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11 **UNITED STATES DISTRICT COURT**
 12 **NORTHERN DISTRICT OF CALIFORNIA**
 13 **SAN JOSE DIVISION**
 14

15 IN RE HIGH-TECH EMPLOYEE
 ANTITRUST LITIGATION
 16 THIS DOCUMENT RELATES TO:
 17 ALL ACTIONS
 18
 19

Master Docket No. 11-CV-2509 LHK
**DEFENDANTS' NOTICE OF MOTION
 AND JOINT MOTION TO EXCLUDE
 THE EXPERT TESTIMONY OF
 EDWARD E. LEAMER, PH.D., AND
 MEMORANDUM OF POINTS AND
 AUTHORITIES IN SUPPORT
 THEREOF**

Date: March 20, 2014 and
 March 27, 2014
 Time: 1:30 p.m.
 Courtroom: 8, 4th Floor
 Judge: The Honorable Lucy H. Koh

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Dated: January 9, 2014

By: /s/ George A. Riley

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MEMORANDUM OF POINTS AND AUTHORITIES**I. INTRODUCTION**

Plaintiffs bear the burden of proving at trial that each class member was injured by the alleged conspiracy, as well as the amount of damages. To satisfy this burden, Plaintiffs seek to rely on Dr. Leamer's "conduct" regression analysis and corresponding expert testimony both to show classwide impact and to estimate class member damages. But Dr. Leamer's analysis suffers from four critical flaws that render his opinions unreliable and inadmissible. Thus, the testimony should be excluded in its entirety under *Daubert* and Federal Rule of Evidence 702.

First, by generally accepted standards that Dr. Leamer has applied in the past, his results are statistically meaningless. In previous reports and testimony, Dr. Leamer repeatedly extolled the results of certain analyses as having statistical significance at standard thresholds—for example, that there was no more than a 5% probability that the result occurred by chance. As he put it, "[Y]ou're happier when the statistical uncertainty is small." (Declaration of Christina Brown in Support of Defendants' Joint Motion to Exclude the Expert Testimony of Edward Leamer, PH.D ("Brown Decl.") Ex. 3, Leamer Dep. at 1036:9-24.)¹ Now he admits his impact and damages model does not meet these standard thresholds of statistical significance, meaning in his own words that it does not "yield accurate estimates." Ex. 7, Leamer May 2013 Rpt. ¶ 20; *see also* Ex. 4, Leamer Dep. at 1257:23-1258:2. He tries to paper over this fatal flaw by inventing for the first time in his Reply Report a new, easier to satisfy, 50% threshold of statistical significance. This threshold—which is equivalent to determining whether there were billions of dollars in damages by flipping a coin—is contrary to well-established statistical analysis and finds no precedent in law or science. With no support for his newly invented 50% threshold, Dr. Leamer is reduced to arguing that "[a]bsent a better estimate, we need to rely on the best we have." Ex. 8, Leamer Oct. 2013 Rpt. ¶ 26. But "I can't do any better" is not the test for the admissibility of expert testimony. Dr. Leamer's model fails the "exacting standards of reliability" required for admissible expert testimony. *Weisgram v. Marley Co.*, 528 U.S. 440, 455 (2000).

¹ All exhibit ("Ex.") references are to the Declaration of Christina J. Brown in Support of Defendants' Joint Motion to Exclude Expert Testimony of Edward E. Leamer, PH.D.

1 Second, Dr. Leamer admits that his model cannot distinguish between lawful and
2 allegedly unlawful restraints on recruiting during the class period and that the model finds impact
3 and assesses damages based on both together. This shortcoming violates the Supreme Court’s
4 requirement in *Comcast* that his model “measure *only* those damages attributable” to Plaintiffs’
5 liability theory. *Comcast Corp. v. Behrend*, 133 S. Ct. 1426, 1433 (2013) (emphasis added).

6 Third, Dr. Leamer’s “total new hires” variable, which drives his impact and damages
7 analysis, assumes each Defendant’s employees experienced the same impact regardless of
8 whether the Defendant was a party to one, two or three do-not-cold-call (“DNCC”) agreements.
9 This assumption is inconsistent with Plaintiffs’ theory of harm, which is that parties to a bilateral
10 DNCC agreement would see reduced cold calls as a result of that agreement, while Defendants
11 who are not parties to that agreement would not. Dr. Leamer’s model incorrectly fails to take into
12 account the number of DNCC agreements a party had and the magnitude of the allegedly reduced
13 recruiting activity. When these distinctions are properly introduced into his model, damages
14 disappear. By relying on a key variable that assumes this effect was the same across all
15 Defendants, Dr. Leamer’s model is not “consistent with [Plaintiffs’] liability case,” as required by
16 *Comcast. Id.*

17 Finally, while Dr. Leamer relies on his regression model to prove alleged impact, he
18 concedes it cannot show each class member was injured and cannot distinguish between any class
19 members who were injured and those who were not. Plaintiffs cannot use such a model to satisfy
20 their burden of proving classwide impact.

21 **II. DR. LEAMER’S OPINIONS FAIL TO MEET THE STANDARDS OF DAUBERT** 22 **AND FEDERAL RULE OF EVIDENCE 702**

23 Expert testimony is inadmissible unless it is “based on sufficient facts or data” and “the
24 product of reliable principles and methods” that the expert has “reliably applied . . . to the facts of
25 the case.” Fed. R. Evid. 702(b)-(d); *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 589
26 (1993) (expert testimony must be “not only relevant, but reliable”). To be reliable, the expert’s
27 testimony must reflect scientific knowledge, findings driven by the scientific method, and work
28 product that amounts to “good science.” *Daubert v. Merrell Dow Pharm., Inc.*, 43 F.3d 1311,

1 1315 (9th Cir. 1995) (“*Daubert II*”). Rule 702 and *Daubert* impose “exacting standards of
2 reliability,” *Weisgram*, 528 U.S. at 455, and require the trial court to perform a gatekeeping
3 function to exclude any expert opinion that fails to meet these standards. *Kumho Tire Co. v.*
4 *Carmichael*, 526 U.S. 137, 141 (1999). Plaintiffs have the burden of proving its admissibility by
5 a preponderance of the evidence. *MySpace, Inc. v. Graphon Corp.*, 756 F. Supp. 2d 1218, 1234
6 (N.D. Cal. 2010).

7 **A. Plaintiffs Rely on Dr. Leamer’s Fatally Flawed Regression Model to Prove**
8 **Impact to All Class Members and to Estimate Damages.**

9 To prove their antitrust claims, Plaintiffs must establish (1) a violation of the antitrust
10 laws; (2) individual injury resulting from that violation (antitrust impact); and (3) measurable
11 damages. See *In re Hydrogen Peroxide Antitrust Litig.*, 552 F.3d 305, 311 (3d Cir. 2008); *In re*
12 *Aftermarket Auto. Lighting Prods. Antitrust Litig.*, 276 F.R.D. 364, 368 (C.D. Cal. 2011).
13 Plaintiffs must make a greater showing at trial than at the class-certification stage, where they
14 only needed to show that “common evidence and common methodology could be used to prove
15 the elements of the underlying cause of action.” (Order Granting Mot. for Class Cert., Dkt. 531,
16 at 24.) To prevail on the merits, Plaintiffs must now actually prove that every member of the
17 class was injured by the alleged violation. *Hydrogen Peroxide*, 552 F.3d at 311. Calculating the
18 total amount of damages the class as a whole allegedly suffered is not sufficient. “The ability to
19 calculate the aggregate amount of damages . . . does not absolve plaintiffs from the duty to prove
20 each [class member] was harmed by the defendants’ practices.” *In re New Motor Vehicles*
21 *Canadian Exp. Antitrust Litig.*, 522 F.3d 6, 28 (1st Cir. 2008).

22 Plaintiffs rely on Dr. Leamer’s regression model both to show classwide impact and to
23 estimate the damages to class members. As Dr. Leamer has described it, his regression analysis is
24 a “methodology . . . for *showing impact* and calculating damages to the Defendants’ workforces
25 as a whole” Ex. 8, Leamer Oct. 2013 Rpt. ¶ 2 (emphasis added). When asked whether an
26 alleged reduction in cold calls actually slowed the price discovery process, Dr. Leamer testified
27 that he “will leave that to the regression . . . and will go to the data to decide whether it’s actually
28 there.” Ex. 1, Leamer Dep. at 413:25-414:7. While he speculates that the absence of some cold

1 calls could have restricted information flow, he insists “we’re going to have to ultimately fall
2 back on regression models to determine the impact.” *Id.* at 429:7-16.

3 **B. Dr. Leamer’s Model Is Unreliable Because It Produces Large Standard**
4 **Errors and Relies on a 50% Threshold to Determine Statistical Significance**
5 **That Is Equivalent to Flipping a Coin.**

6 A regression model is a statistical method for using data to predict or estimate the average
7 relationship between a “dependent” variable and one or more “independent” variables.

8 Dr. Leamer’s regression model purports to measure the average effect of the six challenged
9 DNCC agreements on compensation, holding other compensation-related variables constant.²

10 The centerpiece of Dr. Leamer’s model is his general “conduct” variable that purports to
11 measure the impact of the challenged DNCC agreements, holding other compensation-related
12 variables constant. This variable does not actually measure anything specific to the alleged
13 conduct at issue—such as the number of cold calls or the amount of information flow. Instead,
14 the “conduct” variable is simply an “indicator” or “dummy” variable that is “turned on” when the
15 challenged agreements were in effect. Thus, the conduct variable does nothing more than
16 measure whatever changes in compensation are not attributed to the other compensation-related
17 independent variables, regardless of what caused those changes.

18 A regression model’s reliability depends on whether it can estimate with a reasonable
19 degree of certainty the relationship between the variables; here, the average effect of the
20 challenged DNCC agreements on employee compensation. Economists examine the statistical
21 significance of their estimates to determine whether the results are sufficient to reject the
22 so-called “null hypothesis” (here, that the agreements had no impact on compensation). *See*
23 Leamer Dep. 1038:5-1039:18. If there is less than an X% probability the observed outcome (or

24 ² Specifically, the model attempts to estimate the average relationship between compensation (the
25 dependent variable) and the challenged DNCC agreements using what he calls “conduct
26 variables,” taking into account the effects of other variables that he says are related to
27 compensation. Ex. 8, Leamer Oct. 2013 Rpt. ¶ 19 & Exs. 2-3. The model has four “conduct”
28 variables. The most “critical” is the general conduct variable, which is primarily responsible for
Dr. Leamer’s estimated impact and damages. Ex. 3, Leamer Dep. 1044:12-17 (referring to the
conduct coefficient as the “critical coefficient”). The model also includes variables representing
the “interaction” between this general conduct variable and employee age, employee age squared,
and the hiring rate at the employee’s firm. *See* Ex. 5, Leamer Oct. 2012 Rpt. ¶¶ 141-148 & Figs.
23-24; Ex. 8, Leamer Oct. 2013 Rpt. ¶¶ 2, 20-21 & Exs. 2-3.

1 more extreme outcome) would have occurred simply due to chance, given the null hypothesis
2 (that the agreements have no impact), then the null hypothesis can be rejected at the X% level. If
3 there is more than X% probability that the result occurred by chance, the null hypothesis cannot
4 be rejected. Standard scientific practice is to set “X%”, the statistical significance threshold, at
5 1%, 5%, or (most leniently) at 10% *before* performing any analysis to avoid the situation in which
6 the researcher inflates the statistical significance threshold to mask the unreliability of the
7 findings. Only where a model’s results are statistically significant at the selected significance
8 level is it appropriate to reject the null hypothesis—here, to reject the hypothesis that the
9 agreements had no impact on compensation. *See* Stiroh Decl. ¶ 3.

10 The smaller the significance level, the greater the confidence that the null hypothesis has
11 been correctly rejected. If the estimate is statistically significant at a 5% level, there is no more
12 than 5% probability of wrongly finding an effect—that is, there is no more than 5% likelihood
13 one would observe the alleged impact or damages estimate (or a bigger estimate) merely by
14 chance. Generally accepted statistical doctrine—and Dr. Leamer’s own writings in this case and
15 elsewhere—holds that an estimate is not likely to be meaningful unless it is statistically
16 significant at the 10% level. As Dr. Leamer explains, a statistical estimate that is less reliable
17 than the 10% significance level is “not distinguishable from zero [the null hypothesis of no
18 effect].” Ex. 7, Leamer May 2013 Rpt. ¶ 20.

19 When reporting his model’s results, Dr. Leamer indicates whether they are statistically
20 significant at the 1%, 5%, and 10% levels. *See, e.g.*, Ex. 8, Leamer Oct. 2013 Rpt. Exs. 2-3.
21 Indeed, from the time he submitted his first expert report in October 2012, Dr. Leamer has
22 repeatedly relied on the statistical significance of his various analyses at the 1%, 5%, or 10%
23 levels. *E.g.*, Ex. 5, Leamer Oct. 2012 Rpt. Figs. 20 & 23; Ex. 6, Leamer Dec. 2012 Rpt. Figs. 12,
24 14 & 16-19; Ex. 7, Leamer May 2013 Rpt. Figs. 4-5 & 8; Ex. 8, Leamer Oct. 2013 Rpt. Exs. 2-6.
25 Notably, the analyses he claims support his theory of classwide impact expressly relied on a
26 “competition for statistical significance” among different variables. Ex. 5, Leamer May 2013
27 Rpt. ¶¶ 35-38, 47.

28 On the other hand, Dr. Leamer has judged results that did not meet the 10% level

1 “statistically insignificant,” “not distinguishable from zero,” and unable to “yield accurate
 2 estimates.” Ex. 5, Leamer May 2013 Rpt. ¶ 20; Ex. 2, Leamer Dep. at 593:2-3. He rejected
 3 results proffered by Defendants’ experts that were contrary to his opinions because only “a small
 4 fraction” were statistically significant at the 10% level or below. Ex. 5, Leamer May 2013 Rpt. ¶
 5 37. In analyzing his correlation results for Adobe at the job title level, for example, he excluded
 6 titles with five or fewer years of data, because “correlations based on 5 or fewer observations are
 7 often statistically insignificant.” *Id.* ¶ 52. He explained: “Titles that have fewer annual
 8 observations tend to produce what statisticians call ‘statistically insignificant’ results, meaning
 9 the data sets are too small *to yield accurate estimates.*” *Id.* ¶ 20 (emphasis added). Nevertheless,
 10 having repeatedly embraced standard levels of statistical significance in this case, Dr. Leamer
 11 reverses course when attempting to defend his new 50% threshold for his regression results: “I
 12 have never depended on ‘statistical significance’ to support my conclusions in this case.” Ex. 9,
 13 Leamer Dec. 2013 Rpt. ¶ 90.

14 **1. Dr. Leamer’s General Conduct Variable—the Independent Variable**
 15 **That Allegedly Indicates Impact and Measures Damages—Lacks**
 16 **Statistical Significance and Reliability.**

17 The general conduct variable is “critical” to Dr. Leamer’s model; as he acknowledges, it is
 18 the variable that drives the overwhelming share of damages. Leamer Dep. 1044:12-17. Yet
 19 Dr. Leamer concedes this “critical” conduct coefficient has a “large standard error” (essentially, a
 20 large statistical margin of error) and is therefore not statistically significant at the 1%, 5%, or 10%
 21 levels that he reports. Ex. 3, Leamer Dep. 1044:7-21, 1257:23-1258:2; *see also* Stiroh Decl. ¶ 4.
 22 The same is true of the coefficient on the conduct variable “interacted with” (i.e., multiplied by)
 23 the hiring rate per Defendant firm. Ex. 3, Leamer Dep. 1044:7-21.

24 Standard errors determine statistical significance, which as discussed above, indicates
 25 whether a model provides statistically reliable evidence that the true value of an estimate is
 26 different from zero. Stiroh Decl. ¶ 3. As Dr. Leamer explained, “that’s another way of
 27 characterizing how much uncertainty there is in that particular coefficient . . . [a]nd you’re
 28 happier when the statistical uncertainty is small.” Ex. 3, Leamer Dep. 1036:9-24. That Dr.
 Leamer’s conduct variables have a large statistical uncertainty indicates his model has not been

1 able to estimate those variables with sufficiently reasonable precision to conclude their true
2 value—or the impact of the challenged agreements—is different from zero. Stiroh Decl. ¶ 4.

3 Dr. Leamer admits the large standard errors and lack of statistical significance are critical
4 flaws in his analysis. Yet he attempts to excuse them because the model is the “best” he could
5 produce. In his October 2013 report, Dr. Leamer defended his results as follows:

6 A damage estimate with a large standard error will still be the best estimate, unless
7 there is a more accurate alternative. While a large standard error means that the
8 damages could be smaller, that same large standard error also means the damages
could equally well be larger by the same amount. Absent a better estimate, *we*
need to rely on the best we have.

9 Ex. 8, Leamer Oct. 2013 Rpt. ¶ 26 (emphasis added). Similarly, Dr. Leamer testified at his
10 deposition that if a damages estimate “happens to have a large standard error and is still the best
11 estimate, you’re going to have to live with what is provided.” Leamer Dep. 1034:3-20.

12 The rules of evidence do not allow the jury to “live with” Dr. Leamer’s statistical
13 “uncertainty” resulting in billions in alleged damages because he has nothing “better” to offer.
14 To be admissible, expert testimony must meet “exacting standards of reliability.” *Weisgram*, 528
15 U.S. at 455; *Daubert II*, 43 F.3d at 1315-16 (expert testimony must be “good science,” and an
16 opinion’s high error rate supports its exclusion.). To simply be the best the expert can do is not
17 enough; if it were, *Daubert*’s gatekeeping requirement would be meaningless. Expert opinions
18 based on large standard errors and statistically insignificant results are inadmissible as failing this
19 standard of reliability. *See, e.g., In re Silicone Gel Breast Implants Prods. Liab. Litig.*, 318 F.
20 Supp. 2d 879, 897-98 (C.D. Cal. 2004) (finding inadmissible expert’s epidemiological evidence
21 that implants were carcinogenic where his study had a large margin of error at the 95%
22 confidence level, “render[ing] those findings meaningless for purposes of proving or disproving
23 causation in a court of law”); *Henricksen v. ConocoPhillips Co.*, 605 F. Supp. 2d 1142, 1168
24 (E.D. Wash. 2009) (excluding expert testimony regarding chemical exposure based on studies
25 with small sample sizes and large potential rates of error); *cf. In re Bextra & Celebrex Mktg. Sales*
26 *Practices & Prod. Liab. Litig.*, 524 F. Supp. 2d 1166, 1181 (N.D. Cal. 2007) (admitting expert
27 testimony that drug could cause heart attacks or strokes at certain doses because his study
28 demonstrated a “statistically significant risk”). Dr. Leamer’s admission that his model’s

1 independent variable that drives both impact and damages is not statistically significant—or, in
2 his words, capable of “yield[ing] accurate estimates”—requires exclusion of his testimony.

3 **2. The Court Should Reject Dr. Leamer’s Attempt to Justify His**
4 **Unreliable Results Based on His New 50% Significance Threshold.**

5 Dr. Leamer attempts to salvage his model by proposing for the first time in his December
6 2013 Reply Report an entirely new 50% threshold for statistical significance. At this threshold,
7 one is willing to reject the null hypothesis that the agreements had no impact when there is as
8 much as a 50% likelihood that one would observe the results of his regression model merely by
9 chance. Ex. 9, Leamer Dec. 2013 Rpt. ¶ 86. In other words, he is willing to find billions of
10 dollars in damages with a degree of statistical confidence that is no more reliable than if the same
11 determination had been made by flipping a coin. It amounts to essentially no statistical test at all.
12 Stiroh Decl. ¶ 6.

13 Dr. Leamer’s unorthodox new 50% significance threshold contradicts standard economic
14 practice and lacks any support in his own or anyone else’s work that he could cite. Using a 50%
15 threshold for statistical significance is counter to the best practice of the scientific community and
16 “contrary to the standard practice for published and peer-reviewed economic literature.” Stiroh
17 Decl. ¶ 6. Dr. Leamer was unable to identify any economist who has ever endorsed the use of a
18 50% significance level under any circumstances. Ex. 4, Leamer Dep. 1256:7-11 (“Q: Are you
19 aware of any other study or any literature that endorses the use of a significance level of 50
20 percent for type I error? A: Off the top of my head, I’m not familiar with one, no.”). Nor could
21 Dr. Leamer identify any other instance in which he has used a 50% significance approach. Ex. 4,
22 Leamer Dep. 1260:23-1261:4. This peer review vacuum fails the *Daubert* test. An expert’s
23 analysis should be “supported by the typical *Daubert* factors—testing, peer review and general
24 acceptance.” *Wagner v. Cnty. of Maricopa*, 673 F.3d 977, 982 (9th Cir. 2012).

25 In his own academic work, Dr. Leamer acknowledges that a 50% significance level is akin
26 to flipping a coin. Ex. 10, Edward E. Leamer, *Specification Searches: Ad Hoc Inference with*
27 *Nonexperimental Data* 94 (1978) (“Flipping a coin to decide whether to [reject one’s hypothesis]
28 implies $\alpha = \beta = .5$ ” where α refers to the probability of wrongly rejecting a null hypothesis that is

1 actually true). To properly admit expert testimony, a court must determine that the expert
 2 “employs in the courtroom the same level of intellectual rigor that characterizes the practice of an
 3 expert in the relevant field.” *Kumho Tire*, 526 U.S. at 152; *see also Daubert II*, 43 F.3d at 1317
 4 (“One very significant fact to be considered is whether the experts are proposing to testify about
 5 matters growing naturally and directly out of research they have conducted independent of the
 6 litigation, or whether they have developed their opinions expressly for purposes of testifying.”).
 7 An expert’s opinion is thus not reliable if the expert is not “being as careful as he would in his
 8 regular professional work outside his paid litigation consulting.” *Sheehan v. Daily Racing Form,*
 9 *Inc.*, 104 F.3d 940, 942 (7th Cir. 1997). Dr. Leamer’s contrived 50% significance threshold does
 10 not satisfy this standard.³

11 In contrast, the 1%, 5%, and 10% thresholds Dr. Leamer has used in every other report
 12 submitted in this case are consistent with standard economic practice. Stiroh Decl. ¶ 5; *ATA*
 13 *Airlines, Inc. v. Fed. Express Corp.*, 665 F.3d 882, 895 (7th Cir. 2011) (noting that a 95%
 14 confidence interval—which reflects a statistical significance level of 5%—is “the standard
 15 criterion of reasonable confidence used by statisticians”); *Contreras v. City of L.A.*, 656 F.2d
 16 1267, 1273 n.3 (9th Cir. 1981) (“A .05 level of statistical significance indicates that the
 17 demonstrated relationship between the variables would occur in a random sample five times out
 18 of one hundred and is generally recognized as the point at which statisticians draw conclusions
 19 from statistical data.”); Federal Judicial Center, *Reference Manual on Scientific Evidence* 252-52
 20 (3d ed. 2011) (statistical analysts typically use significance levels of 5% and 1%). Dr. Leamer’s
 21 50% significance level was “conceived, executed, and invented solely in the context of th[e]
 22 litigation,” and so is paradigm inadmissible junk science. *Johnson v. Manitowoc Boom Trucks,*

23 _____
 24 ³This fatal problem arose from Dr. Murphy’s criticism that Dr. Leamer failed to “cluster” the
 25 standard errors in his regression model, which Dr. Leamer at first dismissed but now concedes
 26 “has validity.” Ex. 7, Leamer Oct. 2013 Rpt. ¶ 27. The Court previously stated “[that] the
 27 Conduct Regression’s results are not statistically significant at the 95% level [with clustered
 28 errors] does not persuade the Court that the regression is inadmissible (though this failure might
 affect the model’s probative value).” 4/5/13 Class Cert. Order at 42. However, Dr. Leamer now
 admits the results are not significant at *any* standard level on which he and all other statisticians
 rely. The Court “encouraged” Dr. Leamer to address the clustering problem. *Id.* at 42-43 n.15.
 His only response is to try to change the rules of statistical significance to avoid a finding that his
 model is unreliable.

1 *Inc.*, 484 F.3d 426, 434-35 (6th Cir. 2007).

2 Dr. Leamer tries to defend his proposed 50% threshold because “[w]ith this significance
3 level there is a relatively small 6% chance of deciding in the favor [of] the defense *if actual*
4 *damages were 10%.*” Ex. 9, Leamer Dec. 2013 Rep. ¶ 86 (emphasis added). But this requires a
5 baseline assumption of 10% undercompensation in the first place. *See* Ex. 3, Leamer Dep. at
6 1037:14-16 (“the question isn’t whether there’s zero damages; the question is how large they
7 are”). Dr. Leamer cannot rely on his model to prove there are billions in damages while
8 simultaneously building the model on the assumption that there are billions in damages.
9 “Obviously, a model cannot be used to prove one of its basic assumptions.” *In re TFT-LCD (Flat*
10 *Panel) Antitrust Litig.*, 2012 U.S. Dist. LEXIS 21696, at *39 (N.D. Cal. Feb. 21, 2012);
11 *Craftsmen Limousine, Inc. v. Ford Motor Co.*, 363 F.3d 761, 777 (8th Cir. 2004) (expert report
12 admitted in error where it assumed its conclusion and failed to analyze relevant factors). Dr.
13 Leamer’s assumption that damages were 10% deviates fundamentally from the accepted null
14 hypothesis of zero, or no impact from the DNCC agreements. Stiroh Decl. ¶ 7; Ex. 3, Leamer
15 Dep. at 1037:10-1038:4. Indeed, Dr. Leamer acknowledges that in his prior reports, he followed
16 this standard scientific practice and calculated significance levels setting the null hypothesis to
17 zero. Ex. 3, Leamer Dep. at 1038:5-19.

18 Dr. Leamer describes his regression model, with its large standard errors and lack of
19 statistical significance at any defensible level, as the “best estimate” he can provide. Ex. 8,
20 Leamer Oct. 2013 Rpt. ¶ 26. But this unreliable model and Dr. Leamer’s opinions regarding
21 impact and damages fail to meet the stringent standards of *Daubert* and Rule 702 and must be
22 excluded. A jury cannot be permitted to make a finding of impact and damages against
23 Defendants based on a flip of the coin.

24 **C. Dr. Leamer’s Model Cannot Distinguish Between Alleged Impact from the**
25 **Challenged Agreements and from Conduct That Is Not at Issue.**

26 Dr. Leamer’s model fails *Comcast’s* requirement that it “measure only those damages
27 attributable” to Plaintiffs’ theory of liability, 133 S. Ct. at 1433, because it is incapable of
28 segregating the alleged impact on compensation attributable to the challenged DNCC agreements

1 from the effects on compensation attributable to other factors not at issue here. Because the
2 conduct variable is simply turned on when the challenged agreements were in effect (and turned
3 off when they were not), it measures the aggregate effects on compensation of any events and
4 circumstances not otherwise controlled for by the model. Stiroh Decl. ¶ 14. As Dr. Leamer
5 admits, the conduct variable “will pick up anything that is applicable to that period of time when
6 the thing is turned on.” Ex. 1, Leamer Dep. at 329:11-25. These include macroeconomic and
7 microeconomic effects, as well as the effect of other DNCC agreements and practices that are not
8 challenged here.

9 The Ninth Circuit has held that antitrust plaintiffs are required to “segregate damages
10 attributable to lawful competition from damages attributable to” a defendant’s alleged unlawful
11 conduct. *Image Tech. Servs., Inc. v. Eastman Kodak Co.*, 125 F.3d 1195, 1224 (9th Cir. 1997).
12 Other courts have reached this same conclusion.⁴ Yet by his own admissions, Dr. Leamer’s
13 model fails this requirement. For example, Dr. Leamer’s model cannot distinguish between the
14 alleged effect of the challenged DNCC agreements and other restrictions on cold calling that were
15 the product of concededly lawful agreements or unilateral policies during the class period.
16 Several defendants had other DNCC practices or agreements in place during the class period that
17 Plaintiffs do not claim were unlawful. For example, Intel had unchallenged (admittedly lawful)
18 no-recruiting agreements with Apple and Pixar that began during the class period and ended
19 contemporaneously with it. Ex. 11, Conrad Dep. at 82:4-83:3, 109:22-111:4; Ex. 12, Prajapati
20 Dep. at 79:15-81:21, 149:7-162:14, 246:4-20. Google adopted DNCC policies with respect to
21 two non-defendant companies effective January 20, 2006. Ex. 13, GOOG-HIGH-TECH-

22 ⁴See e.g., *Concord Boat Corp. v. Brunswick Corp.*, 207 F.3d 1039, 1056-57 (8th Cir. 2000)
23 (expert testimony should have been excluded; “[t]he model . . . failed to account for market
24 events that both sides agreed were not related to any anticompetitive conduct”); *In re Brand
25 Name Prescription Drugs Antitrust Litig.*, 186 F.3d 781, 786 (7th Cir. 1999) (“to obtain damages
26 the plaintiffs would have to separate the price effects of collusion from the price effects of the
27 defendants’ lawful market power”); *Blue Cross & Blue Shield United v. Marshfield Clinic*, 152
28 F.3d 588, 593 (7th Cir. 1998) (“Statistical studies that fail to correct for salient factors, not
attributable to the defendant’s misconduct, that may have caused the harm of which the plaintiff
is complaining do not provide a rational basis for a judgment.”); *In re REMEC Inc. Sec. Litig.*,
702 F. Supp. 2d 1202, 1273 (S.D. Cal. 2010) (excluding expert’s regression model in part
because it did not account for other possible causes of the alleged harm, including
macroeconomic effects).

1 00000076. Google suspended these policies along with its other DNCC practices after receiving
 2 the DOJ's civil investigative demand in 2009. *See* Ex. 14, GOOG-HIGH-TECH-00057353.
 3 Under Dr. Leamer's theory that a reduction in cold calling leads to reduced compensation, these
 4 agreements and policies would also have had this effect and would be measured by his model and
 5 included in his damages estimate for the class period. Yet his model cannot distinguish between
 6 the effects of the challenged DNCC agreements and these other unchallenged agreements and
 7 practices that were coterminous with the class period. Stiroh Decl. ¶ 16. Dr. Leamer concedes
 8 this shortcoming. Ex. 1, Leamer Dep. at 340:6-15 (“[t]o the extent these [other restrictions] are
 9 coincident in time with . . . these [challenged] bilateral agreements they had, and to the extent that
 10 they suppress wages during that period of time, it's going to be picked up by the conduct variable
 11 unless there's some other control in the equation that accounts for that . . .”). Dr. Leamer could
 12 not say how much of this unchallenged conduct his model is improperly counting as damages. *Id.*
 13 at 340:16-20.⁵ Because the model fails to disaggregate lawful from unlawful effects, it is
 14 unreliable and inadmissible. *See Concord Boat*, 207 F.3d at 1056-57; *Brand Name*, 186 F.3d at
 15 786.

16 **D. Dr. Leamer's Total New Hires Variable Is Inconsistent with Plaintiffs'**
 17 **Theory of Harm.**

18 Plaintiffs' theory of the case is that the bilateral DNCC agreements restricted the amount
 19 of recruiting activity, and thus the amount of compensation information, that would otherwise
 20 flow between the parties to those agreements. Defendant pairs who were not parties to a DNCC
 21 faced no limitations on the amount of compensation information flowing between them.
 22 Dr. Leamer admits each Defendant was free to cold call every other Defendant with which it had
 23 no bilateral DNCC agreement. Ex. 3, Leamer Dep. at 873:9-13, 875:13-876:3. Accordingly,

24 _____
 25 ⁵ Dr. Leamer's model also cannot isolate the impact of the DNCC agreements on compensation
 26 from other significant events during the class period. For example, his model estimates include
 27 the impact of the 2008-2009 recession, which would have negatively impacted compensation.
 28 Stiroh Decl. ¶ 15. When Dr. Stiroh accounts for this, using a technique that Dr. Leamer used in
 his initial report, the alleged damages produced by the model are reduced by more than half—
 thus indicating that these recession years contribute to more than half of Dr. Leamer's alleged
 damages estimate. *Id.* Dr. Leamer's model likewise cannot isolate or account for the effects of
 Defendants' different responses to the recession in setting compensation. *Id.*

1 under Plaintiffs' theory the impact of a Defendant's increased recruiting and hiring (for whatever
2 reason) on another Defendant would depend on whether there was a DNCC agreement between
3 those two firms. Thus, under this theory, the impact of an increase in recruiting and hiring
4 activity at Intel would be different with respect to an employee at Google (which had a DNCC
5 with Intel) than it would be for an employee at Adobe (which did not have a DNCC with Intel).

6 Dr. Leamer's model, however, is fundamentally at odds with Plaintiffs' theory of the
7 impact of the DNCC agreements. Dr. Leamer's model uses a "total new hires variable" that is the
8 sum of all new hires by *all* Defendants in a given year. For each year, he applies this same
9 variable to every employee in the class regardless of employer. *See* Ex. 8, Leamer Oct. 2013 Rpt.
10 ¶ 19 & Figs. 2-3; Stiroh Decl. ¶ 8. Thus, he assumes the impact of increasing hiring by all
11 Defendants is the same on an employee at Google (which had three DNCC agreements) as it was
12 on an employee at Adobe (which had only one DNCC).

13 This error is crucial because the total new hires variable is responsible for the vast
14 majority of Dr. Leamer's alleged damages. To correct Dr. Leamer's error, Dr. Stiroh properly
15 split the variable to match Plaintiffs' theory and reflect new hiring by firms that had DNCC
16 agreements with each other separately from new hiring by firms that did not have such
17 agreements with each other. Dr. Stiroh also interacted the DNCC new hires variable with Dr.
18 Leamer's general conduct variable. When these distinctions are made, the result shows greatly
19 decreased damages or *overcompensation* by Defendants during the class period, depending on the
20 specification. Stiroh Decl. ¶ 10 & Exs. VI.7-8 and VI.11-12. Thus, Dr. Leamer's alleged
21 damages depend on his use of the improperly aggregated new hires variable; without it, they
22 disappear. There is no justification under any economic theory for this error. Dr. Leamer's
23 regression model is inconsistent with Plaintiffs' theory of liability and fails to meet the *Comcast*
24 standard. 133 S. Ct. at 1433.

25 Additionally, the coefficient on the total new hires variable in the model is negative,
26 indicating a negative relationship between Defendants' total hiring and employee compensation,
27 i.e., as hiring increases among the Defendants, compensation declines, all other things being
28 equal. Ex. 8, Leamer Oct. 2013 Rpt. Exs. 2-3; Stiroh Decl. ¶ 11. The implication—as

1 Defendants hire more employees, they pay their employees less—is contrary to basic economic
2 principles and makes no sense. It is inadmissible on that basis as well. *See Gen. Elec. Co. v.*
3 *Joiner*, 522 U.S. 136, 146 (1997).

4 In his reply report, Dr. Leamer attempts to defend his total new hires variable and its
5 negative coefficient as identifying periods of weak labor markets—a spike in new hiring in 2005,
6 followed by a decrease in hiring in 2006 and 2007. Ex. 9, Leamer Dec. 2013 Rpt. ¶ 119. But this
7 movement is driven almost entirely by a single Defendant, Intel, which accounts for nearly two-
8 thirds of the class. *See* Ex. 9, Leamer Dec. 2013 Rpt. Table 1 (Intel employed 40,357 out of the
9 64,613 class members). Intel experienced a significant spike in new hiring in 2005, followed by a
10 decrease in 2006 and 2007, as Dr. Leamer’s total new hires variable indicates. But other
11 Defendants, such as Google, *increased* their hiring in 2006 and 2007, which is inconsistent with
12 Dr. Leamer’s explanation of the negative coefficient. *See* Stiroh Decl. Ex. 114. By using one
13 variable for total new hires across all Defendants, Dr. Leamer’s model makes Intel’s hiring a
14 predictor of compensation at the other six Defendants, even though they have very different
15 hiring patterns and different alleged DNCC agreements.

16 The fact that the model is so sensitive to changes in Intel’s hiring reveals a fundamental
17 flaw: the damages allegedly caused by DNCC agreements between other Defendants turns on
18 Intel’s behavior, even though five of the seven Defendants had no challenged DNCC agreements
19 with Intel. For example, changing the start date of Intel’s alleged participation has an enormous
20 and irrational influence on the estimates of Dr. Leamer’s model. Dr. Leamer assumes Intel’s one
21 alleged DNCC agreement, with Google, began in 2005. Yet evidence indicates that there was no
22 agreement between Google and Intel concerning cold calling until 2006. Re-estimating the model
23 using a start date of 2006 for Intel reduces Dr. Leamer’s total alleged damages by over
24 \$1 billion—and it reduces the alleged damages for all seven Defendants, including the five
25 Defendants who do not have any challenged DNCC agreement with Intel. Stiroh Decl. ¶ 13 &
26 Exs. VI.3 and VI.4.⁶ This result dramatically demonstrates that the model fails to meet the

27 ⁶Defendants do not ask the Court to resolve this dispute regarding the alleged start date of the
28 Intel-Google DNCC agreement. Rather, the enormous effect this relatively minor change has on
Dr. Leamer’s model underscores its inherent unreliability.

1 “exacting” reliability standards of *Daubert* and its progeny. *Weisgram*, 528 U.S. at 455.

2 **E. Dr. Leamer Cannot Rely on His Regression Model to Establish the Existence**
3 **of Classwide Impact When He Admits the Model Is Incapable of Showing**
4 **Each Class Member Was Injured.**

5 Dr. Leamer concedes his regression model cannot satisfy Plaintiffs’ burden of proving that
6 each member of the class was in fact injured. Nor can the model calculate the amount of any
7 class member’s damages. Dr. Leamer admitted at his October 2012 deposition that his model
8 cannot determine whether any class member was injured. Ex. 1, Leamer Dep. 44:10-2, 57:5-11.
9 Dr. Leamer confirmed at his November 2013 deposition that his model cannot determine impact
10 or damages for individual class members. Ex. 3, Leamer Dep. at 954:2-4 (“I didn’t build a model
11 that was intended to disaggregate individual-by-individual.”); *Id.* at 957:12-18 (“Q: So your
12 model cannot be correctly applied to determine the alleged damages for any individual? A:
13 That’s correct . . .”).

14 In essence, Dr. Leamer relies on his model to do what he has admitted it cannot do: prove
15 injury to all class members despite admitting it cannot measure injury to individuals. As such, his
16 opinions are unreliable for their proffered purpose, lack scientific rigor, and are inadmissible. *See*
17 *In re Plastics Additives Antitrust Litig.*, 2010 WL 3431837, at *16 (E.D. Pa. Aug. 31, 2010)
18 (regressions were not proof of classwide impact where expert admitted they did “not show that
19 each and every class member was impacted by the alleged conspiracy”); *Joiner*, 522 U.S. at 146
20 (“[N]othing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit
21 opinion evidence that is connected to existing data only by the *ipse dixit* of the expert. A court
22 may conclude that there is simply too great an analytical gap between the data and the opinion
23 proffered.”). Dr. Leamer’s opinion that there was classwide impact must be excluded.

24 **III. CONCLUSION**

25 For the reasons set forth above, Dr. Leamer’s proposed testimony regarding alleged
26 impact and damages is unreliable and should be excluded in its entirety.
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ATTESTATION

Pursuant to General Order 45, Part X-B, the filer attests that concurrence in the filing of this document has been obtained from all signatories.

By /s/ George A. Riley
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