No. 23-60167

IN THE

UNITED STATES COURT OF APPEALS

FOR THE FIFTH CIRCUIT

Illumina, Inc. and GRAIL, Inc.,

Petitioners,

v.

Federal Trade Commission,

Respondent.

Petition for Review of

An Order of the Federal Trade Commission

Brief of Economists Brianna L. Alderman and Roger D. Blair as Amici Curiae in Support of Petitioners

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CERTIFICATE OF INTERESTED PERSONS

Illumina, Inc. & GRAIL, Inc. v. Federal Trade Commission
No. 23-60167

Per Fifth Circuit Rule 28.2.1, the undersigned counsel certifies that the following listed persons and entities have an interest in the outcome of this case, in addition to those listed on the certificate of interest persons submitted by Petitioners. These representations are made so the judges of this Court may evaluate possible disqualification or recusal.

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INTEREST OF AMICI CURIAE[1]

Amici are economists who research and publish in the field of antitrust economics. They have a particular interest in ensuring that the Court understands why the key economic premises underlying the Federal Trade Commission's decision in this matter are misguided. In particular, this case involves the competitive effects of vertical integration, a topic on which *amici* recently published. *See* Brianna L. Alderman & Roger D. Blair, *Preserving Potential Entry is Not the Holy Grail in Vertical Merger Enforcement*, 36(2) Antitrust 42 (2022).

Brianna L. Alderman is a Thomas H. Ashford Fellow in the Department of Economics at Harvard University. She holds degrees in Economics, Mathematics, and Statistics from the University of Florida. Her fields of interest include industrial organization, labor economics, and antitrust economics.

Roger D. Blair is Professor and former Chair of the Department of Economics at the University of Florida and affiliate faculty at the Levin College of Law at the University of Florida. His research focuses on antitrust economics and law and economics.

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[1] Pursuant to Federal Rule of Appellate Procedure 29, undersigned counsel for amici curiae certify that no party's counsel authored this amicus brief in whole or in part; no party or party's counsel contributed money that was intended to fund preparing or submitting this amicus brief; and no person or entity, other than amici or their counsel, contributed money intended to fund the preparation or submission of this amicus brief. All parties have consented to the filing of this amicus brief.

INTRODUCTION AND SUMMARY OF ARGUMENT

The Federal Trade Commission's ("FTC") decision to prohibit Illumina's reacquisition of GRAIL is based on fundamentally flawed economic reasoning and assumptions. Far from benefiting consumers and market participants, the immediate and predictable consequences of the FTC's decision are higher prices for consumers, reduced consumption, and a reduction in both consumer welfare and social (or total) welfare. In other words, Illumina and GRAIL are more valuable—including to society—as a vertically integrated unit, and overall economic welfare would be advanced, not hindered, by allowing Illumina's reacquisition of GRAIL.

This brief explains three fundamental economic principles that were ignored or misapplied by the FTC in reaching its erroneous decision. ***First***, the brief explains why the vertical integration of Illumina and GRAIL eliminates double marginalization, which is an unadulterated and certain benefit to both consumers and market participants. Moreover, since the price of a Galleri test will be lower, more tests will be performed, more cancer will be detected at earlier stages, and more lives will be saved. ***Second***, the brief demonstrates why the FTC's concerns regarding market foreclosure are misplaced. ***Third***, the brief explains that the FTC's decision willingly sacrifices immediate and certain economic gains for the highly speculative prospect of theoretical future economic benefits.

The FTC's decision will result in higher prices and more cancer deaths, without any guaranteed future benefit, in contravention of the economic principles that properly guide antitrust decisions.

BACKGROUND

Illumina supplies next generation DNA sequencing ("NGS") platforms and the requisite consumables that are essential for multi-cancer early detection ("MCED") tests. According to the FTC, Illumina faces no viable competitors; that is, Illumina is a monopolist. (Opinion of the Commission (Mar. 31, 2023) ("Opinion") at 7.) In 2016, Illumina formed a subsidiary, GRAIL, which began research and development efforts to create an MCED test. (*Id*. at 10.) Concerned that it would be unable to provide GRAIL with the necessary capital, Illumina sold off about 88 percent of its ownership in GRAIL in 2017. (*Id*.)

GRAIL thereafter received funding from other sources and developed Galleri, which is an MCED test that can detect 50 types of cancer while individuals are asymptomatic. (*Id*. at 13.) Galleri is being sold while still awaiting full FDA approval. (*Id*. at 14.) It is the only MCED test available to patients. (*Id*. at 21.)

Illumina then reacquired GRAIL in its entirety in 2021. (*Id*. at 11.) In voting to approve the reacquisition, the Illumina Board determined that the transaction would accelerate the adoption of Galleri, result in cost saving efficiencies, generate R&D efficiencies, and save lives. (*See* Respondents' Post-Trial Brief at 182-89

(Apr. 29, 2022); Petitioners' Opening Brief (Dkt. 96) at 58-59.) The FTC challenged that reacquisition as violative of antitrust law. (Opinion at 19.)

Initially, the case was heard by an FTC Administrative Law Judge ("ALJ"), who ruled in favor of Illumina. The ALJ held that the FTC had failed to prove that the reacquisition was likely to have anticompetitive consequences. (*Id.* at 21-22.) Specifically, the ALJ found that "Grail and other cancer screening companies are presently competing to develop the best performing cancer screening test"—*i.e.*, that there is "*existing* competition"; that "currently, and for the near future, Illumina is the only viable supplier of NGS platforms that meet the requirements of MCED test developers"; that "GRAIL's Galleri is the only MCED test currently on the market"; and that "commercial competition" is unlikely to "commence in the 'near future'" because other developers are "five to seven years away from launching any sort of MCED test," and those tests that are in development "are focused on one or a few cancers," whereas Galleri "has been demonstrated to detect seven or more cancers." (*Id.* at 21.)

The ALJ concluded that Illumina theoretically could "adversely impact MCED test developer customers through a variety of means, including by withholding or delaying supply of existing products, withholding or delaying supply of new or improved products, and misusing confidential information," but found that

Illumina's ability to do so pre-existed its reacquisition of GRAIL and was "not a function of" the reacquisition. (*Id.*)

The ALJ further found that the FTC "had failed to prove that the relative profits and benefits to Illumina of engaging in a foreclosure strategy outweighed the costs, and therefore failed to prove that such a strategy was likely." (*Id.*)

Finally, the ALJ found that various contractual commitments that Illumina had made to its U.S. oncology customers—including "a 12-year supply agreement under which Illumina would commit not to increase the price of sequencing instruments or consumables; would commit to decrease the cost of sequencing on Illumina's highest-throughput instrument . . . ; and would commit to provide access to the same sequencing products at the same pricing provided to GRAIL"—"would constrain Illumina from" taking actions that would "raise rivals' costs or otherwise foreclose GRAIL's rivals." (*Id*. at 20-21.)

Because the ALJ found that the FTC "had failed to prove that harm to GRAIL's rivals was likely during the 12-year term . . . ," the ALJ concluded that the absence of harm to GRAIL's competitors in the "reasonably near future" undermined claims of "likely harm to existing innovation and future commercial competition," such that the FTC could not demonstrate "that a resulting substantial lessening of competition is probable or imminent." (*Id*. at 22.) Accordingly, the ALJ dismissed the Complaint. (*Id.*)

The full Commission reversed the ALJ's decision and held that Illumina's reacquisition of GRAIL violated Section 7 of the Clayton Act and Section 5 of the FTC Act. (*Id*. at 93.)

The FTC's Opinion is based on its supposition that a vertically integrated Illumina–GRAIL would foreclose alleged future entrants in the provision of MCED tests from competing with Galleri. For the reasons that follow, the FTC's Opinion was based on mistaken economic premises, and should be reversed.

ARGUMENT

I. An Illumina–GRAIL Integration Will Generate Cost Efficiencies and Life-Saving Benefits.

According to the FTC, Illumina faces no viable competitors in the supply of NGS platforms and requisite "consumables," *i.e.,* materials used in the sequencing workflow, making it a monopolist. (Opinion at 7-9.) Also according to the FTC, GRAIL's Galleri is the only MCED test currently on the market, rendering GRAIL—at least for now—a monopolist as well. (*Id*. at 21.)

The relationship between Illumina and GRAIL is vertical: Illumina's NGS platform and consumables are inputs in GRAIL's business of MCED testing. Since the FTC considers both Illumina and GRAIL monopolists, the market structure before the acquisition was one of successive monopoly.

It is well known and acknowledged by the FTC that successive monopoly leads to double marginalization. *See, e.g.*, U.S. Dep't of Justice & FTC, *Vertical*

Merger Guidelines (June 30, 2020), https://www.ftc.gov/system/files/documents/reports/us-department-justice-federal-trade-commission-vertical-merger-guidelines/vertical_merger_guidelines_6-30-20.pdf. Double marginalization occurs when a markup is imposed upon a cost that already has been marked up. Here, for example, double marginalization occurs when Illumina's markup over its cost becomes part of GRAIL's cost, upon which GRAIL will also impose a markup. Critically, vertical integration *eliminates* double marginalization. This is a well-established economic principle and one acknowledged by the FTC. *See, e.g.*, *id.*; Phillip E. Areeda & Herbert Hovenkamp, Antitrust Law: An Analysis of Antitrust Principles and Their Application 758 (2022); Joseph J. Spengler, 58 J. of Pol. Econ. 347 (1950).

The economic results of eliminating double marginalization are known to be unambiguously positive, immediate, and certain. Namely, the price paid by consumers falls, the quantity consumed rises, the vertically integrated firm's profits increase, and both consumer welfare and social (or total) welfare increase. Thus, following vertical integration of Illumina and GRAIL, the price of Galleri would fall, the number of life-saving tests would increase, and consumers would be better off. As a result of the increase in the number of Galleri tests sold, more cancer can be detected in the early stages, before it is life-threatening. This can ultimately save many more lives.

At the same time, the profit earned by the vertically-integrated Illumina–GRAIL will exceed the combined profits of Illumina and of GRAIL prior to the vertical integration. In other words, vertical integration would yield all winners and no losers.

These economic results are uncontroversial. Moreover, they should materialize immediately since they flow from profit maximizing behavior. Finally, these benefits are certain, *i.e.*, not probabilistic. By rejecting Illumina's reacquisition of GRAIL, the FTC has sacrificed these certain benefits for prospective benefits that may never materialize.

II. The FTC's Opinion Rests on a Misconception of the Risk of Market Foreclosure.

The FTC's decision to require Illumina to divest GRAIL is also based on a flawed assumption regarding Illumina's motivation to engage in market foreclosure following its acquisition of GRAIL. Market foreclosure occurs when a firm has both the incentive and ability to prevent an actual or potential rival from competing to sell its products to customers, and proceeds to do so. The FTC argues that post-merger, Illumina will undermine its rivals in the MCED test division of its business. But the FTC fails to recognize that as a monopolist in the provision of NGS platforms and consumables, Illumina can extract all the economic profit through its pricing of its *NGS*, and thus has neither the need nor the incentive to engage in market foreclosure so as to undermine participants in the MCED market. Accordingly, market foreclosure is not a reasonably probable effect of Illumina's reacquisition of GRAIL.

As the FTC observed, Section 7 of the Clayton Acts forbid mergers "'the effect of which may be substantially to lessen competition, or to tend to create a monopoly.'" (Opinion at 23 (quoting 15 U.S.C. § 18).) Citing *Brown Shoe Co. v. United States*, 370 U.S. 294, 362 (1962), the FTC further observed that it need only prove a "reasonable likelihood" of the ill effects of a merger. (*Id*. at 23.) And citing *United States v. General Dynamics Corp.*, 415 U.S. 486, 505-06 (1974), the FTC identified the ultimate issue as whether anticompetitive effects are "reasonably probable in the future." (*Id*. at 23.) A conclusion that an outcome is reasonably probable requires more than determining that an outcome is a theoretical possibility. The FTC argues that Illumina stands to earn far more profit on the sale of its Galleri tests than on the sales of its NGS platforms and consumables. (*Id*. at 45, 49-52.) This assertion, however, is incorrect. Once Illumina is vertically integrated, it can report its profit in either division. We expand on this point below.

In the context of Illumina's reacquisition of GRAIL, one can posit—as the FTC does (*Id*. at 44-45, 48)—an assortment of potential, would-be disruptive acts by Illumina that would lead to this result. But which, if any, of the possible reactions the FTC enumerated is reasonably likely or probable? From an economic perspective, *none* of them are. After merging with GRAIL, the newly merged firm will strive to maximize its profit. Foreclosing rival suppliers of MCED tests is not likely to occur simply because, according to the FTC, Illumina could theoretically do so. A conclusion that market foreclosure is reasonably probable must be consistent with profit maximization by Illumina. Since, according to the FTC's claims, all providers of MCED tests supposedly must rely on Illumina NGS platforms and consumables, market foreclosure means turning away profitable business. As the FTC tells it, Illumina would be essentially shrinking its own market, which is not reasonably probable.

The FTC claims that "Illumina is the only viable supplier of the critical NGS inputs on which MCED developers depend" (*Id*. at 40), meaning it claims there are no reasonable substitutes for Illumina's NGS platform in that there is no other "short-read NGS platform[] . . . that [is as] highly accurate with high throughput at a reasonable cost" (*Id*. at 36). Accordingly, taking those claims at face value, Illumina's incentive is to *expand*, rather than contract, the MCED market that relies on its NGS platform.

Currently, Illumina has two divisions: the DNA sequencing division and the MCED test division. These divisions are vertically related. The DNA sequencing division provides an essential input for the MCED test division. The managerial problem for Illumina is to provide the proper incentives to the division manager so that overall profit for Illumina is maximized.

Both divisions cannot be separate profit centers as a matter of economics. If the managers of each division attempted to maximize their division's profit, the effect would be a successive monopoly structure within Illumina. The economic result would be double marginalization. Illumina's profit would *not* be maximized.

Illumina can eliminate this double marginalization by providing the division managers with the correct incentives. To maximize profit, Illumina can instruct the DNA sequencing manager to maximize the profit of its division and instruct the MCED test division manager to sell its output at marginal cost. In doing so, the market structure is one of upstream monopoly and downstream competition. If these instructions are followed, there will be no internal successive monopoly and *firm*—rather than *division*—profit will be maximized. The performance of each manager must be evaluated on successfully carrying out their respective responsibilities. In particular, the manager of the downstream division cannot be penalized for not earning profit, as that manager is not supposed to show a profit. *See* Jack Hirshleifer, *On the Economics of Transfer Pricing*, 29 The Journal of Business 172 (1956) (addressing the transfer pricing problem of a divisionalized firm).

If, as the FTC claims, there are new entrants in the future at the downstream stage, Illumina would have no incentive to abuse them. The demand for Illumina DNA sequencing would either expand or remain the same. In either event, Illumina can extract all the monopoly profits upstream. Market foreclosure would make no sense as Illumina earns all the profit in the upstream division.

III. The FTC's Rejection of Illumina's Reacquisition of GRAIL Will Yield Higher Prices and More Cancer Deaths, Without Any Guarantee of Future Benefit.

If the FTC's decision denying Illumina's reacquisition of GRAIL is allowed to stand, the market structure will be one of successive monopoly unless and until a GRAIL rival enters the market, which may take five to seven years. There will be double marginalization, which means higher prices for the only MCED test available to patients, fewer tests used, and more cancer deaths that would have been preventable through early diagnosis.

If an entrant materializes, several outcomes are possible:

First, Grail and the new entrant may collude either tacitly or overtly in the MCED test market. In this event, the outcome is precisely the same as successive monopoly because GRAIL and the entrant are cooperating rather than competing. Thus, we suffer the consequences of double marginalization without any benefit.

Second, GRAIL and the entrant may compete by setting the quantity that they will supply. This is known as a Cournot duopoly. The result will be an improvement over successive monopoly, but there are two things to keep in mind. One, the improvement will not occur until there is entry—in the meantime, we suffer the full double marginalization. Two, Cournot duopoly is inferior to vertical integration and the latter eliminates double marginalization.

Third, GRAIL and the entrant may compete by setting the price at which they will supply the MCED tests. This market structure is known as Bertrand duopoly. In this event, price will eventually reach the level that a vertically integrated Illumina-GRAIL would charge. Again, there are two points to consider. One, this improvement over double marginalization does not occur until there is entry. Two, the result is not an improvement over vertical integration.[2]

At best, then, denying the reacquisition yields no gains relative to allowing the reacquisition to proceed. And at worst, it yields results *inferior* to vertical integration. The FTC's rejection thus at best results in no overall economic gain and quite likely will lead to even worse economic outcomes.

The reason that results would most likely be inferior follows from the established economic principles of vertical integration: allowing Illumina's reacquisition of GRAIL would remove double marginalization, thereby yielding certain benefits. The FTC presumably believes that by denying reacquisition, it is preserving some probabilistic benefit that would be realized—if ever—at some point in the future. Thus, instead of realizing the benefits of eliminating double

[2] For a more complete account of the economic analysis of these results, see Brianna L. Alderman & Roger D. Blair, *Preserving Potential Entry is Not the Holy Grail in Vertical Merger Enforcement*, 36(2) Antitrust 42 (2022).

marginalization immediately, the FTC has chosen a path that incurs the adverse economic consequences of double marginalization for what appears to be a prediction of distant future benefits.

Those predictions, however, are fundamentally speculative in two respects. To start, there is little, if any, evidence that existing rivals will develop an MCED test comparable to GRAIL's Galleri, which tests for 50 different types of cancer, in the foreseeable future. The FTC simply does not know whether any MCED test comparable to Galleri will ever materialize, when such competition is apt to materialize, or if it will actually improve or save lives. And the FTC does not know whether or on what basis any entrants will compete with GRAIL. Accordingly, if the Illumina–GRAIL merger is forbidden and if, as is likely, no viable competition for GRAIL emerges (at least not in the short to medium term), then the FTC will have reinforced a market structure of successive monopoly without any consequent gains.

Moreover, the FTC's concern for dampening the incentives for potential entry seems to rest on the claim that vertical integration will lead to market foreclosure. But if there are new entrants at the MCED test stage, this will increase the demand for Illumina's DNA sequencing. Accommodating the new entrants will increase Illumina's profit. Thus, it would be economically irrational to foreclose the new entrants.

Ultimately, the FTC's decision in this case amounts to a choice to prioritize speculative future benefits over known efficiencies in saving costs and lives. That misguided decision is contrary to the fundamentals of economics and should not stand.

CONCLUSION

The Court should reverse the FTC's decision.

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

I hereby certify that this brief contains 3,255 words and has been prepared in a proportionally spaced typeface using Microsoft Word in 14-point Times New Roman font, and so complies with the typeface requirements and length limits of Federal Rules of Appellate Procedure 27, 29, and 32(a)(5)-(7) and the corresponding local rules.

Dated: June 12, 2023

/s/ Adam S. Gershenson
Adam S. Gershenson

CERTIFICATE OF SERVICE

I hereby certify that on June 12, 2023, I electronically filed the foregoing document using the Court's CM/ECF system. Because all parties in the case are CM/ECF users, service will be accomplished through the CM/ECF system.

Dated: June 12, 2023

/s/ Adam S. Gershenson
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