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Cover Page Footnote

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Market Impact, Loss Causation and Multiple Regression Modeling—The Importance of Modular Theories of Damage Causation in Antitrust Class Certification Motion Practice After *Comcast v. Behrend*

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Comcast Corp. v. Behrend,[1] the Supreme Court's recent decision on antitrust class certification, is widely perceived as having made class certification more difficult. Antitrust plaintiff classes must demonstrate, at the certification stage, that class-wide damages are measurable with a "common methodology" consistent with the Court's "rigorous analysis" standard,[2] under both Federal Rule 23(b) as well 23(a).[3] Strong dissents were filed in both the Third Circuit and the Court amid sharp disagreements about what the multiple regression model at issue actually entailed for purposes of antitrust impact damage measurement.[4] Part I discusses the *Comcast* majority and dissent positions as well as the decision in the district court[5] and conflicting views of the majority and dissent in the Court of Appeals for the Third Circuit.[6] Part II discusses the multiple regression model at the center of *Comcast*, the Court's understanding of it and how and why judges expressed conflicting views as to its methodology and merits. The authors provide advice for consideration by counsel and expert alike in preparing or attacking statistical expert reports, including multiple regression damage models, under the "rigorous analysis" standard as elucidated by *Comcast*.[7]

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[1] 133 S. Ct. 1426 (2013).

[2] *See generally* the test set forth in Wal-Mart Stores, Inc. v. Dukes, 131 S. Ct. 2541, 2551-52 (2011). A "rigorous analysis," as applied by the Third Circuit, "requires a thorough examination of the factual and legal allegations and may include a preliminary inquiry into the merits." *See* Behrend v. Comcast Corp., 655 F.3d 182, 190 (3d. Cir. 2011) (internal quotations omitted) (stating Rule 23 requirements "are not mere pleading rules. The court may delve beyond the pleadings to determine whether the requirements for class certification are satisfied [, and that a]n overlap between class certification requirement and the merits of a claim is no reason to decline to resolve relevant disputes when necessary to determine whether a class certification requirement is met").

[3] Federal Rules 23(a)(2) and (3) provide that one or more members of a class may sue or be sued as representative parties on behalf of all members only if there are questions of law or fact common to the class and the claims or defenses of the representative parties are typical of the claims or defenses of the class. FED. R. CIV. P. 23(a)(2)-(3). Federal Rule 23(b)(3) provides that a class action may be maintained if Rule 23(a) is satisfied and the court finds "the questions of law or fact common to class members predominate over any questions affecting only individual members." FED. R. CIV. P. 23(b)(3). Plaintiff's burden at the certification stage is not to prove antitrust impact on the merits but to demonstrate such impact is capable of being proved at trial through evidence common to the class rather than individual class members; for that reason, the Third Circuit concluded the dispute between Comcast and plaintiffs was "evidentiary." *Behrend*, 655 F.3d at 197.

[4] *Comcast*, 133 S. Ct. at 1435 (Ginsburg, J., dissenting); *Behrend*, 655 F.3d at 208 (Jordan, J., dissenting).

[5] Behrend v. Comcast Corp., 264 F.R.D. 150 (E.D. Pa. 2010).

[6] *Behrend*, 655 F.3d 182.

[7] *See id.* at 190 (clarifying the "rigorous analysis" standard). The district court heard live

PART I

A.   Justice Scalia and the Majority Position

The *Comcast* plaintiffs were subscribers of Comcast Corporation, a television cable company they sued for, *inter alia*, monopolization under the Sherman Act, Section 2.[8] Comcast allegedly used an anticompetitive strategy that drove prices up for "non-basic video programming cable service"[9] in Philadelphia's media market (the "Philadelphia DMA").[10] Plaintiffs sought to certify a Rule 23(b)(3) class[11] for persons in the Philadelphia DMA injured by Comcast's alleged anti-competitive misconduct during the class period.[12] The District Court required plaintiffs to satisfy the predominance element by proving that the existence of individual injury resulting from the alleged antitrust violation(s) could be proven with evidence common to the class and, as well, that class damages were measurable, on a class-wide basis, using a "common methodology."[13]

Comcast had used a so-called "clustering strategy" which, the class alleged, raised cable subscription rates in an area referred to as the Philadelphia DMA.[14] "Clustering" is effected by concentrating operations within a particular region,[15] and Comcast allegedly engaged in clustering by acquiring competitor cable providers in the DMA by swapping their systems outside the region for competitor

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testimony from fact and expert witnesses and considered thirty-two expert reports, as well as examining deposition excerpts. *Id.* at 188. It also issued the parties a series of questions related to antitrust impact and damages methodology and then heard oral argument. *Id.*

[8]   *Behrend*, 655 F.3d at 186.

[9]   *Id.* at 187.

[10]   *Comcast*, 133 S. Ct. at 1430. The geographical area in issue was referred to throughout the *Comcast* opinions as the Philadelphia Designated Market Area or "Philadelphia DMA." *Id.* The "DMA" is a media research area used to identify television stations whose broadcast signals reach a specific area and attract the most viewers; DMA boundaries are widely accepted and companies use them to keep track of advertising. *Id.* at 1430 n.1; *Behrend*, 655 F.3d at 186-87.

[11]   *Behrend*, 655 F.3d at 187. Plaintiffs also alleged violations of the Sherman Act, Section 1, for monopolization or attempted monopolization, for "imposing horizontal territory, market and customer allocations by conspiring with and entering into and implementing unlawful swap agreements, arrangements or devices." *Id.* at 186; 15 U.S.C. § 1 (2004).

[12]   *See Comcast*, 133 S. Ct. at 1430 (describing the class).

[13]   *Id.*

[14]   *Id.* at 1430-31.

[15]   *See Behrend*, 655 F.3d at 187 (discussing the practice of clustering); *see also Behrend*, 264 F.R.D. at 161-62 (discussing how clustering allowed Comcast to gain market power).

systems in the region.[16] As a result of nine "clustering transactions," Plaintiffs alleged that Comcast's share of subscribers was improperly "increased from 23.9 percent in 1998 to 69.5 percent in 2007."[17]

Plaintiffs argued that their damages could be assessed, on a class-wide basis, based on an expert report authored by Dr. James McClave ("McClave") (the "McClave Report"), which employed an econometric multiple regression model to measure the combined effect of four antitrust impacts on cable subscription prices.[18] These four impacts included 1) decreased penetration by satellite providers,[19] 2) overbuilder deterrence,[20] 3) lack of benchmark competition,[21] and 4) increased bargaining power.[22] By comparing actual cable prices in the region allegedly affected by anti-competitive activities

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[16] *Behrend*, 655 F.3d at 187.

[17] *Comcast*, 133 S. Ct. at 1430. *See Behrend*, 264 F.R.D. at 160 (discussing barriers to entry and market share issues).

[18] *Behrend*, 264 F.R.D. at 181-82. *Behrend*, 655 F.3d at 191 (the phrase "antitrust impact" refers to "individual injury" and is critical to the evaluation of "Rule 23(b)(3)'s predominance requirement" because "it is an element of the claim that may call for individual, as opposed to common, proof," noting it is plaintiff's burden, at the certification stage, to demonstrate that "antitrust impact is capable of proof at trial through evidence [] common to the class rather than individual [] members").

[19] *Behrend*, 655 F.3d at 190 n.6. This theory posited that Comcast's high market share that resulted from clustering made it profitable for Comcast to deny Comcast SportsNet to direct broadcast satellite ("DBS") providers, which lowered DBS penetration rates, which allowed Comcast to raise prices. *Id.* The District Court rejected this theory because it found that denial of SportsNet to DBS providers was unrelated to clustering. *Id.* at 210 n.7. *See Behrend*, 264 F.R.D. at 165-66 (explaining in detail why the District Court rejected the theory that clustering reduced DBS penetration in allegedly affected market).

[20] *Behrend*, 264 F.R.D. at 166-67 (an "overbuilder" is a company that builds and offers customers a competitive alternative where a telecommunications company already operates, and Plaintiffs' theory was that clustering deterred overbuilders from entering the Philadelphia DMA, restricting competition, allowing Comcast to raise prices). The District Court limited Plaintiffs' theory of antitrust impact to its alleged anticompetitive clustering conduct. *Behrend,* 655 F.3d at 195. *See id.* at 210 n.6 (Jordan, J., dissenting) (discussing different theories); *see also Behrend*, 264 F.R.D. at 167-75 (discussing overbuilding theory and proof issues at trial).

[21] *See Behrend*, 264 F.R.D. at 177-78 (rejecting theory that clustering reduced benchmark competition, i.e., the ability of customers to compare service and prices among competing providers, because the plaintiffs provided no evidence that consumers actually engaged in benchmark competition); *see also Behrend*, 655 F.3d at 210 n.6 (Jordan, J., dissenting) (discussing all theories); *see also Behrend*, 264 F.R.D. at 175-78 (discussing and rejecting benchmark theory).

[22] *See Behrend*, 264 F.R.D. at 159 (discussing theory); *see also id.* at 181 (rejecting theory of increased bargaining power, i.e., that Comcast's market power increased its bargaining power relative to content providers, allowing it to raise prices for its services, as "wholly unsupported"); *see also id.* at 178-81 (discussing and rejecting increased bargaining power theory).

with hypothetical prices in an unaffected region, the "McClave Report" purported to measure damages resulting from the four antitrust impacts.[23]

McClave's methodology was extensively discussed by the District Court.[24] The Third Circuit, in affirming the District Court, held the clustering evidence demonstrated that Comcast's conduct plausibly could have reduced competition by raising barriers to market entry by an overbuilder, resulting in higher prices to subscribers in the relevant DMA.[25] For that reason, both courts held that the antitrust impact plaintiffs alleged was both "plausible in theory" and "susceptible to proof at trial through available evidence common to the class."[26]

Both courts further held the McClave Report's regression model set out a common methodology which could measure and quantify damages[27] on a class-wide basis,[28] but rejected Comcast's arguments against the Report, which, as discussed below, they perceived would compel the court to decide the merits as to whether plaintiff proved an antitrust impact, at the certification stage.[29]

The problem Justice Scalia perceived, however, was that the District Court had accepted only one of four theories of liability that the McClave model was measuring. Scalia agreed that overbuilding, by which a company provides more infrastructure than demand supports, can keep competitors out,[30] but disagreed with the lower courts

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[23] *Comcast*, 133 S. Ct. at 1433-34.

[24] *See generally Behrend*, 264 F.R.D. at 181-91.

[25] *Behrend*, 655 F.3d at 198.

[26] *Id.* (quoting Hydrogen Peroxide Antitrust Litig., 552 F.3d 305, 325 (3d Cir. 2008)). Judge Jordan, dissenting, urged that even if the evidence in support of a theory was "plausible," the question remained "whether that plausible theory is susceptible to common proof" and if the only proof was inadmissible expert testimony, as he maintained was the case in *Comcast*, plaintiffs will not have met their burden. *Behrend*, 655 F.3d at 215 n.18 (Jordan, J., dissenting).

[27] *Behrend*, 655 F.3d at 207 (citing *Behrend*, 264 F.R.D. at 191).

[28] *Behrend*, 655 F.3d at 200-01 ("[The] antitrust impact was class-wide, because the prices were elevated above competitive levels across all class members and for the entire time period;" as to method, McClave compared prices Comcast charged in the Philadelphia DMA to benchmark counties, applying "screens to determine whether the counties represented a level of competition similar to what Comcast would have faced in the Philadelphia market absent its alleged anticompetitive conduct," using a multiple regression analysis). For more information on the screens McClave used and Comcast's experts' criticisms of them, *see generally id.* at 201-02. Screens are further discussed, *infra* in Part II.

[29] *Comcast*, 133 S. Ct. at 1433.

[30] *Id.* at 1434; *Behrend*, 655 F.3d at 201-02, 213 (describing theories).

that damages could be determined in a manner common to all class members.[31] In his view, Plaintiffs had neither provided class-wide evidence that the only remaining theory, overbuilding, actually led to the price increases in issue nor shown damages could be calculated on a class-wide basis, from it.[32] To the contrary, he accepted the arguments Comcast made in the lower courts, but which both courts rejected, concluding that because plaintiffs' model was measuring damages from four antitrust impact theories, rather than the single allowed overbuilding theory, and because the overbuilding theory did not differentiate/disaggregate effects to determine which were proximately traceable to which antitrust impact, plaintiffs failed to meet their burden.[33]

The District Court and Third Circuit rejected Comcast's argument that plaintiff was required to show, at the certification stage, that its theory of damages would measure all and only the antitrust injury in issue, because doing so, they reasoned, would require courts to engage in an improper merits inquiry of plaintiffs' damage calculation methodology, converting certification hearings to mini-trials on the merits.[34] In their view, plaintiffs were not, at such early stage, required to "tie each theory of antitrust impact" causally to an exact calculation of damages,[35] and they perceived that delving into a particularized damage inquiry would entail an impermissible merits inquiry.[36]

Although the lower courts had concluded Plaintiffs' report was sufficient to serve as class-wide proof at the certification stage, Justice Scalia began his analysis by reaffirming that plaintiffs must affirmatively demonstrate with evidentiary proof that the class must satisfy Rule 23 requirements for class certification.[37] A trial court's duty is to undertake a "rigorous analysis" of whether plaintiffs satisfy Rule 23(a) certification requirements is just as applicable to Rule

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[31] *Comcast*, 133 S. Ct. at 1433-35.

[32] *Id.*

[33] *Id.* Judge Jordan dissented from the Third Circuit's holding, stating his view that although he agreed that antitrust impact could be shown through evidence common to that class in the Philadelphia DMA, damages could not be proven using evidence common to that entire class, which he viewed as related, but separate questions. *Behrend*, 655 F.3d at 209 (Jordan, J., dissenting).

[34] *Comcast*, 133 S. Ct. at 1433.

[35] *Id.* at 1431.

[36] *Id.*

[37] *Id.* at 1432.

23(b).[38] The lower courts erred, he reasoned, because they refused to entertain arguments against the class damage model just because they would be "pertinent to the merits."[39] Applying a rigorous analysis, he explained, frequently entails an overlap with a merits analysis and considerations "enmeshed in the factual and legal issues comprising the plaintiff's cause of action."[40] Plaintiffs should have been required to demonstrate that they could calculate class-wide damages attributable to the sole antitrust impact that the District Court allowed, i.e., its so-called "overbuilder theory."[41]

Although damage calculations need not be exact, Justice Scalia explained, plaintiffs' "damages case must be consistent with its liability case, particularly with respect to the alleged anticompetitive effect of the violation."[42] Justice Scalia reasoned that McClave's model failed to measure damages resulting from the only antitrust injury on which liability could be premised because the base-line that the model McClave used "assumed the validity of all four theories of antitrust impact [that Plaintiffs had] initially advanced," even though the District Court had rejected three of the theories.[43] McClave admitted his model calculated damages resulting from the alleged anticompetitive conduct as a whole, and as structured, could not isolate the damage measure attributable to the sole surviving theory without attributing damages to any particular theory of impact.[44]

Comcast pointed out in each court that McClave had himself stated his model was based on the cumulative effect of the antitrust impacts and could not isolate damages for individual theories of harm.[45] Because the model could not distinguish between lawful and unlawful competition, the District Court erred in accepting his theory for purposes of class certification.[46] Plaintiffs responded that Comcast's arguments were a premature attack on the model's merits and that Comcast's attacks on the benchmarks McClave used were a premature attack, as well, because the court's role on certification

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[38] *Id.*
[39] *Comcast*, 133 S. Ct. at 1432-33.
[40] *Id.* at 1432.
[41] *Id.* at 1431,1433.
[42] *Id.* at 1433 (quoting ABA SECTION OF ANTITRUST LAW, PROVING ANTITRUST DAMAGES: LEGAL AND ECONOMIC ISSUES 62 (2d ed. 2010)).
[43] *Id.* at 1434.
[44] *Comcast*, 133 S. Ct. at 1431.
[45] *Id.*
[46] *See Behrend*, 655 F.3d at 206 (accepting McClave's theory for class certification).

was simply to determine if impact could be assessed by the common, class-wide proof, not to determine whether a conceivable attack on the merit of the evidence that would ultimately be adduced in favor of plaintiffs' position at trial would succeed.[47]

The Third Circuit separating, as it said, the "forest [from] the trees," explained its view:

> The inquiry for a district court at the class certification stage is whether the plaintiffs have demonstrated by a preponderance of the evidence that they will be able to measure damages on a class-wide basis using common proof . . . through means amenable to the class action mechanism. We are looking here not for hard factual proof, but for a more thorough explanation of *how* the pivotal evidence behind plaintiff's theory can be established.[48]

The question for the Third Circuit was whether the expert model "could evolve to become admissible evidence," not whether the model was "perfect at the certification stage."[49]

Justice Scalia viewed the matter differently. Quoting the Federal Judicial Center, Reference Manual on Scientific Evidence, addressing the same issue, Justice Scalia explained: "The first step in a damages study is the translation of the legal theory of the harmful event into an analysis of the economic impact of that event."[50] Plaintiffs, he concluded, did not meet that burden because their model did not separately measure the pricing injury caused by the sole, allowed antitrust theory from those disallowed.[51] The issue was extensively discussed in Judge Jordan's dissent from the Third Circuit majority opinion.[52] Judge Jordan argued that for McClave's comparison between the Philadelphia DMA and benchmark counties to be valid, the benchmarks needed to reflect conditions that would have prevailed in the DMA, but for the impact of the conduct in issue; otherwise, the model would be imputing damages that did not result from overbuilding deterrence and were not the plausible result of the alleged

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[47] *Id.* at 203.

[48] *Id.* at 203-04.

[49] *Id.* at 204 n.13.

[50] *Comcast*, 133 S. Ct. at 1435 (quoting FED. JUDICIAL CTR., REFERENCE MANUAL ON SCIENTIFIC EVIDENCE 432 (3d ed. 2011)).

[51] *Id.* at 1434-35.

[52] *Behrend*, 655 F.3d at 216-17 (Jordan, J., dissenting).

wrong.[53]

McClave, however, selected benchmark counties using "screens" which Judge Jordan concluded failed, because they failed to identify the "but for" conditions relevant to the only remaining impact, i.e., deterred overbuilding, so the model was incapable of identifying damages caused by that single impact.[54]

Justice Scalia explained, regarding the same issue: "[I]n light of the model's inability to bridge the differences between supra-competitive prices in general and supra-competitive prices attributable to the deterrence of overbuilding, Rule 23(b)(3) cannot authorize treating subscribers within the Philadelphia cluster as members of a single class."[55]

In fact, Judge Jordan had noted that in "thirteen of the eighteen counties in the Philadelphia DMA, Dr. McClave's opinion [did] not even attempt to show that there were elevated prices resulting from reduced overbuilding. In fact, he assume[d] that there was no such effect."[56] The model, he pointed out, assumed elevated prices from reduced overbuilding in five counties in which one competitor intended to enter.[57] In the remaining thirteen, because something other than overbuilding was the cause of any elevated pricing, any damages with respect to them, could be attributable to lawful competition.[58] Judge Jordan thus concluded that the *Comcast* plaintiffs had not just been unable to show damages could be proven using evidence common to the class but, more fundamentally, had failed to show, for thirteen counties, damages could be proven by any evidence, common or otherwise.[59] What the McClave model showed was not that reduced overbuilding maintained higher prices across the entire Philadelphia DMA, but just in five counties within which a competitor planned to enter those counties.[60]

Notably, the District Court and Third Circuit majority held to the contrary, finding that the McClave model could show class-wide damages by common proof because it calculated damages by com-

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[53]   *Id.*

[54]   *Id.* at 216-17. *See infra*, Part II.

[55]   *Comcast*, 133 S. Ct. at 1435.

[56]   *Behrend*, 655 F.3d at 217 (Jordan, J., dissenting).

[57]   *Id.*

[58]   *Id.*

[59]   *Id.*

[60]   *Id.*

paring the actual prices to the constructed "but-for" market and differences between the actual and but-for prices would, in their view, reflect anti-competitive impact.[61]   The model, they reasoned, was measuring supra-competitive prices in the allegedly affected market "regardless of the type[s] of anticompetitive conduct" by which they were actually caused.[62]

Prior to *Comcast*, plaintiffs were not required to "tie each theory of antitrust impact to an exact calculation of damages."[63]   Doing so seems to come pretty close to requiring plaintiff to establish proof of loss causation at the certification stage, which requirement the Court has rejected.[64]

B.   Justice Ginsburg and the Dissent Position

The Court's decision was 5-4. The dissent, penned by Justice Ginsburg, sharply disagreed with the Majority. After discussing procedural issues as to why the Court should not have heard the case in the first place, Comcast had sought review of the question: "[W]hether a district court may certify a class action without resolv-

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[61]   *Behrend*, 655 F.3d at 205 (majority opinion). McClave screened for penetration by DBS at or above the national average to show penetration was constrained by Comcast's anticompetitive conduct, but, as Judge Jordan observed, the District Court found that DBS penetration in the DMA was well below the national average, and had been before the class period, and was unrelated to clustering, and based on valid business considerations. *Id.* at 219 (Jordan, J., dissenting) (citing *Behrend*, 264 F.R.D. at 165). Instead of using the actual, non-affected DBS penetration in the Philadelphia DMA, McClave used much higher national average rates, to conclude DBS penetration was not "substantially attributable to lawful competition." *Behrend*, 655 F.3d at 219 (Jordan, J., dissenting). Judge Jordan concluded the McClave model wrongly calculated liability for the foreclosure of DBS competitors. *Id.*; *see also Behrend*, 264 F.R.D. at 182-84 (discussing methodology and concluding "McClave used his national average DBS penetration screen as a descriptor of typical competitive market conditions. The fact that DBS penetration would not have reached the level of national average for Comcast markets in the Philadelphia DMA does not mean that national average DBS penetration, combined with median Comcast share during the class period, do not demonstrate a typical competitive market.").

[62]   *Behrend*, 655 F.3d at 205 (majority opinion). The court's task was solely to address whether measurement and quantification of damages could be determined on a class-wide basis, not whether the methodology was "a just and reasonable inference or speculative." *Id.* at 206. The attacks on the model, the District Court and Third Circuit held, were attacks on the merits of the methodology, as discussed in detail in Part II, but did not impeach the ultimate holding that damages were capable of common proof on a class-wide basis, which should be the sole issue on a certification motion. *Id.* at 207.

[63]   *Id.* at 206.

[64]   *See* Erica P. John Fund, Inc. v. Halliburton Co., 131 S. Ct. 2179, 2187 (2011) (holding plaintiffs need not prove loss causation at the certification stage).

ing 'merits arguments' that bear on [Federal Rule of Civil Procedure] 23's prerequisites for certification, including whether purportedly common issues predominate over individual ones under Rule 23(b)(3)."[65]

The Court, Justice Ginsburg explained, had "granted review of a different question: 'Whether a district court may certify a class action without resolving *whether the plaintiff class has introduced admissible evidence*, including expert testimony, to show that the case is susceptible to awarding damages on a class-wide basis.' "[66] The reason for the reformulation was that Comcast had not objected to the admission of the McClave Report, waiving the argument that the expert report was not admissible testimony.[67] Justice Scalia concluded it was still possible for Comcast to argue that the evidence proffered by the class "failed 'to show that the case [was] susceptible to [an] award[of] damages on a class-wide basis' " and reformulated the issue.[68]

Justice Ginsburg criticized the Court's reformulation for "shift[ing] the focus" from the district court's analysis, to the admissibility of expert testimony, to the disadvantage of the class and the Court, both of which lacked the benefit of full briefing.[69] She concluded that "the decision should not be read to require, as a prerequisite to certification, that damages attributable to a classwide injury be measureable 'on a class-wide basis' " given the Majority's "dependence on the absence of [a] contest on the matter."[70] She further stated her view that "[t]he Court's ruling is good for this day and case only," stating that the rule remains "that a class may obtain certification under Rule 23(b)(3) when liability questions common to the class predominate over damages questions unique to class members."[71]

Justice Ginsburg began her substantive analysis by noting that the district court's elimination of three antitrust impact theories did not impeach the expert's damage model because anti-competitive conduct was, in fact, reflected in the higher price for cable services.[72]

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[65]   *Comcast*, 133 S. Ct. at 1435-36 (Ginsburg, J., dissenting).
[66]   *Id.* at 1435.
[67]   *Id.* at 1436.
[68]   *Id.* at 1431 n.4 (majority opinion).
[69]   *Id.* at 1435 (Ginsburg, J., dissenting).
[70]   *Comcast*, 133 S. Ct. at 1436 (Ginsburg, J., dissenting).
[71]   *Id.* at 1437.
[72]   *Id.* at 1439.

She noted that Comcast, in the district court, had argued that "the three rejected theories, had no impact on prices," at all.[73] Based on Comcast's own statements, Justice Ginsburg would have held that the damages that the model described would necessarily have stemmed exclusively from the sole surviving theory, conduct that deterred new entrants, including "overbuilders."[74] The Majority, she observed, set forth no support for its conclusion that the district court's finding regarding the model's ability to measure antitrust impact was obviously erroneous.[75]

What it did establish, the dissent maintained, was that although the model did "not purport to show precisely *how* Comcast's conduct led to higher prices in the [affected] area," it did show "*that* Comcast's conduct brought about higher prices. And[, moreover,] it measure[d] the amount of subsequent harm," which the Dissent would have held sufficient.[76]

Justice Ginsburg criticized the Majority, noting that its rulings required it to "consider fact-based matters, namely what this econometric multiple-regression model is about, what it proves, and how it does so,"[77] issues discussed below in Part II. Although it struck three of the expert theories, the District Court, nevertheless, concluded plaintiffs' econometric model was capable of measuring damages on a class-wide basis, which, she reasoned "was not a legal conclusion about what the model proved[, but rather] a factual finding about *how* the model worked."[78]

Justice Scalia disagreed and, commenting on the dissent position, made three points.[79]

First, he explained, neither of the courts below actually found that the model established damages attributable to overbuilding alone.[80] In contrast, Justice Ginsburg noted that because Comcast

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[73] *Id.* at 1440 (citing *Behrend*, 264 F.R.D. at 166, 176, 180-81).

[74] *Id.*

[75] *Comcast*, 133 S. Ct. at 1440 (Ginsburg, J., dissenting).

[76] *Id.* at 1441.

[77] *Id.* at 1439.

[78] *Id.* at 1440.

[79] *Id.* at 1433 (majority opinion).

[80] *Comcast*, 133 S. Ct. at 1433. Judge Jordan, in dissenting from the Third Circuit opinion, presented a highly detailed argument to support his conclusion that McClave's testimony was "incapable of identifying any damages caused by reduced overbuilding in the Philadelphia DMA," was inadmissible for that reason and incapable of constituting evidence of damages. *Behrend*, 655 F.3d at 214-15 (Jordan, J., dissenting). He noted that although *Daubert* had not been explicitly held applicable at the certification stage, the Court, in

had represented in the courts below that the dismissed theories had no price impact,[81] the full impact the McClave Report quantified must have resulted from the single remaining overbuilder theory.[82]

Second, Justice Scalia observed that while the data contained in the econometric model might be "questions of fact[,]" what the "data prove[s] is no more a question of fact than what our opinions hold."[83]   The model's multiple regression analysis, in the dissent's view, however, "provide[d] *evidence* that Comcast's anticompetitive conduct . . . *caused* the class to suffer injuriously higher prices,"[84] presumably because the model's output is the result of its assessment of all perceived antitrust impacts. The fact that the model "proves" something, in a legal sense, does not mean that what it proves cannot, as well, be a fact.

Third, Justice Scalia then explained that even if a question of fact were involved with respect to the model, concluding that it "established damages attributable to overbuilding alone would be 'obvious[ly] and exceptional[ly]' erroneous."[85] Given Comcast's admissions regarding the lack of price impact of the three rejected theories, the overbuilding theory appears, by default, to be the only theory explaining the price discrepancy the model measured and, so, it is difficult to see why that position would be "obviously" and "exceptionally" erroneous.

The Third Circuit had noted that the District Court had "asked the parties after the hearing how to interpret Dr. McClave's damages model if it credited at least one, but not all" of the theories of antitrust impact, and the District Court determined McClave's model would still be viable even if the court rejected some of the theories.[86] Justice Ginsburg would have held that the district court had not abused its discretion in finding the expert model could properly be used to

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Dukes, 131 S. Ct. at 2553-54, expressed doubt about a district court's conclusion to the contrary. *Behrend*, 655 F.3d at 215 n.18 (Jordan, J., dissenting). He noted that although Comcast had not used the language of *Daubert* or challenged admissibility in its papers, the substance of its challenge to McClave's model was that it was irrelevant since it no longer "fit" the liability theory of the case once the District Court eliminated three of four theories of antitrust impact, rendering the surviving theory incapable of class-wide common proof, for reasons he set forth. *Id.*

[81]   *Behrend*, 264 F.R.D. at 166, 176, 180-81.
[82]   *Comcast*, 133 S. Ct. at 1440 (Ginsburg, J., dissenting). *See infra* Part II.
[83]   *Id.* at 1433 n.5 (majority opinion).
[84]   *Id.* at 1439 (Ginsburg, J., dissenting) (emphasis added).
[85]   *Id.* at 1433 n.5 (majority opinion) (alteration in original).
[86]   *Behrend*, 655 F.3d at 202 (citing *Behrend*, 264 F.R.D. at 190).

measure class damages, and this would be true "even if the damages were limited to those caused by deterred overbuilding."[87] The class "alleged that Comcast's anticompetitive conduct increased [its] market share and market power by deterring potential entrants," i.e., overbuilders, and likely others following their lead, from entering the market.[88] This, the class argued, the lower courts accepted, and Justice Ginsburg would have held, "deprive[d] the market of the price discipline that their entry would have provided," through the threat of overbuilder expansion, and/or the expansion of others (overbuilders), that might be led by their example.[89]

The Third Circuit found that because plaintiffs had provided a method to measure and quantify damages on a class-wide basis, it was unnecessary to decide "whether the methodology [was] a just and reasonable inference or speculative."[90] Under that reasoning, Justice Scalia explained, "at the class-certification stage[, virtually] *any* method of measurement [would appear] acceptable so long as it can be applied [on a] classwide [basis], no matter how arbitrary the measurements [might] be," which would effectively "reduce Rule 23(b)(3)'s predominance requirement to a nullity."[91]

PART II

Regression is a statistical methodology that can measure the correlation among explanatory variables by quantifying, when the value of one or more independent, antecedent variables changes,[92] the degree to which the value of a dependent variable changes. Regression analysis is widely used as a basis upon which to test hypotheses, sometimes referred to as causal models, by measuring the "fit" of such a model with the observed variation in value of the dependent variable. The higher the percentage of observed variation in the value of the dependent variable that can be explained by variations in the independent variables, "explained variance," the better the "fit" of the

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[87] *Comcast*, 133 S. Ct. at 1440 (Ginsburg, J., dissenting).

[88] *Id.*

[89] *Id.*

[90] *Behrend*, 655 F.3d at 206.

[91] *Comcast*, 133 S. Ct. at 1433.

[92] An antecedent variable is a variable that can help to explain the apparent relationship (or part of the relationship) between other variables nominally in a cause/effect relationship and, in regression analysis, an antecedent variable would be one that influences the independent and dependent variables.

regression model as an explanatory formula.

The McClave Report employed a multiple,[93] linear,[94] regression model to:

> establish a "but for" baseline – a figure that would show what the competitive prices would have been if there had been no antitrust violations. Damages would then be determined by comparing to that baseline what the actual prices were during the charged period. The "but for" figure was calculated, however, by assuming a market that contained none of the four distortions that respondents attributed to petitioners' actions. In other words, the model assumed the validity of all four theories of antitrust impact initially advanced by respondents: decreased penetration by satellite providers, overbuilder deterrence, lack of benchmark competition, and increased bargaining power. At the evidentiary hearing, Dr. McClave expressly admitted that the model calculated damages resulting from the 'alleged anticompetitive conduct as a whole' and did not attribute damages to any one particular theory of anticompetitive impact.[95]

Whether or what effect any of the three theories had on price would seem to be a question of loss (proximate) causation and the Court, in *Erica P. John Fund v. Halliburton*,[96] held that the plaintiff need not prove loss causation at the certification stage. In *Comcast*, the Court required plaintiff's model, at the certification stage, to show

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[93] "Multiple" refers to the use of two or more independent variables to explain the variation in the value of a dependent variable. A variable is dependent when its value is thought to "depend" on the values of other variables. A regression formula containing only one independent explanatory variable and one dependent variable, or a total of two variables, is referred to as a "bivariate" regression formula, or equation.

[94] "Linear" refers to a mathematical relationship of a constant nature, or ratio. Geometrically, a straight slope, such as an inclined ramp, would be considered "linear," whereas, by way of contrast, more complex relationships could be considered non-linear (e.g. curvilinear, which would involve "curvilinear" regression). Imagine a shotgun fired at a slanted upward angle to a wall. Consider the task of drawing a straight line with a yardstick through the resulting scattered "spray" pattern of individual buckshot holes so as to minimize the average distance from each hole to the nearest point on the yardstick. That is the mathematical objective of linear regression. The regression line would point back to the source of the buckshot, with some degree of residual error in measurement, but with high statistical confidence.

[95] *Comcast*, 133 S. Ct. at 1434.

[96] 131 S. Ct. at 2187.

it was plausible that the alleged, actual antitrust impact was the result of (caused by) a violation, the effect of which must be measurable by evidence common to the class.[97] After *Comcast*, in antitrust certification motions, the Court appears to be demanding that a causal theory of price impact be plausibly and causally tied to a particular antitrust violation, by proof "common to the class," which, if not identical to loss causation, sounds a lot like it.[98] However, in securities class suits, plaintiffs need not prove loss causation at the certification stage; rather, they just need to provide proof of direct or indirect reliance, under the fraud on the market theory and efficient market hypothesis.[99]

"Correlation is not causation" is a statistical truism often intoned in regression analysis in econometric applications of which the McClave report is an example.[100] Regression models are often used to empirically verify a hypothesis, or a theoretical proposition, that a causal relationship exists between one or more explanatory variables that influence a dependent one.[101]

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[97] *Comcast*, 133 S. Ct. at 1433.

[98] *Id.* at 1430.

[99] *Id.* at 1436 (Ginsburg, J., dissenting). *See generally* Laurence A. Steckman & Robert E. Conner, *Loss Causation Under Rule 10b-5, a Circuit-by-Circuit Analysis: When Should Representational Misconduct be Deemed the Cause of Legal Injury Under the Federal Securities Law?*, *in* 1 1998 SECURITIES ARBITRATION 375 (1998) (discussing law of proximate causation under the common law and explaining how requirement of loss causation has been interpreted in the context of securities fraud litigation in each federal circuit).

[100] *See, e.g.*, Pure Earth, Inc. v. Call, No. 12-2130, 2013 WL 3776218, at *5 (3d Cir. July 19, 2013) (Sloviter, J., dissenting). Although the fraud on the market theory and efficient market hypothesis upon which it is based are fundamental securities fraud class action practice, their continued viability appears to be in substantial question. *See generally* Laurence A. Steckman, *Risk Arbitrage and Insider Trading, a Functional Analysis of the Fiduciary Concept Under Rule 10b-5*, 5 TOURO L. REV. 121, 142-53 (1988) (discussing fraud on the market theory and presumption of reliance under then recent authority, Basic v. Levinson, 485 U.S. 224 (1988), but advocating alternative market impact theory of insider trading liability under functional analysis approach). More recently, in Amgen Inc. v. Connecticut Retirement Plans & Trust Funds, 133 S. Ct. 1184 (2013), four Supreme Court Justices recently questioned both the theory and hypothesis. Justice Ginsburg noting current economic research shows market efficiency is not a "binary, yes or no question," concluded that "differences in efficiency can exist within a single market." *Id.* at 1198 n.6. Justice Scalia called Basic "arguably regrettable" authority. *Id.* at 1206 (Scalia, J., dissenting). Justice Thomas called the theory "questionable." *Id.* at 1208 n.4 (Thomas, J., dissenting). Justice Alito stated that a reconsideration of the Basic reliance presumption might over-rule the theory entirely. *Id.* at 1204 (Alito, J., dissenting).

[101] *See, e.g.*, *Behrend*, 264 F.R.D. at 182 (explaining McClave's use of a multiple regression model). Two variables may appear highly related based on a correlation analysis of empirical data, but this does not inform which variable(s) causes the other. Indeed, a "spurious correlation" between variables occurs when there is no meaningful association between

Regression models are designed to measure the extent to which consequential changes in the value of dependent variables can be explained by changes in value of one or more antecedent variables.[102] Further, regression models have an associated *unexplained variance* component which is a measure of the aggregate discrepancy between observed data and fitted data, as determined by the estimation model.[103] Unexplained variance may also result from the omission of a consequential explanatory variable(s) from the model, either intentionally or not, but which, if incorporated, would cause the explained variance to increase and the unexplained variance to decrease commensurately.[104] For regression models, the higher the explained variance relative to the total variance (explained and unexplained), the stronger the effect of the identified explanatory variable(s) on the specified, dependent variable.[105]

A properly specified regression model may yet prove ineffective if one attempts to extrapolate results or draw inferences beyond the implicit region of observations.[106] For example, population density was an explanatory variable McClave originally considered for inclusion in his regression model.[107] However, on further analysis, McClave chose to omit population density because the Philadelphia DMA had a greater DMA than the benchmark data set which means that, had Dr. McClave included population density in his regression model, it would have extrapolated beyond the underlying data.[108] The District Court held McClave's decision not to include population density was well supported.[109]

Regression is widely regarded as better applied to test an already formulated hypothesis, or causal model. Statistical *a priori* hypotheses and expectations, however, often invite bias and preconcep-

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variables, despite appearance of an inherent, yet otherwise coincidental statistical relationship, based on observational data. Consequently, no cause-and-effect proposition is implied by the regression model, no matter how significant the resultant statistical estimates. JOHN NETER ET AL., APPLIED LINEAR STATISTICAL MODELS 28-29, 36 (3d ed. 1990).

[102] NETER ET AL., *supra* note 101, at 26-31.

[103] *Id.*

[104] *Id.* at 87-89, 103.

[105] *Id.* at 225-26, 241.

[106] *Id.*

[107] *Behrend*, 264 F.3d at 202; NETER, *supra* note 101, at 85.

[108] *Id.* at 184 (providing that McClave also opined that the inclusion of population density in Dr. Chipty's competing regression models violated extrapolation and the District Court agreed).

[109] *Id.* at 202.

tions in the specification of the regression model as well as conclusions advanced, or hypotheses endorsed, based on their use.[110] Rummaging about for statistical correlations without a clear idea or theory as to why any should exist between selected variables is not likely to help establish a sound causal model – spuriously suggestive correlations exist everywhere, bearing no implication of causality with respect to anything.

In class suits, a properly designed regression model is typically used to specify and quantify factors explaining substantive degrees of variation in determining damages, but conventional regression models frequently fall short of proving causation or that damages are the direct result of specified explanatory variables. In *Comcast*, McClave's multiple regression analysis was designed to measure the aggregate and inseparable effect of explanatory variables representing four theories of antitrust impact against a benchmark control group consisting of non-class customers located outside of the Philadelphia DMA.[111]

According to Justice Scalia, the model was fatally misspecified because once three of the four asserted antitrust impacts were eliminated by the District Court, McClave's regression model could not isolate, distinguish and quantify incremental damages stemming from each individual theory of harm against a common standard establishing class-wide evidence of damages.[112] It was, in effect, an all-or-nothing proposition tied to four liability theories. The Court concluded (and McClave acknowledged) his model was not structured to be able to attribute damages solely to a single surviving theory, i.e., that clustering had an antitrust impact on "overbuild[ing] deterrence."[113] It was not constructed in modular fashion so as to be survivable in the face of battle damage, e.g., the loss of several theories in support of liability, a design flaw in the regression model.[114]

Judge Jordan's dissent from the Third Circuit's majority may turn out be the best guide to how expert reports, in a post-*Comcast* environment, should be prepared or defended. The mis-specification

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[110] *Id.* at 186.
[111] *Behrend*, 264 F.R.D. at 182; RICHARD A. DEFUSCO ET AL., QUANTITATIVE METHODS FOR INVESTMENT ANALYSIS 298-302 (2001).
[112] *Comcast*, 133 S. Ct. at 1434.
[113] *Id.* at 1434-35.
[114] *Id.* at 1435.

of McClave's regression model with respect to its ability to singularly support the "overbuilding" theory of damage, was explained straight-forwardly by Judge Jordan:

> [O]nce the antitrust impact of Comcast's clustering – i.e., the reduction in overbuilding – has been identified and accounted for as part of an overbuilding screen, any market share screen applied to isolate the "but for" conditions that would have prevailed in the Phila-delphia DMA should screen not just for Comcast's share, but for the share of whatever incumbent would have been present but for the clustering.[115]

Judge Jordan correctly went on to point out that:

> By calculating the appropriate market share screen us-ing only Comcast's average share through the Phila-delphia DMA, Dr. McClave has ignored any market share that, in the "but for" hypothetical world, would have been maintained by an incumbent other than Comcast . . . . McClave should have calculated dam-ages by comparing Comcast's current share to the "but for" share that would have been held by any incum-bents Comcast replaced. Because he instead effective-ly calculated damages by comparing Comcast's cur-rent share to Comcast's zero percent share prior to the class period, he unfairly suppressed the relevant in-cumbent share and artificially inflated the damages calculation.[116]

This was the fatal flaw in the McClave Report. In statistical terminology, the Report mis-specified the econometric methodology appropriate to the causal theory of liability. This error caused a sig-nificant variable to be omitted from the subsequent multivariate re-gression, compromising its survivability at the certification stage.

McClave did not include any variable to account for any cable price impact in the Philadelphia DMA that could have resulted from

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[115] *Comcast*, 655 F.3d at 220 (Jordan, J., dissenting). There is no requirement that an ex-pert proffer only a single theory of liability, nor a theory which could survive even it were criticized as to some component theory, hypothesis or calculation, particularly some section of the theory were made contingent of some particular fact-finding by the court or arbitral panel.

[116] *Id.* at 221.

market share established and maintained by an incumbent, which would have to have been conceptually, not statistically, distinguished from any incremental cable price attributable to Comcast's conduct. This omission, at the causal modeling stage of the case, prevented McClave's regression from being able to plausibly measure damage attributable to Comcast, specific to the class and, in particular, the Philadelphia DMA. The McClave regression model, because it was not modular in construction, was not designed to survive "battle damage" during the certification, effectively a design flaw that proved fatal, as Judge Jordan explained:

> Because none of Dr. McClave's screens reflect the conditions that would have prevailed in the Philadelphia DMA "but for" any reduction in overbuilding, the damages Dr. McClave calculated are 'not the certain result of the wrong'. . . . Accordingly, Dr. McClave's opinion cannot help a jury determine damages, and so would be inadmissible at trial for lacking fit.[117]

The regression model should have included a control variable to account for causal factors that implied a pre-existing price impact by incumbents. Had such a variable been included, it would have enabled McClave's regression model to isolate the incremental (post-incumbent) impact on "overbuilders," attributable to Comcast's "clustering." This was a shortcoming of the causal model's design, and it compromised methodology.

Judge Jordan correctly pointed out problems with Dr. McClave's screens,[118] which, he concluded "call into question not only the amount of damages but also whether there are any means of proving damages at all in thirteen of the eighteen Philadelphia DMA counties."[119]

As he explained, if the McClave model was not a relevant means of calculating class-wide damages, saying the "model might be fixed . . . is no better than saying that Plaintiffs have made 'a threshold showing' of predominance or . . . [an] 'intention to try the case in a manner that satisfies the predominance requirement.' "[120] Plaintiffs, however, had "the burden of establishing predominance

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[117] *Id.*

[118] In statistical jargon, mis-specifications of the regression model.

[119] *Comcast*, 655 F.3d at 221 n.28 (Jordan, J., dissenting).

[120] *Id.*

and, until they have actually proffered a model that shows how damages can be calculated on a class-wide basis" by common proof, that burden was not met.[121] The only evidence the class offered, he urged, should have been held inadmissible.[122]

Judge Jordan explained that it is not the court's job to invite plaintiffs to return with a more robust methodology that might satisfy the demands of Rule 23 when they fail to provide a measure that lives up to the applicable standard.[123] In this respect, *Comcast* is not a game-changing decision, but it does provide a good example of "raising the bar" as to just how rigorous judicial inquiry will be to try to determine what evidence of alleged antitrust impact really shows, and what evidence should be deemed admissible to satisfy class certification requisites.

Judge Jordan sharply criticized the Third Circuit majority, observing that the "Majority's willingness to overlook the debilitating flaws in Dr. McClave's model in an effort to avoid an 'attack on the merits,' is precisely the kind [of] talismanic invocation of 'concern for merits-avoidance' that *Hydrogen Peroxide* forbids."[124] His criticism focuses on the causal hypothesis McClave's regression model was designed to support, as well as its inability to measure the degree of price variation in the Philadelphia DMA attributable to overbuilding deterrence.[125] The model's defects, he reasoned, would not permit a proper imputation of an antitrust impact under the only theory available and, for that reason, could not properly measure the damage attributable to Comcast's alleged "clustering."[126]

Jordan's criticism is directed primarily to methodology, not measurement, but neither his, nor Justice Scalia's, analyses usurp the trial court's fact-finding function.

To use an analogy, rather than allowing the trial court to conduct a test flight, it grounds McClave's craft for design flaws with respect to satisfying the requirement that plaintiff be able to measure damages on a class-wide basis, attributable to the sole surviving impact theory of overbuilding deterrence, a flaw of McClave's Report that could have been avoided at the "design" stage, or remedied along

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[121]   *Id.*
[122]   *Id.*
[123]   *Id.*
[124]   *Comcast*, 655 F.3d at 221 n.28 (Jordan, J., dissenting).
[125]   *Id.* at 218.
[126]   *Id.*

the way. The defects are, in fact, problems in the report's causal modeling, not its statistical analysis. Because a critical explanatory variable could not be isolated by the model, it was defective.

The requirement that plaintiff demonstrate an ability to measure class-wide damages by common proof is inherently more robust than just establishing that damage must exist. The certification inquiry into whether Plaintiff has proffered a method for measuring damage on a class-wide basis entails a rigorous analysis as to whether such methodology is plausibly capable of quantifying the damages the trial court will be asked to award, if liability is proven.

It is important to understand what damage models, post-*Comcast*, might look like.

McClave could have developed four regression models, one for each theory of liability, with the assumption and risk that competing theories of liability might be declared inadmissible. Under such a single-theory framework, a benchmark control group would represent a non-class population enjoying expanded basic cable service, at a price unaffected by the alleged theory of anticompetitive conduct. For example, applicable to the overbuilding deterrence theory, McClave's overbuilding model might have sought to define a benchmark group enjoying competitively-priced expanded basic cable service, within non-clustered markets, undeterred by overbuilders. Such a model would seek to measure the difference in price for expanded basic cable service as a consequence of clustering and a dearth of overbuilders.

McClave could also have directly modeled overbuilding frequency across markets, adjusting for ordinary variables such as median income. By seeking to directly model, specify and isolate the underlying liability theory, a single-theory framework would offer a tractable means to model a particular theory, insofar as other theories are either lacking, or dismissed as lacking, substance.

McClave's approach might also have been overhauled to better substantiate explanatory variables for alternate theories of liability. Such an approach would be more complex than a single theory framework and would require a stronger conviction that multiple theories have substantive impact on estimated damages. Properly specified, such a model would offer promise for developing a *modular* approach to modeling damages that implicitly ranks, and potentially adjudicates, multiple theories of liability, one or more of which might survive.

A modular damages model would control for differences between a suitable benchmark control group(s) and the affected class. However, it would require additional modeling effort to segment and attribute explanatory variables according to one or more theories of economic impact that fit the facts, isolating and explaining damages, tying them causally to one or more theories of impact, with each theory mapping to one or more explanatory variables, while retaining a multi-regression model structure.

Statistically, an explanatory variable(s) tied to a theory of impact, has an associated and mutually exclusive *coefficient of partial determination* measuring the marginal contribution of each theory to the overall damages estimate.[127] This allows for a ranked and modular approach to damage modeling in which one or more explanatory variables can be excluded, while allowing for a refreshed estimate of the damages in the event one or more explanatory variables are discarded. Restated, the model may still be survivable, even if one or more underlying theories are rejected, so long as the surviving explanatory variable(s), through common evidence, are able to prove class-wide damages.

Applicable to explanatory variables drawn from time series-based data sets,[128] a statistical test known as "Granger causality," can be applied to ascertain whether theories related to changes over time in a variable, substantively cause a common impact, with measurable damages.[129] The Granger causality test is applied to lagged values,[130] of the explanatory variables(s),[131] and can be useful to prove or disprove statistical significance about impact theories and causality damages. The rejected impact theory of clustering based on DBS

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[127] A "coefficient of partial determination" is the proportionate reduction in the explained variance of the dependent variable upon adding a new independent variable to a multiple regression model.

[128] The phrase "series-based-data-sets" refers to data that is organized chronologically over a period of time at a specified frequency interval, e.g., daily or monthly.

[129] Effectively, this is an event's "ripple effect."

[130] A "lagged" value is one measured after the event represented by an explanatory variable has occurred. Here, in using time-series data, rather than impact being treated as instant, it is treated as being evidenced after a time delay.

[131] Granger causality is a statistical hypothesis test for determining whether one time series is useful in forecasting another. Regressions normally reflect correlations, but Granger argued some tests reveal something about causality. A time series *X* is said to Granger-cause *Y* if it can be shown, through a series of T-tests and F-tests on lagged values of *X* (and with lagged values of *Y* also included), that those *X* values provide statistically significant information about future values of *Y*.

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foreclosure could have been reformulated as a Granger causality model to demonstrate a time-lagged cause and effect from Comcast denying access to regional sports programming to DBS competitors and a delayed reduction in DBS penetration rates. Identification of this time-lagged cause and effect might have allowed the DBS foreclosure theory to survive. Notably, the District Court cited, as one form of inadmissible proof, that Comcast's decision to not license CSB Philadelphia to DBS providers, which occurred before the class period, despite the potential for a lagged theory of impact, occurred during the class period.

McClave's regression model might, therefore, have been recast as a modular damages model, with explanatory variables mapping back to each of the four original liability theories, but the task of identifying incremental explanatory variables for each liability theory could have been arduous and subject to multicollinearity,[132] or interaction effects, similar to what McClave suspected occurred for population density and number of households. It might have been worth the effort if redundant theories could have been consolidated, or observed multicollinearity among theories dealt with, before court review. When the District Court discarded three of the four theories, a modular damages model would have simply dropped explanatory variables associated with the discarded theories, streamlining the model, and, as such, a modular damages model could plausibly have survived in *Comcast*.

III.   CONCLUSIONS

What characteristics should an expert report possess to optimize the chance it will be deemed to show common questions predominate over individual issues? How should defense and plaintiffs' counsel approach these issues after *Comcast*?

Comcast raises the bar with respect to the difficulty of satisfying the "rigorous analysis" standard attendant class certification, but it is no game-changing decision. The District Court and Third Circuit majority, as well as Justice Ginsburg and the other Justices in dissent,

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[132]   "Multicollinearity" is a statistical phenomenon in which two or more predictor variables in a multiple regression model are highly correlated, meaning that one can be linearly predicted from the others with a non-trivial degree of accuracy. Multicollinearity does not reduce the predictive power or reliability of the model as a whole, at least within the sample data themselves; it only affects calculations regarding individual predictors.

concluded Plaintiffs had nudged their claims across the line, from conceivable to plausible.

Justice Scalia, applying settled rules, viewed the matter differently.

The concept of plausibility applies to both proffered liability theory and, also, to plaintiff's proffered methodology to prove antitrust impact. It also applies to Plaintiffs' quantification of class-wide damages, by common evidence. To survive "rigorous analysis," plaintiffs will need to have analyses that tie, at least plausibly, causal model theories to actual damages – *this is not proof of loss causation, but it's pretty clo*se.

The take-away from *Comcast* is that experts, and their damage models, must be prepared with survivability in mind—the assumption should be that some theories of antitrust impact will not survive dismissal, whether as a result of a causal-modeling defect, or a more statistically-driven problem. The multiple regression model in *Comcast* failed because it was not designed to survive "battle-damage." It might have done so, however, if it had been of a modular design, but plaintiffs antitrust-eggs were really all in one basket.

This never had to be the case. The statistical tools, including regression techniques, already exist and can achieve the level of refinement required by the standard *Comcast* represents. *Comcast* places attorneys, and their experts, on notice that all class litigation combatants, beginning at the trial court level, must rigorously critique and determine whether the causal arguments being proffered are merely conceivable, or actually plausible, and this is so, notwithstanding that, ultimately, a trier of fact, in a later proceeding will determine whether proximate causation actually exists. The specification of a damage model must, therefore, not merely satisfy class-wide applicability, but present a methodology plausibly measuring damages attendant all theories of liability, in the aggregate, as well for each theory, individually, even, as in *Comcast*, where certification came down to a single, surviving theory.