What's Next in *Apple Inc. v. Pepper*? The Indirect-Purchaser Rule and the Economics of Pass-Through

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I. Introduction

On May 13, 2019, the Supreme Court issued a narrow 5-4 decision in *Apple Inc. v. Pepper*. The decision, reviewing a motion to dismiss, was narrow in both the vote margin and the scope of the opinion. Writing for the majority, Justice Brett Kavanaugh, joined by the four Democrat-appointed justices, held that iPhone owners who purchased apps from the Apple App Store were direct purchasers and thus have standing under *Illinois Brick Co. v. Illinois* (1977) to sue Apple for alleged monopolization under Section 2 of the Sherman Act. In his dissent, Justice Neil Gorsuch concluded that the app developers were the direct purchasers of distribution services provided by Apple, and that, under *Illinois Brick* and Section 4 of the Clayton Act, recovery of damages by the iPhone owners was necessarily based upon a pass-on theory and therefore not allowed.

iPhone users purchase apps via Apple's App Store. The suit began in 2011 when four iPhone owners sued Apple, alleging that Apple unlawfully monopolized "the iPhone apps aftermarket."[1] The plaintiffs allege that Apple locks iPhone owners into paying higher prices via the App Store. Apple does not generally create apps. Instead,

[1] Apple Inc. v. Pepper, 139 S. Ct. 1514, 1519 (2019).

the company relies upon third-party app developers who contract with Apple to distribute their apps to iPhone users. The app developers set the retail prices of their apps. Apple receives a 30 percent commission on all app sales and requires that the retail sales price end in $0.99. The plaintiffs allege that this 30 percent commission is "pure profit" for Apple, and that app prices would be substantially lower in a competitive environment but for Apple's conduct.[2] Apple moved to dismiss the complaint, contending that iPhone owners were indirect purchasers and thus barred from the claim by *Illinois Brick*.

The district court agreed with Apple, and granted its motion to dismiss, holding that the iPhone owners were indirect purchasers and thus were not proper plaintiffs in this antitrust case.[3] The Ninth Circuit reversed, holding that the iPhone owner-plaintiffs were direct purchasers under *Illinois Brick* because they purchased the apps directly from Apple via the App Store.[4] The Ninth Circuit construed *Illinois Brick* as barring only a party "two or more steps removed from the consumer in a vertical distribution chain."[5] Because the Ninth Circuit characterized the transaction between iPhone owners and the App Store as the direct purchase of apps from Apple, rather than from the app developers, it held that *Illinois Brick* did not bar their claim.

The Supreme Court granted certiorari and affirmed the Ninth Circuit's judgment. The majority and dissent each laid blame on their colleagues for elevating form over economic substance.[6] The majority and dissent each also claims its conclusion is the necessary result of a straightforward application of *Illinois Brick* and Section 4 of the Clayton Act.[7] The *Illinois Brick* rule bars indirect purchasers from federal antitrust claims.[8] From an economic perspective, the rule in *Illinois Brick* attempts to achieve optimal deterrence in several ways. First, given the Court's prior holding in *Hanover Shoe* barring

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[2] *Id.*

[3] See In re Apple iPhone Antitrust Litigation, 2013 WL 6253147 (N.D. Cal. 2013).

[4] See In re Apple iPhone Antitrust Litigation, 846 F.3d 313 (9th Cir. 2017).

[5] See Apple Inc., 139 S. Ct. at 1519–20.

[6] See *id.* at 1523, 1529.

[7] See *id.* at 1520, 1526.

[8] See Ill. Brick Co. v. Illinois, 431 U.S. 720, 728–29 (1977).

"passing-on" defenses in federal antitrust suits,[9] the *Illinois Brick* rule prevents multiple recoveries for the same harm, eliminating a potential source of overdeterrence. Second, under the assumption that the deterrent effect of a fine does not depend upon which party collects the fine, the rule eliminates the need to engage in pass-on analysis, thus reducing the costs and scope of litigation without affecting the deterring effect of antitrust actions. Third, the rule increases the probability a lawsuit will occur. Because *Hanover Shoe* does not allow a reduction in the amount of recoverable damages due to pass-on, the rule increases direct purchasers' incentive to sue by concentrating the set of plaintiffs that are able to recover antitrust damages.

In *Apple Inc. v. Pepper*, the Court did not overrule *Illinois Brick*. Rather, the Court held that iPhone owners have standing as direct purchasers to bring antitrust claims against Apple and remanded the case to the district court to adjudicate the merits. Scholars and practitioners have debated the implications of *Apple Inc. v. Pepper* moving forward, particularly for firms serving as platforms in multisided markets. That includes possible tension with the Supreme Court's recent decision in *Ohio v. American Express* and a potential revival of *Kodak*-style Section 2 "aftermarket" lock-in claims against platforms.[10] Those issues are largely theoretical and premature in the context of appellate review of a motion to dismiss, which necessarily presumes disputed facts, such as Apple's possession of monopoly power in an alleged "App Store" market.[11]

The more immediate concern, and one that motivates the debate about the wisdom of *Illinois Brick*'s prohibition against indirect-purchaser suits, is lower courts' ability to handle the complex economics required to apportion damages among multiple direct purchasers in the platform setting. On remand in *Apple Inc. v. Pepper*, for example, the district court will potentially be tasked with apportioning any proven overcharge between the iPhone owners and the

[9] Hanover Shoe, Inc. v. United Shoe Machinery Corp., 392 U.S. 481 (1968).

[10] See Ohio v. Am. Express Co., 138 S. Ct. 2274 (2018); Eastman Kodak Co. v. Image Technical Services, Inc., 504 U.S. 451 (1992); see also Bruce H. Kobayashi & Joshua D. Wright, Federalism, Substantive Preemption, and Limits on Antitrust: An Application to Patent Holdup, 5 J. Competition L. & Econ. 469 (2009).

[11] In considering a motion to dismiss made by a defendant, courts must accept all nonconclusory factual allegations as true and draw all reasonable inference in the plaintiffs' favor. See Ashcroft v. Iqbal, 556 U.S. 662, 678–79 (2009).

app developers. This calculation turns on the rate at which developers are able to pass-through to consumers. Our analysis focuses on the question faced by the district court on remand—that is, the economics of pass-through analysis in the specific context of Apple's 30 percent royalty rate on apps sold by app developers to iPhone users in the App Store. On remand, the court will have to answer this question to determine if the plaintiffs were injured by Apple's conduct, and, if so, by how much.

II. The Court's Decision

The Supreme Court granted certiorari to the Ninth Circuit's decision that iPhone users were direct purchasers from Apple. Justice Kavanaugh, writing for the 5-4 majority, held that iPhone owners are direct purchasers under *Illinois Brick*. Justice Gorsuch, writing for the dissent, argued that the iPhone owners are indirect purchasers, and that the majority erred in allowing a "pass-on" case to proceed. At the Court's invitation, the Department of Justice filed a brief as amicus curiae to present the views of the United States. The Department of Justice similarly argued that the plaintiffs are indirect purchasers under *Illinois Brick*, and that the complaint should be dismissed.[12] The disagreement between the justices focuses on their differing interpretations of *Illinois Brick* and how it should be applied.

A. Justice Kavanaugh's Majority Opinion

Justice Kavanaugh's brief opinion concludes that iPhone users are proper plaintiffs for this antitrust suit.[13] Apple contends that because app developers set the price of apps within the App Store, it is the app developers and not Apple who are in the most "direct" relationship with the customer.[14] The majority holds that this theory does not bar the plaintiff's claim.[15] Applying the reasoning in

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[12] See Brief for the United States as Amicus Curiae Supporting Petitioner, Apple Inc. v. Pepper, 139 S. Ct. 1514 (2019) (No. 17-204) [hereinafter U.S. Brief].

[13] Apple Inc., 139 S. Ct. at 1520.

[14] *Id.* at 1521–22.

[15] *Id.* at 1522 (stating that "Apple's effort to transform *Illinois Brick* from a direct-purchaser rule to a 'who sets the price' rule would draw an arbitrary and unprincipled line among retailers based on retailers' financial arrangements with their manufacturers or suppliers").

Illinois Brick, the majority believes that allowing direct users to sue is more effective than only allowing app developers to bring suit directly against Apple.[16]

In concluding that consumers are proper plaintiffs in this antitrust suit, and specifically that they are "direct consumers,"[17] the majority begins with Section 4 of the Clayton Act,[18] which states that "any person who shall be injured in his business or property by reason of anything forbidden in the antitrust laws may sue."[19] The majority holds this broad text covers consumers who purchase goods at supracompetitive prices from a monopolistic retailer.[20] Turning to the Court's teaching in *Illinois Brick*, Justice Kavanaugh emphasizes that consumers who are "two or more steps removed from the antitrust violator in a distribution chain may not sue."[21] For the majority, the key question is whether the App Store is an intermediary in the relationship between iPhone users and Apple. Because there is no such intermediary, the Court concludes iPhone users are direct purchasers.[22]

Apple argues that because it did not set the price, consumers do not have standing to sue the company.[23] The majority characterizes this theory as inconsistent with Section 4 of the Clayton Act and *Illinois Brick*. The Court holds that *Illinois Brick* "established a bright-line rule where direct purchasers such as the consumers here may sue antitrust violators from whom they purchased a good or service."[24] Importantly, the Court concludes that setting the price is irrelevant to the *Illinois Brick* analysis and that any ambiguity should be resolved in the direction of the language of the Clayton Act, which contemplates direct purchasers as proper plaintiffs.

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[16] *Id.* at 1524.

[17] *Id.* at 1520.

[18] *Id.*

[19] See 15 U.S.C. § 15(a).

[20] Apple Inc., 139 S. Ct. at 1520.

[21] *Id.* at 1521.

[22] *Id.*

[23] *Id.* at 1521–22.

[24] *Id.* at 1522.

The Court also rejects Apple's argument that iPhone users are not direct purchasers because Apple does not set the price as prioritizing form over economic substance.[25]

Justice Kavanaugh offers an example of two different methods of pricing—Apple's ad valorem royalty rate (a tax based on value) and a markup—which, he contends, generate identical economic outcomes for the manufacturer, retailer, and consumer.[26] Based upon this equivalence premise, Justice Kavanaugh rejects Apple's argument because it would allow an iPhone user standing to sue Apple in the markup-based scenario but not for its ad valorem royalty. To hold otherwise, Justice Kavanaugh contends, would elevate form over economic substance and allow Apple an arbitrage opportunity to alter its commission structure to avoid antitrust liability.[27]

Applying *Illinois Brick*'s pragmatic reasoning to the present case, the majority contends that iPhone users are not barred from bringing suit against Apple. *Illinois Brick* barred indirect-purchaser suits for three reasons: "(1) facilitating more effective enforcement of antitrust laws; (2) avoiding complicated damages calculations; and (3) eliminating duplicative damages against antitrust defendants."[28]

The majority argues that restricting standing to the app developers is not a more effective antitrust policy in terms of compensation and deterrence.[29] The majority reasons that doing so would place consumers at the mercy of monopolistic retailers simply because upstream suppliers could also sue,[30] and would undermine the purpose of *Illinois Brick* in prioritizing effective private antitrust enforcement.[31]

The majority concedes the complexity of the damages calculation required to apportion any damages between app developers and consumers, but rejects the view that *Illinois Brick* is "a get-out-of-court-free card for monopolistic retailers to play any time that a damages calculation might be complicated."[32] The majority points

[25] *Id.*

[26] *Id.*

[27] *Id.* at 1523.

[28] *Id.* at 1524.

[29] *Id.*

[30] *Id.*

[31] *Id.*

[32] *Id.*

out that complicated damages calculations are typical of antitrust cases—often requiring expert testimony to establish the price and output in the but-for world[33]—and can be just as complex in the traditional "markup" case where Apple conceded consumers have standing.[34]

Apple claims that allowing the plaintiffs to sue will result in "conflicting claims to a common fund."[35] Apple and the Department of Justice argue that this leads to the overdeterrence that *Illinois Brick* sought to prevent.[36] The majority disagrees, stating that this is not a case in which multiple parties at different levels of the supply chain are trying to recover the same passed-on overcharge.[37] If successful, the iPhone owners would be entitled to the full amount of the overcharge.[38] But Apple may still be subject to multiple suits, and *Illinois Brick* does not bar such an outcome if it is unrelated to a passing-on claim. Here, the downstream users would be able to sue Apple on a theory of harm related to the exercise of monopoly power, while the app developers could sue Apple over a monopsony theory.[39] The majority points out that the two suits would rely on different theories of harm and therefore would not result in multiple claims to a common fund as Apple suggests.[40]

B. Justice Gorsuch's Dissenting Opinion

Justice Gorsuch, joined by Chief Justice John Roberts and Justices Clarence Thomas and Samuel Alito, argues that the plaintiff's claim is barred, relying on a straightforward application of *Hanover Shoe* and *Illinois Brick*.[41] The plaintiffs here are indirect purchasers and cannot sue Apple.

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[33] *Id.*

[34] *Id.*

[35] *Id.*

[36] See *id.*; U.S. Brief at 27; see also Antitrust Modernization Comm'n, Report and Recommendations 271 (2007), https://digital.library.unt.edu/ark:/67531/metadc1228317/m2/1/high_res_d/amc_final_report.pdf [hereinafter AMC Report].

[37] Apple Inc., 139 S. Ct. at 1525.

[38] *Id.*

[39] *Id.*; Cameron v. Apple Inc., No. 5:19-cv-03074 (N.D. Cal. June 4, 2019).

[40] Apple Inc., 139 S. Ct. at 1525.

[41] See Ill. Brick Co., 431 U.S. 720; Hanover Shoe, 392 U.S. 481.

In *Hanover Shoe*, the plaintiff-retailer brought suit against a manufacturer for alleging a violation of the antitrust laws resulting in supracompetitive prices. The manufacturer relied upon the defense that the plaintiff had not actually been damaged because it passed on any overcharge to its own consumers.[42] The Supreme Court rejected this passing-on defense, applying Section 4 of the Clayton Act against the backdrop of common law.[43] The general tendency of the law is to not "go beyond the first step" when calculating damages.[44] In *Hanover Shoe*, the first step was simply the defendant's overcharge to the plaintiff.[45] Looking beyond the first overcharge and debating whether or not the plaintiff passed on any of the overcharge would risk problems that traditional principles of proximate causation sought to avoid. The Supreme Court held that passing-on defenses were barred in federal antitrust suits except in certain limited circumstances.[46]

Illinois Brick addressed the opposite side of the passing-on theory. As *Hanover Shoe* held that an antitrust defendant could not rely on a pass-on theory to avoid damages, *Illinois Brick* barred antitrust plaintiffs from relying on a pass-on theory to recover damages. The dissent contends that *Illinois Brick* simply applied the traditional principles of proximate causation in the antitrust context.

Applying both *Hanover Shoe* and *Illinois Brick*, the dissent reasons that any overcharge in this context falls on the app developers, so they are the ones directly injured by it.[47] Plaintiffs could only be injured if the developers chose to pass on the overcharge to them. Specifically looking at causation, a court would have to look into whether Apple's conduct damaged the plaintiffs at all by investigating if the developers passed on the high commission price and to what extent. The dissent asserts that *Illinois Brick* set a bright-line rule to prevent courts from dealing with these complicated theories.[48] If the iPhone owners can directly sue Apple for a possible overcharge,

[42] See Hanover Shoe, 392 U.S. at 487–88.

[43] *Id.* at 488–89.

[44] *Id.* at 490 n.8 (quoting S. Pacific Co. v. Darnell-Taenzer Lumber Co., 245 U.S. 531, 533 (1918)).

[45] *Id.* at 494.

[46] *Id.*

[47] Apple Inc., 139 S. Ct. at 1528.

[48] *Id.*

the courts will have to split up the overcharge by determining what percentage of the overcharge the developers passed on to the consumers and what percentage they did not. This could leave Apple at risk of duplicative damages awards. The dissent argues the Court now risks precisely the sort of overdeterrence that motivated its decision in *Illinois Brick* to bar indirect suits.[49]

The dissent also characterizes the majority view as elevating form over economic substance.[50] "Instead of focusing on the traditional proximate cause question where the alleged overcharge is first (and thus surely) felt, the Court's test turns on who happens to be in privity of contract with whom."[51] The dissent also points Justice Kavanaugh's strategic arbitrage concern back at the majority, arguing that the Court's ruling allows Apple to avoid liability by structuring their relationships with developers differently.[52] The dissent finds *Illinois Brick's* approach "intelligible, principled, administrable, and far more reasonable than the Court's artificial rule of contractual privity,"[53] which it contends is a "pointless and easily evaded imposter."[54]

III. The Economics of Pass-On in *Apple Inc. v. Pepper*

The traditional economic explanation for the direct-purchaser rule in *Illinois Brick* is that avoiding pass-on analysis in federal antitrust litigation improves the deterrent effect of the antitrust laws. Under economic theories of optimal deterrence, the focus is on imposing a remedy that forces the defendant to internalize the expected harm caused by his actions, with little concern over where the damages go. As a result, allowing costly procedures that would require pass-on analysis, such as indirect-purchaser suits or actions for contribution, are disfavored under such an approach.[55]

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[49] *Id.*

[50] *Id.* at 1529.

[51] *Id.*

[52] *Id.* at 1530.

[53] *Id.* at 1531.

[54] *Id.* at 1530.

[55] The same argument is also used to explain the inefficiency of allowing actions for contribution in antitrust cases. See Frank H. Easterbrook, William M. Landes & Richard A. Posner, Contribution among Antitrust Defendants: A Legal and Economic Analysis, 23 J.L. & Econ. 331 (1980).

The rules in *Illinois Brick* and *Hanover Shoe* are consistent with optimal deterrence in several ways. Allowing the direct purchasers to recover all of the damages from an antitrust case results in a cost-saving rule that allows both the avoidance of multiple recoveries and the costs of litigation associated with pass-on analysis without compromising the deterrent effect of the antitrust laws.[56] In particular, the rule eliminates the "massive evidence and complicated theories" needed to identify the fraction of the overcharge absorbed by retailers and distinguish it from the portion passed on to consumers in the form of higher prices.[57] And because the defendant is barred from using pass-on as a defense or to reduce damages, the amount of damages, and thus the deterrent effect of antitrust, will not be materially affected.

Under the economic theory of optimal deterrence, the rule in *Illinois Brick* coupled with the rule in *Hanover Shoe* has a second potential positive effect on antitrust deterrence through the distribution of awards. Eliminating indirect-purchaser claims concentrates recovery, allowing direct purchasers to appropriate all the returns to federal antitrust litigation. This increases a direct purchaser's incentives to sue, and thus plausibly increases the probability, all things being equal, that a lawsuit will be filed at all.[58] In addition, even if the direct-purchaser suit proceeds as a class action, allocating the federal right to sue to the direct purchasers likely will result in a less numerous class, arguably resulting in lower agency costs relative to an indirect-purchaser class.[59]

On the other hand, the economic case for the *Illinois Brick* rule seems to be weakened by several real-world factors. The first and most

[56] See William M. Landes & Richard A. Posner, Should Indirect Purchasers Have Standing to Sue under the Antitrust Laws? An Economic Analysis of the Rule of *Illinois Brick*, 46 U. Chi. L. Rev. 602 (1979).

[57] Ill. Brick, 431 U.S. at 732 (quoting Hanover Shoe, 392 U.S. at 493); see also AMC Report at 268.

[58] For an economic analysis of how the incentives on care and litigation are affected by altering the amount of total damages paid that is recovered by the plaintiff, see A. Mitchell Polinsky & Yeon-Koo Che, Decoupling Liability: Optimal Incentives for Care and Litigation, 22 RAND J. Econ. 562 (1991).

[59] For a discussion of how similar plaintiff concentrating provisions affected agency costs in securities cases, see Stephen Choi, Jill E. Fisch & Adam Pritchard, Do Institutions Matter? The Impact of the Lead Plaintiff Provision of the Private Securities Litigation Reform Act, 83 Wash. U. L.Q. 869 (2005).

important factor is the Court's decision in *California v. ARC America* that allowed states to pass laws that permit indirect-purchaser lawsuits.[60] Cases brought under these *Illinois Brick* repealer statutes would require pass-on analyses to avoid multiple recoveries. As a result, the existence of indirect-purchaser lawsuits under state law serves to undo the overall efficiencies of the *Illinois Brick/Hanover Shoe* rules discussed above.[61]

In addition, even setting aside the potential for indirect-purchaser cases under state law, there may be instances where the direct purchasers, even with a more concentrated interest in any recovery, may be less willing to sue (e.g., if they fear disrupting relations with their suppliers).[62] As a result, the effectiveness of the deterrent effect of the antitrust laws will in some cases be greater if indirect purchasers are allowed to sue. Thus, any increase in the costs of litigation that results from having to engage in pass-on analysis could, in theory, be justified by the deterrence benefits. Thus, the effect of the *Illinois Brick* rule on the probability and cost of a lawsuit may be more complex and varied than suggested above. Similarly, there may be some cases in which pass-on analysis would not be either complex or costly or require "massive evidence and complex theories."[63] Thus, the final evaluation of the rule's net effect on the probability and cost of litigation will depend upon both the feasibility of conducting pass-on analysis and the actual effects of pass-on in a given case.

To explore these issues, Part III. A provides a short examination of the feasibility of pass-through analysis and its use in antitrust analyses and litigation. Part III. B examines the effects of pass-through if *Apple Inc. v. Pepper* proceeds to litigation.

[60] California v. ARC Am. Corp., 490 U.S. 93 (1989). Thirty-four states and the District of Columbia have passed such statutes. See State *Illinois Brick* Repealer Laws Chart, WESTLAW Practical Law Checklist 8-521-6152 (accessed July 18, 2019); 14 H. Hovenkamp, Antitrust Law, ¶2412d (4th ed. 2019). See also Edward D. Cavanagh, *Illinois Brick*: A Look Back and a Look Ahead, 17 Loy. Consumer L. Rev. 1, 2 n.4 (2004) (listing state statutes).

[61] See John Cirace, Apportioning Damages between Direct and Indirect Purchasers in Consolidated Antitrust Suits: ARC America Unravels the *Illinois Brick* Rule, 35 Vill. L. Rev. 283 (1990).

[62] Ill. Brick, 431 U.S. at 746.

[63] Hanover Shoe, 392 U.S. at 493.

A. Pass-Through Analysis: Feasibility in General

There is a large and robust literature on the economics of pass-through.[64] As others have pointed out, the analysis of pass-through or pass-on in an antitrust case is a specific application of "incidence analysis," which examines how a tax or other cost is borne through various levels of the supply chain or the economy.[65] At a broad level, it has been shown that the rate at which an overcharge to a direct purchaser will be passed-on to indirect purchasers will depend on the nature of competition, though there is not a simple relationship between market power and the pass-on rate.[66] In particular, the theoretical determination of pass-through rates in differentiated products oligopoly models present complex issues, with the rates being a function of the type of interaction between firms, and relative elasticities of demand and supply, and demand curvature.

As a result, empirical assessments of pass-through can be challenging.[67] Causal empirical estimates of pass-through rates, largely based on natural experiments created by exchange-rate movements show that pass-through rates differ among industries.[68] In addition, pass-through rates or damages suffered by indirect purchasers can and have been estimated in antitrust cases.[69] However, estimating

[64] See E. Glen Weyl & Michal Fabinger, Pass-Through as an Economic Tool: Principles of Incidence under Imperfect Competition, 121 J. Pol. Econ. 528 (2013).

[65] *Id.*; see also Herbert J. Hovenkamp, *Apple v. Pepper*: Rationalizing Antitrust's Indirect Purchaser Rule (2019), Faculty Scholarship at Penn Law 2082, at n.71, https://scholarship.law.upenn.edu/faculty_scholarship/2082 (citing early tax cases and economic literature).

[66] See generally Joseph Farrell & Carl Shapiro, Recapture, Pass-Through, and Market Definition, 76 Antitrust L.J. 585 (2010); Luke M. Froeb, Steven T. Tschantz & Gregory J. Werden, Pass-Through Rates and the Price Effects of Mergers, 23 Int'l J. Indus. Org. 703 (2005); Paul L. Yde & Michael G. Vita, Merger Efficiencies: Reconsidering the "Passing-On" Requirement, 64 Antitrust L.J. 735 (1996*)*.

[67] Landes & Posner, *supra* note 56.

[68] See, e.g., Weyl & Fabinger, *supra* note 64; Nathan H. Miller, Matthew Osborne & Gloria Sheu, Pass Through in a Concentrated Industry: Empirical Evidence and Regulatory Implications, 48 RAND J. Econ. 69 (2017).

[69] See Hovenkamp, *supra* note 65, at 7–8 (discussing methods used to estimate damages in indirect-purchaser cases under state law). See also Daniel L. Rubinfeld, Quantitative Methods in Antitrust Law, 1 Issues in Competition L. & Pol'y, ABA Section of Antitrust Law 723, 727 (2008) (describing reduced-form methods of estimating pass-through damages).

pass-through in antitrust cases in the absence of exogenous varia-
tion or in the context of a predictive exercise may be a difficult task
that yields imprecise or erroneous estimates of pass-through.[70]

In addition to the potentially important use of pass-through anal-
ysis to apportion damages between direct and indirect purchasers,
pass-through analysis plays an important role in other areas of an-
titrust law. In particular, pass-through analysis can be an important
component of predictions of merger price effects. The complexities
of pass-through analysis have led some to suggest approaches that
avoid the inquiry by examining first-order conditions.[71] Other ap-
proaches to price prediction, such as merger simulation, rely on spe-
cific assumptions about the functional form of demand, including
the second-order properties of demand. Under these approaches, as-
sumptions about the functional form of demand will also greatly in-
fluence the predicted pass-through rate. However, other approaches
are more optimistic regarding the ability to measure and use esti-
mates of observed pass-through rates. These approaches would use
estimated or observed pass-through rates to infer the second-order
properties of demand, reducing the extent to which the predictions
rely on assumptions about specific functional forms of demand.[72]

B. Pass-Through Analysis in Apple Inc. v. Pepper

Even if pass-through analysis would be complex, costly, and spec-
ulative in the general case, in some special cases, including a poten-
tial *Pepper v. Apple Inc.* case on remand, the pass-through analysis
is neither complex nor speculative. In particular, Apple contracts
with app developers include a fixed $99 yearly fee plus a 30 percent
ad valorem royalty. Prices are set by the app developers, subject to
the condition that the prices are set in $1 increments ending in .99.[73]
Further, while app developers must incur the costs of developing

[70] Hovenkamp, *supra* note 65.

[71] See, e.g., Gregory J. Werden, A Robust Test for Consumer Welfare Enhancing
Mergers among Sellers of Differentiated Products, 44 J. Indus. Econ. 409 (1996).

[72] See Sonia Jaffe & E. Glen Weyl, The First-Order Approach to Merger Analysis, 5
Am. Econ. J.: Microeconomics 188 (2013); Nathan H. Miller, Marc Roemer, Conor Ryan
& Gloria Sheu, Pass-Through and the Prediction of Merger Price Effects, 64 J. Indus.
Econ. 683 (2017).

[73] The analysis in this article does not address this aspect of Apple's App Store pric-
ing, and it does not affect our conclusions.

and updating the software, these costs are largely fixed with respect to output. To the extent that the marginal costs of producing and distributing another copy of the app is zero, the theoretical calculation of the markup is far from complex—it is simple. And the effect of the Apple 30 percent ad valorem royalty on the optimal price set by the app developer is zero.

This result is likely not an accident, but rather an attempt by Apple to impose an efficient vertical pricing structure that eliminates the double margin that would be charged with a linear price. Indeed, the differential effect of ad valorem and unit royalties is a well-established and well-known result in the tax-incidence literature.[74] However, the majority fails to consider this, and even erroneously suggests that ad valorem royalties are economically equivalent to linear prices:[75]

> In a traditional markup pricing model, a hypothetical monopolistic retailer might pay $6 to the manufacturer and then sell the product for $10, keeping $4 for itself. In a commission pricing model, the retailer might pay nothing to the manufacturer, agree with the manufacturer that the retailer will sell the product for $10 and keep 40 percent of the sales price; and then sell the product for $10, send $6 back to the manufacturer, and keep $4. *In those two pricing scenarios, everything turns out to be economically the same for the manufacturer, retailer, and consumer.*[76] [emphasis added]

But, in equilibrium, things are not the same. To see this, consider Figure 1, which depicts the consumer demand for an app.[77] This consumer demand is labeled D_A and, as drawn, is assumed to be linear. With zero marginal cost and in the absence of any royalty or price collected by Apple, the app developer will set a price $P_A^* = 6$ that maximizes total revenue, TR_A^*. This price results in the app

[74] See Gerard Llobet & Jorge Padilla, The Optimal Scope of the Royalty Base in Patent Licensing, 59 J.L. & Econ. 45 (2016).
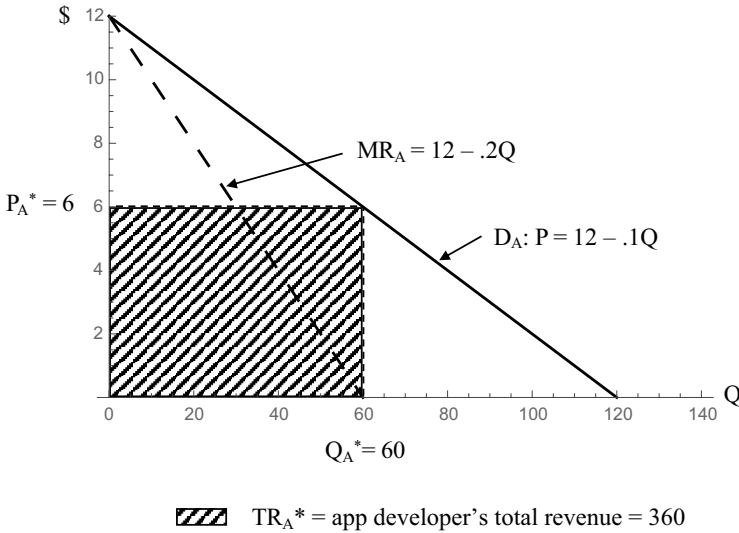
[75] Other analyses of the *Apple Inc. v. Pepper* decision also fail to consider the ad valorem nature of the App Store royalty. See, e.g., Hovenkamp, *supra* note 65. For a discussion of the importance of taking into account the differential effects of nonlinear pricing in antitrust analyses, see Dennis W. Carlton & Bryan Keating, Antitrust, Transactions Costs, and Merger Simulation, 58 J.L. & Econ. 269 (2015).

[76] Apple Inc., 139 S. Ct. at 1522.

[77] The example assumes linear demand for the app: D_A: $P = 12 − .1Q$.

Figure 1

Vertically integrated app developer/distributor (zero marginal cost)

$MR_A = 12 - .2Q$

$P_A{}^* = 6$

$D_A: P = 12 - .1Q$

$Q_A{}^* = 60$

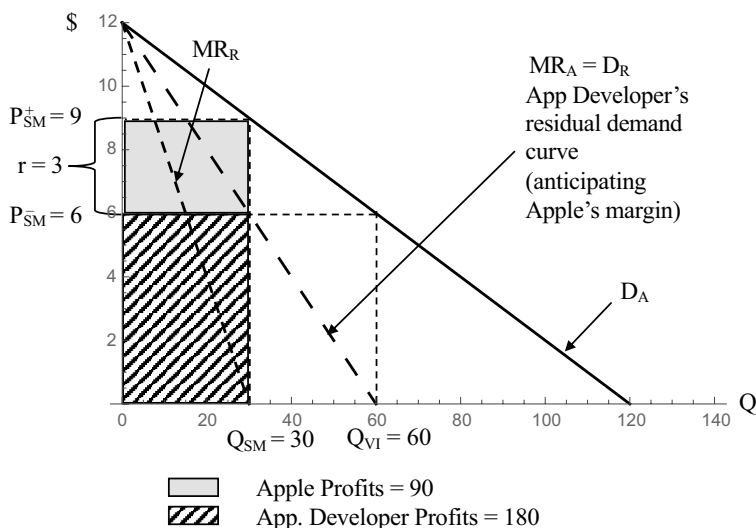TR$_A$* = app developer's total revenue = 360

developer lowering its price until the marginal revenue curve associated with D_A (MR_A) equals zero, which occurs when $Q_A{}^* = 60$ iPhone owners purchase the app.

Figure 2 illustrates the equilibrium price and quantity when the app developer and app distributor with market power set independent per-unit prices. The app distributor will properly view the net price set by the app developer P_{SM}^- as a marginal cost and will set the distribution markup r equal to the difference between the app demand curve D_A and the marginal revenue curve MR_A. In setting his optimal net price P_{SM}^-, the app developer will anticipate the optimal markup r that will be set by the app distributor. As a result, the residual demand curve D_R facing the app developer will be equal to MR_A.

Specifically, suppose the app developer sets a net price $P_{SM}^- = \$6$ per download. The app distributor will maximize profits by setting its per-unit distribution markup $r = \$3$. Anticipating the distribution

Figure 2

Successive monopoly developer/distributor
(with per-unit rate r* = 3 — zero marginal cost)

Apple Profits = 90
App. Developer Profits = 180

markup r = $3, the optimal price for the app developer P_{SM}^- = $6. Thus, when per-unit distribution markups are used, P_{SM}^- = $6 and r = $3 are equilibrium prices. The equilibrium price to the consumer will equal P_{SM}^+ = $9 and Q_{SM} = 30 units will be sold. The distribution markup on top of the app developer's markup is the standard example of "double marginalization," which results in higher prices to consumers, lower output, and lower consumer welfare when compared to the equilibrium outcome depicted in Figure 1. The app developer's total revenues fall to 180, and the app distributor's profits equal 90. Total joint revenues equal 270 and fall relative to the equilibrium outcome depicted in Figure 1, where total revenues equaled 360.

Now consider the effect of a 33.3 percent ad valorem royalty "imposed" by Apple, illustrated in Figures 3 and 4. In setting the optimal price, the app developer will face a residual demand curve that anticipates the App Store charge by Apple. For any ad valorem royalty s, the residual demand faced by the app developer is equal

Figure 3

**Successive monopoly developer/distributor
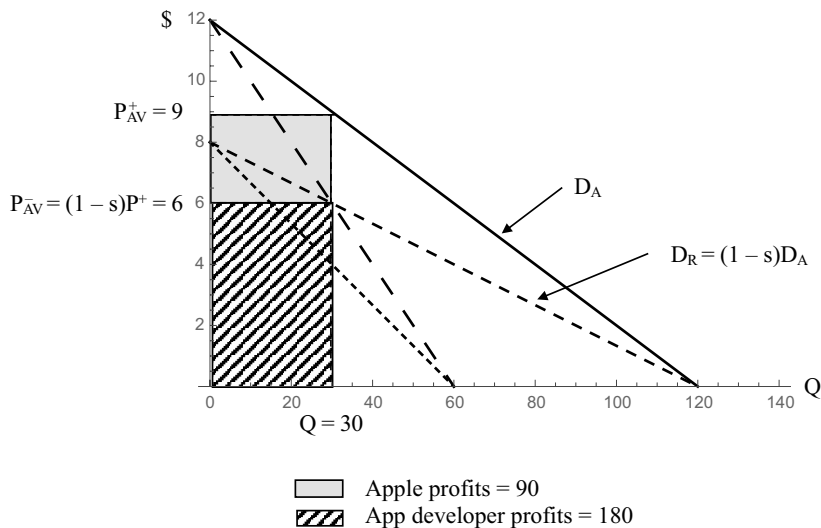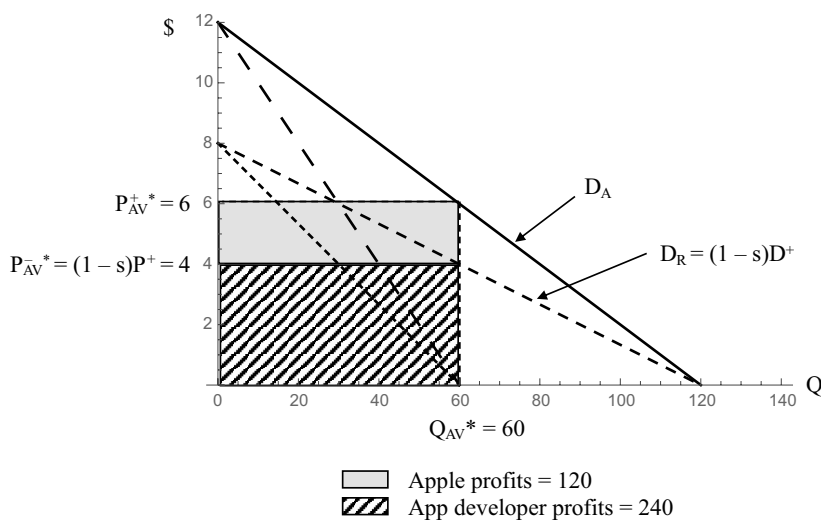(with ad valorem rate s = 1/3 — zero marginal cost)**

Apple profits = 90
App developer profits = 180

Figure 4

**Successive monopoly developer/distributor
(with ad valorem rate s = 1/3 — zero marginal cost)**

Apple profits = 120
App developer profits = 240

265

to $D_R = (1 - s)D_A$. The ad valorem royalty s causes the residual demand curve facing the app developer to rotate inward from the intersection of D_A and the horizontal axis.

Figure 3 illustrates the outcome where the app developer sets the gross price $P_{AV}^+ = \$9$, resulting in a net price $P_{AV}^- = \$6$ net of the ad valorem royalty. Prices, output, welfare, and the distribution of revenues between the app developer and the distributor are identical to the successive monopoly outcome illustrated in Figure 2. If $P_{AV}^+ = \$9$ and $P_{AV}^- = \$6$ were equilibrium prices, then this example would illustrate the claim in the opinion of the Court that in the "two pricing scenarios, everything turns out to be economically the same for the manufacturer, retailer, and consumer."[78]

However, these are not equilibrium prices. The app developer, facing zero marginal cost and a 33.3 percent App Store charge will choose to set the price so that the marginal revenue curve associated with D_R equals zero. Examining Figure 3, marginal revenue at $P_{AV}^+ = \$9$ is positive. Thus, the app developer would choose to lower the gross price from \$9 to $P_{AV}^{+*} = \$6$ because the app developer maximizes two-thirds of total revenue by maximizing total revenue. Figure 4 illustrates the equilibrium outcome with an ad valorem royalty. Compared to the successive monopoly outcome depicted in Figure 2, prices are lower, output is higher, consumer welfare is higher, and the joint profits of the app developers and distributor are higher. Thus, everything is *not* economically the same for the manufacturer, retailer, and consumer in the two pricing scenarios (per-unit versus ad valorem retail markup).

Moreover, compared to the equilibrium in the absence of a retail markup illustrated in Figure 1, there is no effect of the ad valorem App Store charge s on the price of the app to consumers, that is $P_A^* = P_{AV}^{+*} = 6$. As a result, output and welfare are also the same as depicted in Figure 1. Thus, for the plaintiff class of iPhone owners, there is no pass-through charge to the consumer caused by Apple increasing its ad valorem rate above what would have been charged in a world with competitive retailer/app stores. That is, the absence of an effect on the price charged to the consumer holds for any ad valorem rate $0 < s < 1$.

[78] Apple Inc., 139 S. Ct. at 1522.

While our example uses linear demand, the basic result is not dependent on that assumption. As long as the marginal cost of distribution is zero,[79] the basic result holds—that is, maximizing any fixed percentage of total revenue results in the same downstream app price, output, and static welfare as maximizing revenue.

Within the context of the future of the *Apple Inc. v. Pepper* litigation, our analysis suggests that on remand, and with Pepper et al. as direct purchasers, the court considering pass-on damages will find that the plaintiffs have not suffered competitive harm arising from the static effects of Apple's App Store commission level. Unless the plaintiffs expand their claim to reach beyond the static effects of App Store commissions and app developers pricing decisions, it seems unlikely that they will be able to prevail on their antitrust claim.[80]

IV. Conclusion

Apple Inc. v. Pepper is a narrow decision. It demurs on many significant issues that scholars and practitioners anticipated it would address when the Supreme Court granted certiorari. The ruling has left open many questions. Many, for example, believed the Court likely to take on the trio of *Illinois Brick*, *Hanover Shoe*, and *ARC America*.[81] Such a decision would no doubt have had a significant impact on the structure of antitrust deterrence and the allocation of rights and remedies between public enforcement agencies and private litigants. The ultimate economic foundation of *Illinois Brick* is grounded in a policy rationale favoring optimal deterrence over compensation for victims of anticompetitive conduct—that is, "from the deterrence standpoint,

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[79] The result will hold approximately if the marginal cost of distribution is positive but close to zero. For an analysis of the difference between ad valorem royalties and unit royalties in the presence of positive marginal costs, see Llobet & Padilla, *supra* note 74.

[80] For example, reduced revenues from Apple's high ad valorem commissions could reduce the incentive for potential app developers to invest, altering the supply of apps and changing the equilibrium app price.

[81] See, e.g., John Gibson, Chahira Solh, Andrew Gavil & Akhil Seth, *Apple v. Pepper*: Tearing Down the *Illinois Brick* Wall?—Who Can and Cannot Sue Online Platforms under the Federal Antitrust Laws?, Lexology (Dec. 21, 2018), https://www.lexology.com/library/detail.aspx?g=c6cc5c38-4d24-42b2-805e-5ee275169e85; Matthew Perlman, States Urge Justices to Flip *Illinois Brick* in Apple Case, Law360, (Oct. 2, 2018), https://www.law360.com/articles/1088314/states-urge-justices-to-flip-illinois-brick-in-apple-case.

it is irrelevant to whom damages are paid, so long as someone redresses the violation."[82]

Some have criticized the Court's analysis for its alleged inconsistency with its recent ruling in *Ohio v. American Express (Amex)* regarding market definition and platforms.[83] Manne and Stout, for example, argue that "the Court's holding in *Amex* should *also* have required a finding in *Apple Inc. v. Pepper* that an app user on one side of the platform who transacts with an app developer on the other side of the market, in a transaction made possible and directly intermediated by Apple's App Store, should similarly be deemed in the same market for standing purposes."[84] Critics have thus concluded that the Court abandoned the lessons in platform economics learned and embedded into its *American Express* decision. We reject that characterization of *Apple Inc. v. Pepper* on procedural grounds. While such a criticism may ripen at a later stage in litigation, the critics have ignored the fact that the Supreme Court reviewed a ruling at the 12(b)(6) motion-to-dismiss stage. Thus, the lower court properly accepted the plaintiffs' alleged market definition for the purposes of its analysis.

Yet another potentially important issue the Supreme Court did not address in *Apple Inc. v. Pepper* is the viability of aftermarket antitrust claims against app distributors and platforms such as Apple. Aftermarket tying claims have largely been rejected by lower courts since the Supreme Court's 5-4 decision in *Eastman Kodak Co. v. Image Technical Services*.[85] If antitrust regulates the ad valorem royalty rate, resulting in nonlinear pricing by distributors, that result may give rise to such aftermarket claims. The Supreme Court was also silent on this issue, leaving an opportunity to address platform aftermarket claims for another day.

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[82] Ill. Brick, 431 U.S. at 746 (internal citations omitted).

[83] Ohio v. Am. Express Co., 138 S. Ct. 2274 (2018).

[84] Geoffrey Manne & Kristian Stout, In *Apple v. Pepper*, SCOTUS Leaves Home Without its Amex, Truth on the Market (May 13, 2019), https://truthonthemarket.com/2019/05/13/dementia-sets-in-at-scotus-as-the-justices-collectively-mislay-amex/.

[85] See David A.J. Goldfine & Kenneth M. Vorrasi, The Fall of *Kodak* Aftermarket Doctrine: Dying a Slow Death in the Lower Courts, 72 Antitrust L.J. 209 (2004); Kobayashi & Wright, *supra* note 10.

Our conclusion is a necessarily narrow one. Our pass-through analysis demonstrates that, on remand, the plaintiffs should not, and are unlikely to, prevail because they have not been harmed by the defendant's ad valorem rate. The Supreme Court's analysis leaves untouched a number of important issues surrounding the design of antitrust institutions, enforcement rights between public and private plaintiffs, market definition in the platform context, and the viability of aftermarket claims.