen cash equity exchanges compete with over thirty alternative trading systems (ATS). It must be noted, however, that twelve of the lit exchanges, which account for about two thirds of daily trading, are controlled by three major players: Intercontinental Exchange, Nasdaq, and CBOE. Indeed, incumbent exchanges, such as the NYSE, reacted to increased competition by upgrading technology (e.g., with NYSE Arca), and merging with other exchanges (e.g., the NYSE merger with Archipelago in 2005 and with Euronext in

3 X. Vives and Z. Ye, Information Technology and Bank Competition, *CEPR Discussion Paper* No. DP16258 (2021).

4 See J. M. Liberti and M. A. Petersen, Information: Hard and Soft, *The Review of Corporate Finance Studies* 8, Issue 1 (2019): 1; H. Degryse, S. Ongena and G. Tümer-Alkan, Lending Technology, Bank Organization and Competition, *Journal of Financial Transformation* 26 (2009): 24.

5 See Unfair Exchange: The State of America’s Stock Markets, SEC Commissioner Robert J. Jackson Jr., September 2018.

6 G. Cespa and X. Vives, Exchange Competition, Entry, and Welfare, *The Review of Financial Studies*, forthcoming.

7 See C. M. Jones, Understanding the Market for U.S. Equity Market Data, *Working Paper* (2018).

2007).⁸ It may well be that those exchanges exercise too much market power in setting their technological fees for data and connectivity. This poses the question of whether regulatory intervention is needed. It is possible, with sufficient information on the structure of the market, to ascertain whether it is better to regulate the fees of exchanges (since September 2020, the SEC holds *ex ante* control over exchanges' fee-setting process for "core" data, which require public comment and approval from the SEC)⁹ or use a structural measure to influence the number of players (e.g., merger policy).¹⁰

14. The upshot of the analysis of the two examples is that IT progress has a subtle influence on the intensity of competition and may potentially exacerbate an excessive competition problem in banking and an excessive proliferation of trading venues. In both cases, regulatory or antitrust intervention to improve the market outcome would need to have enough information on the basic market parameters to be effective.

III. Monopoly tendencies, Big Tech and market structure

15. Big Techs have been able to create ecosystems that exploit economies of scope across products and services and make heavy use of big data analytics. These ecosystems are protected by high exogenous and endogenous switching costs that make the platform a gatekeeper that monopolizes the interface with an important segment of customers. Indeed, the source of market power of Big Tech platforms is a feedback loop generating huge amounts of customer data with the activity of the platform, process the data with machine learning techniques, exploit network externalities, and produce in turn more activity and more data (with dynamic economies of scale since more data leads to better algorithms and prediction capacity). Financial services may complement and reinforce the platform business model with payment services as a first step, and credit provision may follow. Big Tech may enter into financial services because of the complementarities of those services with the customer data they possess and the products they offer as they have done in China, where Big Tech has penetrated more deeply than in Western economies. For example, mobile payments in China are controlled by the duopoly of Alipay and Tenpay.

16. Contrary to small fintechs, Big Tech platforms enjoy scale and scope economies, large installed customer bases, established reputation and brands, deep pockets from retained earnings and ample access to talent and capital markets. They can therefore compete head-to-head with incumbent banks as multi-sided platforms (market-places) and also offer their own products focusing on the most profitable banking activities.

Platform delivery of financial products may well become the dominant distribution model. Consumers served by a specific platform—for example, Android or iOS—are likely to use a platform for many of their financial service's needs. This means that the platform will be the gatekeeper of a fraction of customers and that banks will have to be present in the different competing platforms/ecosystems. In this world, through technology and their extended customer bases, Big Techs could monopolize the interface with customers controlling loan origination and the distribution business with the incumbents taking deposits and investing in products distributed by Big Techs.¹¹ Some banks have perceived this threat and offer open platforms that incorporate products from other financial providers and/or have formed partnerships with Big Techs and fintechs. Indeed, savvy incumbent banks will not stay put and will evolve into the platform mode, keeping their balance sheet strength and funding advantage, resulting in a new oligopolistic market structure for financial service provision. Note that incumbents have other strengths that they can leverage, such as customer trust to keep their data secure, and knowledge on how to deal with complex and intrusive regulation.

17. Banking could move then from the traditional oligopoly to a new oligopolistic form with a few dominant platforms, including both Big Techs and platform-transformed incumbents, controlling the access to a fragmented customer base. The long-run degree of competition intensity will depend then on the extent of interoperability and data ownership and portability for individuals between platforms. Technology may determine exogenous switching costs between platforms, and the actions of the platforms will determine the endogenous switching costs. The degree of competition will depend on the level of these frictions and on the influence of regulation.¹²

18. As long as efficiency advantages are the main drivers of the fintech entrants (Big Techs in particular), the financial sector can become more efficient and feature higher financial inclusion. Such efficiencies range from superior information and processing capabilities, screening technologies, and better response to customer needs to leaner operation technologies. The impact will be greater if, as a response to the new entrants, incumbents become more

8 See T. Foucault, M. Pagano and A. Röell, *Market Liquidity: Theory, Evidence, and Policy* (Oxford University Press, 2013), Chapter 1.

9 See B. Bain, *Stock Exchanges Hit by SEC Curb on Power to Raise Some Fees*, *Bloomberg*, 20 August 2020.

10 The optimal policy revolves around whether the wedge between the first best connectivity capacity that a regulator would set and the capacity a monopoly would set is large or small. If it is large, structural (entry) regulation is inferior to fee regulation and conversely if the wedge is small.

11 Another possibility is that an e-money provider monopolizes digital payments by preventing or making difficult the interoperability with other e-money providers. This is one of the reasons why central bank digital currency is being discussed. See T. Adrian and T. Mancini-Griffoli, *The Rise of Digital Money*, International Monetary Fund, *FinTech Notes* No. 2019/001 (2019).

12 See X. Vives, *Digital Disruption in Banking*, *The Annual Review of Financial Economics* 11 (2019): 243.

efficient by restructuring and adopting more advanced technologies. For this outcome to be realized, it is necessary, however, that vigorous competition is maintained; otherwise, the darker forces of abuse of dominance built on bandwagon effects of networks for exclusionary purposes and the exploitation of regulatory loopholes may prevail.

IV. Policy and antitrust

19. Traditionally, antitrust action has been perceived to lag market developments. In financial services, regulation has been bypassed systematically by innovation, and antitrust intervention has been subject to limitations due to the tradeoff between competition and financial stability.¹³ It must be pointed out that maintaining vigorous competition is only an intermediate objective insofar as it fosters social welfare. This is why there is a tradeoff between competition and stability.

20. Now, the development of information technology has accentuated the challenge. We have seen how progress in IT may exacerbate situations where competition is excessive from the social point of view, be it in the form of too low loan rates or in the form of an excessive proliferation of trading venues. Furthermore, new tradeoffs have emerged as privacy issues have come to the forefront. To the competition-stability tradeoff, we must add two more: the tension between efficiency/competition and privacy (since more disclosure of private data will increase competition but may impair privacy), and the tension between financial stability and privacy (since more disclosure of private data to the regulator may be good for stability but again at the cost of revealing private data).¹⁴ The latter tensions put consumer protection concerns at the forefront. Regulators must, for example, establish who owns and controls the data (here, the EU is ahead with the General Data Protection Regulation—GDPR) and ensure secure transactions on platforms. Among the tasks, regulators must consider that digital technology allows enhanced price discrimination and exploitation of possible behavioral biases of consumers and investors.

21. Open banking initiatives aim to foster competition by allowing (and making compulsory under the customer's request) data sharing among incumbent banks and entrants (third-party providers). The pioneer experience in the UK indicates that open banking has increased switching in retail banking.¹⁵ An important question is whether and if so, to what extent should the playing

field be tilted in favor of entrants to promote contestability. In the EU, there is some asymmetric treatment of incumbents and entrants since the former must abide by the Payment Services Directive (PSD2), mandating that customers be able to share their data with entrants if they so wish, while the latter must abide by the GDPR and facilitate data portability only in cases where it is technically feasible. However, the proposed Digital Markets Act (DMA) may balance the asymmetry by requiring dominant platforms (gatekeepers) to share information under interoperability rules. Regulation by activity may aim to level the playing field between incumbents and entrants, but financial stability depends on the soundness of entities, and therefore there are limits on leveling the field. That is, because of prudential concerns, not all the intermediaries may be on an equal footing in their supply of services. Again, the aim of fostering competition must come to terms with financial stability concerns.

22. Finally, there is the issue of the control of emerging monopolization tendencies inherent when network effects and the dynamic economies of scale of data accumulation are present. This latter aspect is attracting most attention of antitrust authorities and regulators. The European Commission (EC) has pioneered cases against some of the platforms and now there is a Big Tech backlash in all jurisdictions with proposals to restrict their activities (and even threatening with breakups) with the US, UK, EU, and China as leading examples. What is more, the perception seeming to be that current antitrust law may not be the right tool to control the market power of platforms and that *ex ante* regulation should play a major role. A major issue is that the business model of platforms involves typically not charging one side (say consumers, which implicitly pay for services with personal data), and therefore it is difficult to claim output reduction or price increases that hurt customers.

23. Mobile payments are an active antitrust area, as the *Apple Pay* cases in the EU and the US show. The EC opened a formal antitrust probe into Apple Pay in June 2020 (and competition regulators in the Netherlands launched their own investigation in December). The aim is “to assess whether Apple’s conduct in connection with *Apple Pay* violates EU competition rules. The investigation concerns Apple’s terms, conditions and other measures for integrating *Apple Pay* in merchant apps and websites on iPhones and iPads, Apple’s limitation of access to the Near Field Communication (NFC) functionality (‘tap and go’) on iPhones for payments in stores, and alleged refusals of access to *Apple Pay*.”¹⁶ An issue is that the Wallet app comes preinstalled and cannot be deleted, and Apple encourages its use by default. Such behavior could be challenged under the proposed digital regulations in the

¹³ See X. Vives, *Competition and Stability in Banking: The Role of Regulation and Competition Policy* (Princeton University Press, 2016).

¹⁴ See E. Carletti, S. Claessens, A. Fatás and X. Vives, *The Bank Business Model in the post-Covid-19 World*, *VoxEU CEPR* (2020).

¹⁵ From 4% switching business current account in 2016 for small businesses in the UK (pre-open banking) to about 10% by the end of 2020. See <https://www.openbanking.org.uk/wp-content/uploads/OBIE-SME-Research-Infographic.pdf>.

¹⁶ European Commission, press release IP/20/1075 of 16 June 2020, Antitrust: Commission opens investigation into Apple practices regarding Apple Pay, https://ec.europa.eu/commission/presscorner/detail/en/ip_20_1075.

EU due to affect gatekeeper online platforms, which state that gatekeepers should not promote their services above those of their rivals on the platforms they operate.¹⁷

24. In the US Epic Games, the maker of Fortnite, introduced changes to the game to bypass Apple's App Store payment system. Apple responded by blocking the game, and Epic filed a lawsuit in August 2020. A US federal judge ordered Apple in early September 2021 not to interfere with apps that wished to take payments outside of its store (Epic has already appealed the decision). Until then, Apple had forbidden apps from including links so that customers of the App Store could buy digital items elsewhere. The judge stated that "*anti-steering*" provisions of this sort "*hide critical information from consumers and illegally stifle consumer choice.*" The judge said that this conduct was anticompetitive, but that it had not been demonstrated that Apple was a monopolist violating antitrust laws.¹⁸ The judge did not concede to Epic Games allowing customers to bypass the App Store and download the games directly on mobile devices. Furthermore, the judge did not find Apple's commissions in breach of antitrust law (in fact, the judge required Epic to pay the commission on payments that had avoided the Apple system). Apple has been levying 15% to 30% commission on processed payments. In late August 2021, Apple had already made a concession to apps such as Netflix and Spotify (but not to the revenue-generating gaming apps) to let them include links to their own websites to bypass the fees of the App Store.¹⁹ In early September, Apple had also settled with the Fair Trade Commission of Japan to let apps providing digital content redirect users to payment methods outside the Apple system, and Apple will have to comply with a new law in South Korea opening up payment methods outside platforms' ecosystem.

25. Those cases indicate that international enforcement may lead the way to set standards for Big Tech whenever compliance in one jurisdiction (be it Japan, South Korea or the EU) only does not make sense. We also see that the tendency is to impose obligations and restrictions on dominant platforms so that they do not abuse their

position, but so far, the established idea that size is not an offense has not been overturned.

26. There are also calls to toughen merger control to avoid so-called killer acquisitions. The failed acquisition of Paid by Visa, abandoned in January 2021, provides a good example of the new state of alert and assertiveness by antitrust authorities. The DOJ alleged that the acquisition was designed to eliminate a competitive threat to Visa's monopoly in online debit payments.²⁰ Interestingly, the valuation of Plaid had tripled by April 2021 with respect to the price Visa had agreed to pay for the company.²¹

27. Antitrust tries to be more forward-looking, but this is obviously difficult and makes projections tentative. The proposed Digital Markets Act in the EU intends to ensure a higher degree of competition in the European digital markets by preventing the abuse of market power by large platforms and by fostering the entry of new players. However, the situations it envisions are backwards-looking and refer implicitly to past competition problems. The recent UK approach proposes to look at the business model of the dominant platforms and may be more promising.

28. The consideration of innovation prospects is crucial for antitrust authorities, but the task has never been easy. Dominant players may have no incentive to implement disruptive innovations since they would cannibalize their established business, and this is an argument for antitrust authorities to avoid those acquisitions of potential competitors that would threaten the business. However, the tendency to impose regulatory obligations on the platforms may also stifle innovation. It is very difficult for a regulator to anticipate where technological advancements will happen. However, we do know that insufficient competition will impair innovation, and there is a tool to increase competition among the ecosystems of different platforms: fostering interoperability and data portability with appropriate assignment of control rights on data.²² This lowers the switching costs among platforms, and it will be pro-competitive. It is worth noticing that IT progress may make easier such interoperability and data portability without hampering privacy, alleviating one potential tradeoff.

29. The antitrust fintech challenge is formidable. This is so because of the pace of technological change and the fact that innovation is what delivers value to consumers. Furthermore, the impact of IT technology on competition is subtle and requires a case-by-case analysis. Attention to the specific business model at play will be necessary. There are instances where IT progress will exacerbate competition beyond the social optimum,

¹⁷ The EC issued on April 2021 a related Statement of Objections to Apple on App Store rules for music streaming providers (https://ec.europa.eu/commission/presscorner/detail/en/SPEECH_21_2093) following a complaint by Spotify. Competition Commissioner Vestager stated that "*Our preliminary finding is that Apple is a gatekeeper to users of iPhones and iPads via the App Store. With Apple Music, Apple also competes with music streaming providers. By setting strict rules on the App store that disadvantage competing music streaming services, Apple deprives users of cheaper music streaming choices and distorts competition. This is done by charging high commission fees on each transaction in the App store for rivals and by forbidding them from informing their customers of alternative subscription options.*" The Commission points to the combination of two rules that Apple imposes in its agreements with music streaming app developers: (i) "*The mandatory use of Apple's proprietary in-app purchase system ('IAP') for the distribution of paid digital content. Apple charges app developers a 30% commission fee on all subscriptions bought through the mandatory IAP. The Commission's investigation showed that most streaming providers passed this fee on to end users by raising prices*" and (ii) "*Anti-steering provisions' which limit the ability of app developers to inform users of alternative purchasing possibilities outside of apps.*" Add: Available at https://ec.europa.eu/commission/presscorner/detail/en/IP_21_2061.

¹⁸ It is argued also that the relevant market is not the App Store but "digital mobile gaming transactions" where there is competition with the Android operating system.

¹⁹ See P. McGee, Apple's grip on App Store loosened by US judge, and Judge opens Apple's App Store to competition, *Financial Times*, 10 September 2021.

²⁰ Plaid provides an API, that fintechs (e.g., Venmo) use to link to customer bank accounts.

²¹ See M. Kruppa, Plaid valued at \$13.4bn following collapse of sale to Visa, *Financial Times*, 7 April 2021.

²² However, the efficient assignment of control rights with a Coasian approach is not easy because of the presence of market power and information externalities (see Vives, Digital Disruption in Banking).

and the antitrust authority will have to coordinate with prudential or financial market authorities. There are instances where the business model will lead to monopolization tendencies that will have to be checked. On most occasions, antitrust and regulatory authorities will have to see whether the competition concerns are aligned or not with privacy concerns, and consider potential interactions with behavioral biases together with consumer

protection authorities. Indeed, the antitrust authority will need to coordinate with financial and consumer protection regulators as well as the nascent data regulators. However, most likely, the main task of the antitrust authority in dealing with fintech is to push for better regulation and provide the conditions for competition to be effective, otherwise innovation may be the victim. ■

Platform competition and the regulation of stock exchange fees

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I. Introduction

1. Stock exchanges are textbook examples of multi-sided platforms.¹ Their core business is to provide a venue, infrastructure, and rules that enable buyers and sellers of stock to transact with each other. In that sense, a stock exchange is a platform that brings together buyers and sellers of stock. To be successful, stock exchanges must attract sufficient numbers of market makers, who provide liquidity by quoting prices and stand ready to buy or sell, as well as traders pursuing other strategies, who often take the liquidity market makers provide by “hitting” their offers to buy (bids) or sell (offers or asks). These two “sides” of the platform are linked by externalities as liquidity takers benefit if more liquidity providers are active on an exchange, and vice versa. Therefore, competitive constraints on stock exchanges cannot be understood without considering the alternatives available to both liquidity takers and liquidity providers and the linkages between these groups.

2. Stock exchanges are also multi-sided platforms in another sense: they are platforms for users of trading, data, and co-location services. Stock exchanges have undergone a technological transformation over the past several decades. Trading floors have largely been replaced by exchange servers, and the services that brokers and specialists (designated liquidity providers) provided are now largely carried out by algorithms.² Order entry, message acknowledgement, matching algorithms, trade confirmations, and market data systems all operate at

time scales measured in fractions of a second.³ Exchanges offer co-location services that enable market participants to place their servers in close physical proximity to exchanges’ matching engines.⁴ Stock exchanges also offer a variety of proprietary data products that provide insight into trading and order activity. These trading, data, and co-location services are used by overlapping sets of firms (some use all three, some only a subset) and the value of these services is interconnected. Data from a stock exchange, for example, are more valuable when the exchange carries more trading activity.

3. Stock exchanges offer these services in a highly regulated environment where the U.S. Securities and Exchange Commission (SEC) reviews and can “set aside” new product offerings and fee changes. In particular, the fees charged by stock exchanges for their trading, data, and co-location services must be “reasonable.”⁵ Reasonableness can be assessed through a “market-based test” that focuses on competitive constraints faced by stock exchanges when setting fees.⁶

4. Stock exchanges, as multi-sided platforms, face competitive constraints that can operate through various business lines. For instance, data fees should not be analyzed in isolation without accounting for the competitive dynamics in trading services. That is, competition is properly understood as being between platforms (i.e., stock exchanges) that balance the needs of consumers of trading services, consumers of data, and consumers of co-location services. Competition between platforms can

* The views expressed in this article are solely those of the authors, who are responsible for the content, and do not necessarily represent the views of Boston University or Cornerstone Research.

1 D. S. Evans and R. Schmalensee (2011), The Industrial Organization of Markets with Two-Sided Platforms, in *Platform Economics: Essays on Multi-Sided Businesses*, D. S. Evans, eds., Competition Policy International, p. 5.

2 See, e.g., A. Menkveld (2016) The Economics of High-Frequency Trading: Taking Stock, *Annual Review of Financial Economics*, 8: 1–24, p. 2.

3 U.S. Securities and Exchange Commission, Staff Report on Algorithmic Trading in U.S. Capital Markets, August 5, 2020, p. 13.

4 Ibid.

5 Exchange Act Section 11A(c)(1)(C) & (D), 15 U.S.C. § 78k-1(c)(1)(C) & (D).

6 Opinion of the Commission in the Matter of the Application of Securities Industry and Financial Markets Association for Review of Action Taken by NYSE Arca, Inc., and Nasdaq Stock Market LLC, U.S. Securities and Exchange Commission, Release No. 84432, October 16, 2018, p. 22.

be consistent with prices that deviate from marginal costs on one or more sides of the market, and often does not lead to prices that reflect costs in the way that non-platform models of competition predict. But such platform competition can discipline stock exchanges' overall pricing and profitability.

5. Evaluating the reasonableness of stock exchanges' data fees has been an area for the practical application of platform economics at least as far back as 2006. However, despite years of regulatory submissions and review, as well as related litigation, a benchmark for analysis of platform competition accepted by the SEC has not been set.

6. In this article, we give an overview of these issues, beginning with a discussion of stock exchanges' business models and the role of trading, data, and co-location services in Section II. We explain the linkages between trading, data, and co-location services that make stock exchange platforms for these services in Section III. Section IV provides a summary of the history and current status of the use of platform economics to evaluate the reasonableness of stock exchange fees.

II. Overview of stock exchange business model

7. Stock exchanges facilitate the trading of securities by centralizing transactions and setting rules for how traders can offer to buy and sell stock and how they may reach an agreement to trade with each other. Companies that list their shares on a stock exchange signal that they meet the exchange's SEC-approved listing standards, including market capitalization thresholds and rules for corporate governance.⁷

8. Trading activity generates copious amounts of data on transaction prices and orders, which stock exchanges sell. Some market participants want high-speed access to market data and order execution services. One way in which stock exchanges fulfill this demand is by renting "rack space" in close physical proximity to the exchange's matching engine and offering on-premise data feed connections.

9. Trading of listed U.S. equities today takes place on sixteen registered exchanges, alternative trading systems ("ATSs"), dark pools, and broker-dealer internalizers.⁸ The major exchanges, where most trading takes place, are

owned by NYSE, NASDAQ, and Cboe.⁹ Four smaller exchanges, collectively accounting for about 6.5% of trading volume as of September 2021,¹⁰ are recent entrants, with three having started operations in late 2020.¹¹ During the same period, over 40% of U.S. equity trading volume was off-exchange on ATS, dark pools, and broker-dealer internalizers; as of February 2020, there were more than 50 dark pools registered with the SEC.¹²

1. Trading services

10. Exchanges charge a fee for each executed transaction.¹³ Transaction fees vary according to a variety of factors, with the role of the trading firm being most prominent. The predominant transaction pricing structure on stock exchanges is a "maker-taker" fee model, where the exchange pays the firm that provided liquidity while charging the firm that took it.¹⁴

11. As of 2019, seven of thirteen registered stock exchanges then in operation used a maker-taker transaction fee model.¹⁵ Other exchanges (four of thirteen) differentiated their offerings by using a "taker-maker" model where liquidity takers are compensated and liquidity providers pay transaction fees. A third group charges a flat fee to both liquidity providers and takers. These fee structures reflect stock exchanges' efforts to attract both liquidity providers (in particular, market makers) and takers.¹⁶ Fees for accessing liquidity (i.e., those charged to liquidity takers) are capped at 0.3 cents per share, however, limiting stock exchanges' options.¹⁷

7 U.S. Securities and Exchange Commission, Listing Standards, <https://www.sec.gov/small-business/goingpublic/listingstandards>, accessed September 27, 2021.

8 ATS and dark pools are trading venues that are not regulated as registered stock exchanges. Dark pools do not provide their best-priced orders for inclusion in the consolidated quotation data that is widely distributed to the public. Broker-dealer internalizers execute trades internally, without routing orders to other trading venues in most cases. Broker-dealer internalizers execute most equity trades made by retail investors. See U.S. Securities and Exchange Commission, Concept Release on Equity Market Structure, Release No. 34-61358, January 14, 2010, pp. 18–21.

9 The New York Stock Exchange or "NYSE" is a subsidiary of Intercontinental Exchange (ICE) and operates NYSE, NYSE Arca, NYSE National, NYSE American, and NYSE Chicago; NASDAQ operates NASDAQ, NASDAQ BX (formerly the Boston Stock Exchange), and NASDAQ PSX (formerly the Philadelphia Stock Exchange); Cboe operates BYX Equities and BZX Equities (formerly the BATS exchanges) as well as EDGA Equities and EDGX Equities (formerly Direct Edge).

10 Cboe, U.S. Equities Market Volume Summary, https://www.cboe.com/us/equities/market_statistics (accessed September 21, 2021). Shares reported are month-to-date as of access date.

11 The Members Exchange (MEMX), MIAx Pearl, and the Long-Term Stock Exchange (LTSE) started operations in the past year. See J. Kellner, Celebrating Year One with Record 4% Market Share, MEMX, September 21, 2021, <https://memx.com/celebrating-year-one-with-record-4-market-share>; MIAx PEARL Equities Completes First Day of Live Trading, MIAx Press Release, September 29, 2020, https://www.miaoptions.com/sites/default/files/press_release-files/MIAx_Press_Release_09292020.pdf; The Long-Term Stock Exchange Goes Live, LTSE Press Release, September 9, 2020, <https://ltse.com/articles/the-long-term-stock-exchange-goes-live>. The Investors Exchange (IEX) started operations as an ATS in 2013 and launched as a stock exchange in 2016. See IEX, Our Story, <https://iextrading.com/about> (accessed September 27, 2021).

12 U.S. Securities and Exchange Commission, Alternative Trading Systems with Form ATS on File with the SEC as of February 29, 2020, https://www.sec.gov/files/node/add/data_distribution/atlist022920.pdf.

13 Stock exchanges also charge membership fees. Only member firms can trade on an exchange.

14 U.S. Securities and Exchange Commission, Transaction Fee Pilot, Final Rule, February 20, 2019, p. 5.

15 Ibid.

16 Stock exchanges may also provide other incentives to attract market makers. For example, NYSE's Designated Market Maker program offers rebates for certain market-making activities while imposing requirements designed to improve liquidity and reduce volatility. See New York Stock Exchange, Designated Market Makers, https://www.nyse.com/publicdocs/nyse/markets/nyse/designated_market_makers.pdf (accessed September 27, 2021).

17 Per Rule 610(c) of Regulation NMS. See U.S. Securities and Exchange Commission, Concept Release on Equity Market Structure, Release No. 34-61358, January 14, 2010, p. 17; U.S. Securities and Exchange Commission, Transaction Fee Pilot, Final Rule, February 20, 2019, p. 217.

12. Academics find that the current market structure and regulatory regime generate intense competition for order flow that has driven transaction fees down.¹⁸ For example, the average net transaction fee per share traded on NYSE was \$0.000592 in 2016.¹⁹ Some scholars find even lower net transaction fees.²⁰

2. Market data

13. Market data are often divided into two categories: core (securities information processor (SIP) or consolidated feed) data and non-core (or proprietary) data.²¹ Consolidated feed data are assembled by the SIPs, which aggregate data from all exchanges to provide (i) last sale reports, including the price and amount of the latest sale of a security and the exchange where it took place; and (ii) best bid and best offer (also known as “top of book”) price quote information across all exchanges.²² Among other uses, brokers access the consolidated feed in order to comply with Rule 603(c) of Regulation NMS, known as the Vendor Display Rule, which requires broker-dealers—when a trading or order-routing decision can be implemented—to provide a consolidated display of market data when they are providing equity quotation or trade information to customers.²³

14. Proprietary data products are offered by individual exchanges and contain data about only that exchange, not about the market as a whole. Exchanges offer a variety of proprietary data products, some of which provide only top-of-book data while others provide varying levels of

depth-of-book information.²⁴ Different market participants may use proprietary data for a number of purposes, including (i) to inform trading decisions by enhancing their understanding of liquidity and likely price movements; (ii) to inform order routing decisions about where to send an order or by enabling them to assess the likelihood of execution at various venues; and (iii) to enable the operation of trading platforms (dark pools or ATS).

15. Stock exchanges make different choices regarding if and how much to charge customers for market data.²⁵ It is common for new stock exchanges or exchanges focused on increasing their share of trading to offer their data free of charge. Established stock exchanges typically charge for their data, as the NASDAQ exchanges, the Cboe exchanges, and most NYSE Group Exchanges do.²⁶ Stock exchanges may choose to transition from a no-fee model to one where they charge for their data as NYSE Arca did in 2009 and the BATS exchanges (BZX and BYX) did in 2013.²⁷ Pricing strategies such as these are natural outcomes in platform markets, where building a base of users on all “sides” of the market is crucial for a platform’s viability.

3. Co-location

16. Co-location is a service that offers “rack space” to market participants that enables them to place their servers in close proximity to a stock exchange’s matching engine.²⁸ Co-location can be thought of as a modern manifestation of the desire by some market participants to be close to the center of trading, which was historically offered through exchange membership allowing access to the trading pits.²⁹

18 E. Budish, R. S. Lee and J. J. Shim (2019), Will the Market Fix the Market? A Theory of Stock Exchange Competition and Innovation, *National Bureau of Economic Research Working Paper* 25855. See also J.-E. Colliard and T. Foucault (2012), Trading Fees and Efficiency in Limit Order Markets, *The Review of Financial Studies* 25(11): 3389–3421, p. 3390 (“competition among markets has triggered a sharp decline in trading fees.”).

19 T. Hendershott, M. Rysman and R. Schwabe (2021), Stock Exchanges as Platforms for Data and Trading, Manuscript, fn. 35.

20 E. Budish, R. S. Lee and J. J. Shim (2019), Will the Market Fix the Market? A Theory of Stock Exchange Competition and Innovation, Manuscript, p. 37 (referring to trading fees as “perfectly competitive”); J.-E. Colliard and T. Foucault (2012), Trading Fees and Efficiency in Limit Order Markets, *The Review of Financial Studies* 25(11): 3389–3421, p. 3390 (“competition among markets has triggered a sharp decline in trading fees”).

21 C. Jones (2018), Understanding the Market for U.S. Equity Market Data, Manuscript, p. 7.

22 Ibid. Consolidated feed data are being updated to include additional information, including a limited amount of depth of book information. The reforms also foresee multiple consolidators distributing these data. See U.S. Securities and Exchange Commission, SEC Adopts Rules to Modernize Key Market Infrastructure Responsible for Collecting, Consolidating, and Disseminating Equity Market Data, December 9, 2020, <https://www.sec.gov/news/press-release/2020-311>.

23 FINRA, Providing Stock Quotations to Customers, Regulatory Notice 15-52, December 2015, p. 1, <https://www.finra.org/sites/default/files/Regulatory-Notice-15-52.pdf> (“FINRA is issuing this Notice to remind firms and registered representatives of their obligations under Rule 603(c) of Regulation NMS (Vendor Display Rule) when providing quotation information to customers. The SEC staff recently made clear its view that if a registered representative provides a quotation to a customer that can be used to assess the current market or the quality of trade execution, reliance on non-consolidated market information as the source of that quotation would not be consistent with the Vendor Display Rule. In light of the SEC staff’s statements, firms should review whether they are in compliance with the requirement in the Vendor Display Rule that broker-dealers provide a consolidated display of market data when they are providing quotation information to customers.”).

24 Proprietary data products can be classified as: (1) Best bid or offer (BBO): Shows the best prices available at the exchange, and the quantities available at these prices. This provides the same data as the SIP, but only for the single exchange in question. (2) Order book: Shows quantities available at each price level at and beyond the top of the book. Order book products often include information on odd lot orders. (3) Full order-by-order depth of book: Shows order book information along with detailed information about the nature of each adjustment to the order book. That is, it provides data on each trade, new order, order cancellation, or order modification, providing additional detail about movements in the order book. (4) Order imbalance: Information about aggregate quantities and prices submitted during auction periods. (5) Trade data: Reports all transactions executed on the exchange. This information is also reported in the SIP.

25 The median data bill in December 2018 for firms that both traded and purchased proprietary data from NYSE was \$5,580. See T. Hendershott, M. Rysman and R. Schwabe (2021), Stock Exchanges as Platforms for Data and Trading, Manuscript, p. 10.

26 NYSE, Market Data Pricing, January 1, 2018, p. 19, https://www.nyse.com/publicdocs/nyse/data/NYSE_Market_Data_Pricing.pdf; Price List – U.S. Equities, NasdaqTrader.com, <https://www.nasdaqtrader.com/Trader.aspx?id=DPUSdata#tv>; Cboe, Cboe Data Services, Market Data Product Price List, July 25, 2018, http://cdn.batstrading.com/resources/membership/US_Market_Data_Product_Price_List.pdf.

27 Self-Regulatory Organizations; Notice of Filing and Immediate Effectiveness of Proposed Rule Change by NYSE Arca, Inc. Relating to Fees for NYSE Arca Depth-of-Book Data, Release No. 34-63291, November 9, 2010, pp. 7–8; J. McCrank, BATS Exchanges to Start Charging for Market Data, *Reuters*, April 18, 2013; Self-Regulatory Organizations; BATS Exchange, Inc.; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change to Impose Fees for Market Data, Release No. 34-69936, July 3, 2013, pp. 1–25.

28 U.S. Securities and Exchange Commission, Concept Release on Equity Market Structure, Release No. 34-61358, January 14, 2010, p. 53.

29 GETCO, Letter to the SEC Commenting on Release No. 61358, April 27, 2010, pp. 3, 10 (“Co-location is a new manifestation of a centuries old principle, as certain traders have always sought proximity to the center of trading, whether it is an exchange’s trading floor or an exchange’s data center.”).

17. Some trading firms engage in trading strategies that are speed-sensitive. These include market-making (providing liquidity) and certain arbitrage strategies.³⁰ Collectively, such traders are thought to account for over half of the trading volume.³¹ The desire for co-location services is shared by such traders as well as buy-side brokers.³²

18. Stock exchanges are therefore multi-product firms in that they offer trading, data, and co-location services. How we understand the competitive forces that discipline prices for each of these products depends crucially on whether stock exchanges are platforms for these services, with the demand for each being a function of developments in the others.

III. Stock exchanges as platforms for trading, data, and co-location services

19. The economics of platforms focuses on firms that act as intermediaries between two or more sets of agents.³³ Common examples of platform firms are internet search engines, which bring together consumers and content providers (often advertisers), and payment card networks, which facilitate interactions between consumers and retailers. Media companies, such as newspapers, are platforms for interactions between consumers and advertisers even though consumers may primarily use the newspaper for information other than advertising.

20. Typically, a feature of a platform firm is that the choices of one set of agents affect the payoffs to another set of agents. For instance, when many merchants sign up to accept a payment card, the card becomes more valuable to a consumer. To the extent this benefit is not perfectly captured by prices, this feature leads to an externality that runs from one side of the platform to the other, and often in both directions.

21. The “sides” of a market served by platforms need not be distinct sets of agents, such as merchants and cardholders or advertisers and newspaper readers. For example, sports card conventions are two-sided platforms that bring together enthusiasts to buy and sell sports cards.³⁴ Some participants pay an entrance fee, whereas some,

the dealers, pay a table fee, which allows them to set up a table at the convention. We can think of the convention as a platform that brings together these participants. While we might think of dealers as the “sellers” and regular entrants as the “buyers,” in practice both sets of agents buy, sell, and trade cards with each other. Some participants may substitute between being a dealer and non-dealer based on the convention fees.

22. Understanding competition in platform markets requires an analysis of how prices to all sides of the market are interrelated.³⁵ For example, even if competition between platforms is intense and overall profits are low, it could be that prices are relatively high on one side of the market and low or even negative on the other side.³⁶ In such a situation, analyzing competition on one side of the market in isolation can lead to incorrect conclusions.

23. For instance, sports card conventions typically charge much higher fees to dealers than to regular participants.³⁷ An analyst focusing only on table fees at sports card conventions might conclude that convention organizers have market power, whereas an analyst considering both sides might conclude that the convention organizers do not have market power. Policy decisions based on overly narrow analyses can have unintended consequences; for example, regulating table fees could lead to reduced benefits such as free parking or “door prizes” (i.e., gifts for attendees) for non-dealer enthusiasts.

24. Stock exchanges are classic examples of platform firms. In fact, there are multiple senses in which exchanges are platforms: Some studies reference stock exchanges’ role in bringing together buyers and sellers of shares³⁸ or providers and takers of liquidity.³⁹ Stock exchanges can

30 U.S. Securities and Exchange Commission, Concept Release on Equity Market Structure, Release No. 34-61358, January 14, 2010, pp. 46–57.

31 M. O’Hara (2015), High Frequency Market Microstructure, *Journal of Financial Economics* 116(2): 257–270, p. 258.

32 GETCO, Letter to the SEC Commenting on Release No. 61358, April 27, 2010, pp. 9–10 (“Most brokers, including institutional and retail, are either co-located themselves or access the market through a member firm that is co-located.”).

33 The discussion in this section draws from M. Rysman (2009), The Economics of Two-Sided Markets, *Journal of Economic Perspectives* 23(3): 125–143.

34 G. Z. Jin and M. Rysman (2015), Platform Pricing at Sports Card Conventions, *The Journal of Industrial Economics* 63(4): 704–735.

35 D. S. Evans (2011), Antitrust Economics of Two-Sided Markets, in *Platform Economics: Essays on Multi-Sided Businesses*, D. S. Evans, eds., Competition Policy International.

36 *Ibid.*, p. 116.

37 G. Z. Jin and M. Rysman (2015), Platform Pricing at Sports Card Conventions, *The Journal of Industrial Economics* 63(4): 704–735.

38 Although market participants may be willing to switch between being a buyer and seller of a given security as the price changes, within any trade, an exchange is matching a buyer to a seller. In general, sellers prefer markets with many buyers and buyers prefer markets with many sellers, which generates a platform dynamic. See D. S. Evans and R. Schmalensee (2011), The Industrial Organization of Markets with Two-Sided Platforms, in *Platform Economics: Essays on Multi-Sided Businesses*, D. S. Evans, eds., Competition Policy International, p. 5 (“Exchanges have two groups of customers, who can generally be considered ‘buyers’ and ‘sellers.’ The exchange helps buyers and sellers search for feasible contracts—that is where the buyer and seller could enter into a mutually advantageous trade.”).

39 U.S. stock exchanges are organized as central limit order books, in which traders post offers to buy or sell at a particular price. Traders that post non-marketable limit orders (i.e., buy/sell limit orders with a limit price below/above current interest on the opposite side) are referred to as providers of liquidity. Traders that take those offers by submitting market orders (to buy/sell at the best available price) or marketable limit orders (where the buy/sell limit price is at or above/below current interest on the other side) are takers of liquidity. A provider of liquidity may be either a buyer or seller of the stock (and similarly for liquidity takers). See D. S. Evans and R. Schmalensee (2011), The Industrial Organization of Markets with Two-Sided Platforms, in *Platform Economics: Essays on Multi-Sided Businesses*, D. S. Evans, eds., Competition Policy International, p. 5 (“In organized exchanges such as the New York Stock Exchange, it is often more useful to think of the two sides as liquidity providers—specialists or market-makers who quote prices to both buyers and sellers and thus bring liquidity to the market—and liquidity consumers—ordinary customers who accept liquidity providers’ offers.”); T. Foucault, O. Kadan, and E. Kandel (2013), Liquidity Cycles and Make/Take Fees in Electronic Markets, *Journal of Finance* 68(1): 299–341, p. 300 (“Our model is designed to analyze the determinants of this rate when market monitoring is costly. It features a trading platform with two types of traders: ‘market makers,’ who post quotes, and ‘market takers,’ who hit quotes.”).

succeed only if they attract both buyers and sellers, and both providers and takers of liquidity.

25. Stock exchanges are also platforms for trading and data. Traders' choices about where to trade affect the value of these data products. Trading activity and order book depth enhance the informational content of the data; the best bid and offer change more frequently, and there are more orders beyond the top of the book. The effect of trading activity on the value of data is one set of linkages between "sides" of the market that make stock exchange platforms for data and trading.

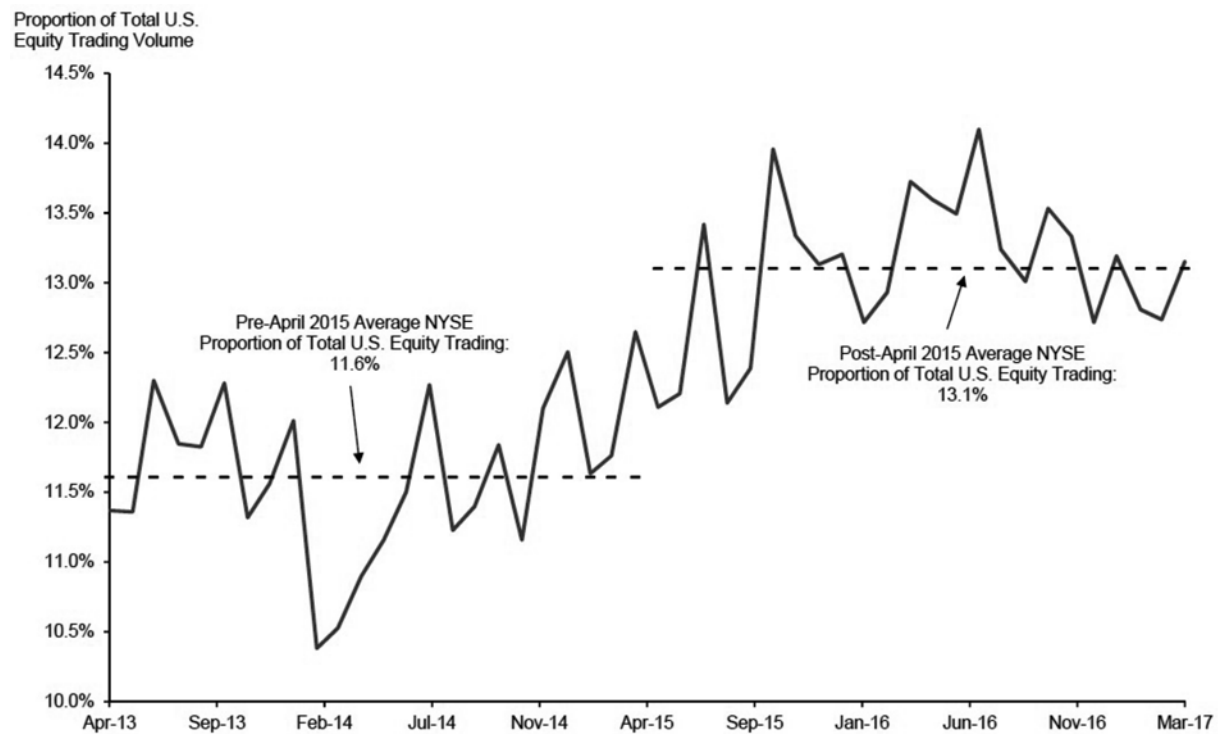
26. Hendershott, Rysman, and Schwabe (2021) show that externalities also run in the reverse direction, from data purchases to trading. As traders buy more market data from a particular exchange, the overall volume of trading on that exchange can increase. This is because traders use market data to make order routing decisions

(among other uses). That is, the information in market data is an input to traders' decisions about where to send their orders.

27. Market data can enter these decisions in a variety of ways, but a common theme is that market data reduces uncertainty about the price, likelihood, or timing of execution for an order. By reducing the uncertainties around order execution on an exchange, market data makes trading on that exchange more attractive to traders.

28. Hendershott, Rysman, and Schwabe (2021) test for these linkages between data purchases and trading activity by studying the 2015 introduction of a new data product reporting detailed information on the evolution of the order book on the NYSE—the NYSE Integrated Feed. We find that NYSE's share of overall trading increased following the introduction of the NYSE Integrated Feed.

Figure. Proportion of U.S. Equities Trading Volume on NYSE before and after Launch of NYSE Integrated Feed, April 2013 to March 2017



Source: Hendershott, Rysman, and Schwabe (2021)

Note: The first firms to subscribe to the NYSE Integrated Feed and trade on NYSE started doing so in April 2015.

29. Hendershott, Rysman, and Schwabe (2021) also find that, controlling for other factors, both firms that purchased the new NYSE Integrated Feed data product and those that did not increase their trading on NYSE. The latter result is particularly interesting from the perspective of platform economics because it suggests that firms that did not purchase the NYSE Integrated Feed product nonetheless benefited from the increased trading activity on NYSE by firms that did purchase it.

This result also suggests that the liquidity externalities (benefits of having more trading by NYSE Integrated Feed purchasers) outweigh any negative externalities that could come from having a group of better-informed firms trading on NYSE; were the opposite true, one would expect order flow from non-subscribers to decrease.

30. This research builds on other studies of the effects of information on trading activity that also support the view

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that data and trading are linked through externalities.⁴⁰ A particularly clear empirical case study documenting the relationship between the availability of market data and trading activity is the decision by Island ECN (an ATS) in September 2002 to “go dark” by ceasing to display its limit order book for three exchange-traded funds (ETFs).⁴¹ Hendershott and Jones (2005) document that trading volume on the Island ECN dropped following its “going dark,” but that a considerable amount of trading activity continued to take place on Island.

31. It seems likely that externalities also link co-location to trading and data.⁴² Market participants that use co-location services pursue a variety of trading strategies, including market making—proprietary trading firms that engage in market making have largely replaced other types of liquidity providers such as exchange specialists.⁴³ Thus, to the extent that co-location gives market makers increased confidence to post bids and offers, an exchange is likely to see increased liquidity and tighter bid-ask spreads, which will attract other traders. This is one source of externalities linking co-location and trading.

32. Co-location is likely also linked to data through externalities. One set of linkages would run through trading: if uptake of co-location services encourages trading, this would make the exchange’s data more valuable (as it reflects more trading activity and order posting). Similarly, if uptake of data products leads to increased trading activity, this would tend to make an investment in co-location more attractive. Co-location and data are also directly linked. Co-located market participants, who are often otherwise heavily invested in hardware and software that optimize their trading activities in distinct ways from being co-located and purchasing proprietary data, can make trading decisions based on market data more quickly. The ability to make better use of market data, in turn, makes investing in co-location more attractive.

33. That trading, data, and co-location are linked through externalities means that competitive conditions in all three must be considered jointly in order to understand competition among stock exchanges. This has been recognized by the SEC in its regulatory review of stock exchange fees, as we explain in the following section.

IV. Platform competition and the regulation of stock exchange fees

34. Every change in a stock exchange’s pricing schedule, including fees for trading, data, or co-location, must be filed publicly with the SEC, and the SEC has the authority to reject those fees. Per the Securities Exchange Act of 1934, the SEC is responsible for ensuring that all exchange fees are “*fair and reasonable*” and “*not unreasonably discriminatory*.”⁴⁴ Fee changes can be contested by market participants under these provisions.

35. There are several ways to show that fees are “reasonable.” The SEC and the courts have acknowledged that there can be a “market-based” test of reasonableness considering “*whether the exchange was subject to significant competitive forces in setting the terms of its [fees]*.”⁴⁵ Platform considerations, that is, the analysis of competition for related services, can be part of such an assessment.

36. The application of platform competition to the analysis of stock exchange fees can be traced to the long-running dispute over NYSE Arca’s 2006 proposed rule change to increase fees on its ArcaBook data product.⁴⁶ The SEC approved the proposed fee increase in 2008 on the basis that competitive forces, including competition for order flow, constrained NYSE Arca’s prices for data products.⁴⁷ The SEC, in that order, noted that “[a]ttracting order flow and distributing market data, however, are in fact two sides of the same coin and cannot be separated. (...) An exchange’s ability to attract order flow determines whether it has market data to distribute, while the exchange’s distribution of market data significantly affects its ability to attract order flow.”⁴⁸

37. An appeal to the U.S. Court of Appeals for the D.C. Circuit by two industry associations, NetCoalition and the Securities Industry and Financial Markets Association (SIFMA), led to a reversal of the SEC’s order, with the D.C. Circuit holding that it is not that “*wide dissemination of market data cannot increase order flow but rather that it is not necessarily so*” and arguing

40 Boehmer et al. (2005) study the introduction of NYSE’s OpenBook product in January 2002 and find that it had positive effects on trading activity on NYSE’s electronic limit order book, shifting trading from NYSE’s floor brokers. See E. Boehmer, G. Saar, and L. Yu (2005), *Lifting the Veil: An Analysis of Pre-Trade Transparency at the NYSE*, *Journal of Finance* 60(2): 783–815.

41 T. Hendershott and C. M. Jones (2005), *Island Goes Dark: Transparency, Fragmentation, and Regulation*, *Review of Financial Studies* 18(3): 743–793.

42 We are not aware of research studying these linkages.

43 U.S. Securities and Exchange Commission, *Concept Release on Equity Market Structure*, Release No. 34-61358, January 14, 2010, pp. 48–53.

44 Exchange Act Section 11A(c)(1)(C) & (D), 15 U.S.C. § 78k-1(c)(1)(C) & (D). See also Rule 603(a) of Regulation NMS, 17 C.F.R. § 242.603(a) (same).

45 Court Opinion in *NetCoalition v. Securities and Exchange Commission*, U.S. Court of Appeals for the District of Columbia Circuit, Case No. 09-1042 (“*NetCoalition I*”), August 6, 2010, pp. 11–12.

46 Filing of Proposed Rule Change Relating to Approval of Market Data Fees for NYSE Arca Data, Release No. 34-53952, 71 FR 33496, June 9, 2006.

47 Self-Regulatory Organizations; NYSE Arca, Inc.; Order Setting Aside Action by Delegated Authority and Approving Proposed Rule Change Relating to NYSE Arca Data, Release No. 34-59039, December 2, 2008; 73 FR 74770, December 9, 2008.

48 *Ibid.*, at 74783.

that more information was needed.⁴⁹ Thus, the courts have left the door open for a platform competition-based approach to evaluating the reasonableness of fees.

38. The potential role of platform theory in evaluating the reasonableness of proposed fees is reflected in the 2019 SEC staff guidance, which explains that platform theory “provides a potential pathway to demonstrating a competitive environment.”⁵⁰ The staff guidance endorses the analysis of the “aggregate return across multiple product lines, such as transactions, market data, connectivity, and access,” provided that the applicant can provide “evidence demonstrating that [platform] theory applies in fact to the fee at issue.”⁵¹

39. NYSE National’s application to introduce fees for the NYSE Integrated Feed data product, which it had previously offered free of charge, was a recent test case for the role of platform theory in the SEC’s rule approval process. NYSE National advanced several arguments for the reasonableness of its proposed fee, including a prominent case that competition for order flow would discipline market data fees as stock exchanges engage in platform competition.⁵² Although the SEC ultimately approved the proposed fee, it did not credit NYSE’s arguments of platform competition, saying that

“[t]he Commission reaches that conclusion, however, without agreeing with or otherwise relying on the arguments made by NYSE National that exchanges function as platforms between consumers of market data and consumers of trading services.”⁵³ While the order also states that “platform-based competition could potentially provide a basis for demonstrating significant competitive forces with regard to pricing market data,” the SEC found other grounds for approving this application and asserted that more information would be required to credit platform competition arguments.

40. In conclusion, the economics of platform competition has become an important part of the SEC’s framework for evaluating stock exchange fees. This is the result of an early recognition of the interaction between competition for order flow and data sales, followed by years of litigation. Yet, despite the prominent role of platform competition in these proceedings, the SEC has yet to accept platform competition as the primary basis for a fee change approval and, consequently, the contours of an analysis of platform competition that would satisfy the SEC are not yet well-defined. To the best of our knowledge, platform competition arguments have not yet been advanced in relation to applications for changes to co-location fees. ■

⁴⁹ *NetCoalition I*, August 6, 2010, p. 26.

⁵⁰ U.S. Securities and Exchange Commission, Staff Guidance on SRO Rule Filings Relating to Fees, May 21, 2019.

⁵¹ *Ibid.*

⁵² Notice of Filing and Immediate Effectiveness of Proposed Rule Change to Establish Fees for the NYSE National Integrated Feed, Release No. 34-87797, File no. SR-NYSENAT-2019-31, December 18, 2019, pp. 18–25.

⁵³ U.S. Securities and Exchange Commission, Order Approving a Proposed Rule Change to Establish Fees for the NYSE National Integrated Feed, Release No. 34-90217, October 16, 2020.

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