

United States District Court  
For the Northern District of California

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA  
SAN JOSE DIVISION

|                           |   |                               |
|---------------------------|---|-------------------------------|
|                           | ) | Case No.: 11-CV-02509-LHK     |
|                           | ) |                               |
| IN RE: HIGH-TECH EMPLOYEE | ) | ORDER RE: DEFENDANTS' MOTIONS |
| ANTITRUST LITIGATION      | ) | REGARDING DR. LEAMER AND      |
|                           | ) | DEFENDANTS' JOINT MOTION FOR  |
|                           | ) | SUMMARY JUDGMENT BASED ON     |
|                           | ) | MOTION TO EXCLUDE TESTIMONY   |
|                           | ) | OF DR. LEAMER                 |
| _____                     | ) |                               |
| THIS DOCUMENT RELATES TO: | ) |                               |
|                           | ) |                               |
| <b>ALL ACTIONS</b>        | ) |                               |
|                           | ) |                               |
| _____                     | ) |                               |

On January 9, 2014, Defendants jointly moved to strike portions of Dr. Edward Leamer’s reply report. ECF No. 557 (“Strike Mot.”). Plaintiffs filed an opposition. ECF No. 600 (“Strike Opp.”). Defendants filed a reply. ECF No. 714 (“Strike Reply”). On January 10, 2014, Defendants jointly moved to exclude the testimony of Dr. Leamer. ECF No. 570 (“Leamer Mot.”). Plaintiffs filed an opposition. ECF No. 604 (“Leamer Opp.”). Defendants filed a reply. ECF No. 715 (“Leamer Reply.”). On January 9, 2014, Defendants filed a joint motion for summary judgment based on their motion to exclude Dr. Leamer’s testimony. ECF No. 556. Plaintiffs filed an opposition. ECF No. 603. Defendants filed a reply. ECF No. 712.

1 The Court held a hearing on these motions on March 27, 2014. Having considered the  
2 briefing, relevant law, and oral argument, the Court GRANTS in part and DENIES in part  
3 Defendants' motion to strike Dr. Leamer's report, DENIES Defendants' motion to exclude Dr.  
4 Leamer's testimony under *Daubert*, and DENIES Defendants' joint motion for summary judgment.

#### 5 **I. BACKGROUND**

6 Plaintiffs Michael Devine, Mark Fichtner, Siddharth Hariharan, and Daniel Stover, on  
7 behalf of themselves and a class of those similarly situated, filed the instant litigation against  
8 Defendants Adobe Systems Inc. ("Adobe"), Apple Inc. ("Apple"), Google Inc. ("Google"), Intel  
9 Corp. ("Intel"), Intuit Inc. ("Intuit"), Lucasfilm Ltd. ("Lucasfilm"), and Pixar. ECF No. 65.  
10 Plaintiffs allege that the Defendants entered into several bilateral agreements with each other  
11 pursuant to which the parties to the agreement would not cold call each other's employees. *Id.* ¶ 55.  
12 The crux of Plaintiffs' complaint is that these bilateral agreements together form an overarching  
13 conspiracy that suppressed wages for all of Defendants' employees. *Id.* Plaintiffs contend that  
14 Defendants' agreements violated Section 1 of the Sherman Antitrust Act, 15 U.S.C. § 1, and  
15 Section 4 of the Clayton Antitrust Act, 15 U.S.C. § 15.

16 Plaintiffs filed a Consolidated Amended Complaint, the operative complaint, on September  
17 13, 2011. *See id.* Defendants filed a Joint Motion to Dismiss the consolidated amended complaint  
18 on October 13, 2011, *see* ECF No. 79, and, with leave of the Court, Lucasfilm filed its separate  
19 Motion to Dismiss on October 17, 2011, *see* ECF No. 83. Following full briefing on both motions  
20 and a hearing on January 26, 2012, *see* ECF No. 108, the Court granted in part and denied in part  
21 Defendants' Joint Motion to Dismiss and denied Lucasfilm's Motion to Dismiss on April 18, 2012,  
22 *see* ECF No. 119.

23 On October 1, 2012, Plaintiffs filed their motion for class certification, in which Plaintiffs  
24 sought to certify a class made up of all of Defendants' employees during the conspiracy period.  
25 After full briefing and a hearing, the Court granted in part and denied in part the motion on April 5,  
26 2013. *See* ECF No. 382 ("April Order"). In that order, the Court denied the motion to certify the  
27 class, but appointed interim Co-Lead Counsel and Class Counsel. *Id.* The Court's analysis focused  
28

1 on the predominance requirement of Rule 23(b)(3) of the Federal Rules of Civil Procedure. The  
2 Court found that Plaintiffs had not demonstrated that common questions would predominate with  
3 respect to the antitrust impact element of Plaintiffs' claim. *Id.* at 29. The Court, however, gave  
4 Plaintiffs leave to amend to address the Court's concerns in light of the fact that Defendants had  
5 not produced the discovery needed for class certification. *Id.* at 47, 52.

6 On May 10, 2013, Plaintiffs filed a supplemental motion for class certification, seeking  
7 certification of a narrower class of technical employees. While the motion was pending, Plaintiffs  
8 reached a settlement with Pixar, Lucasfilm, and Intuit, which the Court has preliminarily approved.  
9 After full briefing and a hearing, the Court granted Plaintiffs' motion for class certification on  
10 October 24, 2013. ECF No. 531 ("October Order"). The Court certified the class of technical  
11 employees because Plaintiffs had met their burden under Rule 23. Defendants sought interlocutory  
12 review of the Court's class certification order. On January 14, 2014, however, the Ninth Circuit  
13 exercised its discretion to deny Defendants' petition for immediate review. ECF No. 594.

14 On March 28, 2014, after full briefing, the Court denied the Defendants' individual motions  
15 for summary judgment filed by Adobe, Apple, Google, and Intel. *See* ECF No. 771. This Order  
16 addresses Defendants' joint motion to strike Dr. Leamer's reply report, Defendants' joint motion to  
17 exclude Dr. Leamer's testimony under *Daubert*, and Defendants' joint motion for summary  
18 judgment based on their motion to exclude the testimony of Dr. Leamer.

## 19 **II. LEGAL STANDARDS**

### 20 **A. Motion to Exclude Testimony under *Daubert***

21 Federal Rule of Evidence 702 allows admission of expert opinions based on "scientific,  
22 technical, or other specialized knowledge" if such an opinion would "help the trier of fact to  
23 understand the evidence or to determine a fact in issue." Fed. R. Evid. 702. Expert testimony is  
24 admissible if it is both relevant and reliable. *Daubert v. Merrell Dow Pharms., Inc.*, 509 U.S. 579,  
25 589 (1993). When considering expert testimony, the trial court acts as a "gatekeeper" by assessing  
26 the soundness of the expert's methodology to exclude "junk science." *Estate of Barabin v.*  
27 *AstenJohnson, Inc.*, 740 F.3d 457, 463 (9th Cir. 2014); *see Kumho Tire Co. v. Carmichael*, 526

1 U.S. 137, 147-48 (1999); *Daubert*, 509 U.S. at 589-90. An expert witness may provide opinion  
 2 testimony if: (1) the testimony is based upon sufficient facts or data; (2) the testimony is the  
 3 product of reliable principles and methods; and (3) the expert has reliably applied the principles  
 4 and methods to the facts of the case. Fed. R. Evid. 702. Under *Daubert*, in determining reliability,  
 5 courts can consider (1) whether a theory or technique “can be (and has been) tested;” (2) “whether  
 6 the theory or technique has been subjected to peer review and publication;” (3) “the known or  
 7 potential rate of error;” and (4) whether there is “general acceptance” of the methodology in the  
 8 “relevant scientific community.” *Daubert*, 509 U.S. at 593-94.<sup>1</sup> “[F]ar from requiring trial judges to  
 9 mechanically apply the *Daubert* factors . . . judges are entitled to broad discretion when  
 10 discharging their gatekeeping function.” *United States v. Hankey*, 203 F.3d 1160, 1168 (9th Cir.  
 11 2000) (citation omitted). The proponent of the expert has the burden of proving admissibility by a  
 12 preponderance of the evidence. *Lust v. Merrell Dow Pharmaceuticals, Inc.*, 89 F.3d 594, 598 (9th  
 13 Cir. 1996); *Daubert*, 509 U.S. at 592 n.10.

14 Rule 702 “mandates a liberal standard for the admissibility of expert testimony.” *Cook v.*  
 15 *Rockwell Int’l Corp.*, 580 F. Supp. 2d 1071, 1082 (D. Colo. Dec. 7, 2006); *Daubert*, 509 U.S. at  
 16 588 (Rule 702 is part of the “liberal thrust” of the Federal Rules of Evidence); *Dorn v. Burlington*  
 17 *N. Sante Fe R.R. Co.*, 397 F.3d 1183, 1196 (9th Cir. 2005) (“The Supreme Court in *Daubert* [] was  
 18 not overly concerned about the prospect that some dubious scientific theories may pass the  
 19 gatekeeper and reach the jury under the liberal standard of admissibility set forth in that  
 20 opinion[.]”). Thus, the inquiry into admissibility of expert opinion is a “flexible one,” where  
 21 “[s]haky but admissible evidence is to be attacked by cross examination, contrary evidence, and  
 22 attention to the burden of proof, not exclusion.” *Primiano v. Cook*, 598 F.3d 558, 564 (9th Cir.  
 23 2010) (citing *Daubert*, 509 U.S. at 596). The “district judge is ‘a gatekeeper, not a fact finder.’  
 24 When an expert meets the level established by Rule 702 as explained in *Daubert*, the expert may  
 25 testify and the jury decides how much weight to give that testimony.” *Id.* (citation omitted).

## 26 B. Motion to Strike Testimony

27 <sup>1</sup> The Supreme Court has cautioned that “*Daubert*’s list of specific factors neither necessarily nor  
 28 exclusively applies to all experts or in every case.” *Kumho Tire*, 526 U.S. at 141.

1 Rule 26(a)(2)(B) provides that an expert witness's opening report must contain  
2 "a complete statement of all opinions the witness will express and the basis and reasons for them"  
3 together with "the facts or data considered by the witness in forming them" and "any exhibits that  
4 will be used to summarize or support them." Fed. R. Civ. P. 26(a)(2)(B)(i)-(iii). Rebuttal  
5 disclosures of expert testimony are "intended solely to contradict or rebut evidence on the  
6 same subject matter identified by another party" in its expert disclosures. Fed. R. Civ. P.  
7 26(a)(2)(D)(ii). "Rule 37(c)(1) gives teeth to these requirements by forbidding the use at trial of  
8 any information required to be disclosed by Rule 26(a) that is not properly disclosed." *Yeti by*  
9 *Molly, Ltd. v. Deckers Outdoor Corp.*, 259 F.3d 1101, 1106 (9th Cir. 2001). This rule requires the  
10 exclusion of untimely expert witness testimony, unless the "part[y]'s failure to disclose the  
11 required information is substantially justified or harmless." *Id.* (citation omitted). The moving party  
12 bears the burden of showing a discovery violation has occurred. *See Hernandez ex rel. Telles-*  
13 *Hernandez ex-rel. Telles-Hernandez v. Sutter Medical Center of Santa Rosa*, 2008 WL 2156987, at  
14 \*13 (N.D. Cal. May 20, 2008). Once that burden is satisfied, the burden shifts and the nonmoving  
15 party must prove that its failure to comply with Rule 26 was either justified or harmless. *Yeti by*  
16 *Molly*, 259 F.3d at 1107.

### 17 **III. ANALYSIS**

#### 18 **A. Defendants' Motion to Strike and Motion to Exclude Dr. Edward Leamer**

19 Defendants move to strike portions of Dr. Leamer's December 2013 reply report and to  
20 exclude Dr. Leamer's testimony under *Daubert*. Specifically, Defendants move to strike Dr.  
21 Leamer's use of a 50% statistical significance theory to defend his "conduct regression," Dr.  
22 Leamer's arguments relating to the "total new hires" variable in his conduct regression, and Dr.  
23 Leamer's arguments relating to his use of real compensation in his conduct regression. Defendants  
24 move to exclude under *Daubert* Dr. Leamer's testimony, raising four specific challenges to his  
25 conduct regression model.

26 The Court first sets forth the relevant history of expert reports submitted in this case, a  
27 summary of Dr. Leamer's conclusions, and a summary of significance testing as necessary context  
28

1 and background for Defendants' motions to strike and exclude Dr. Leamer's testimony. For  
 2 reference, the Court notes that all the challenges in Defendants' motion to strike and motion to  
 3 exclude pertain solely to Dr. Leamer's conduct regression model detailed below.

#### 4 **1. Summary of Expert Reports and Dr. Leamer's Analysis**

5 At the class certification stage, Dr. Leamer submitted four expert reports on Plaintiffs'  
 6 behalf: (1) October 1, 2012 ("Class Cert. Opening Rep."), ECF No. 190; (2) December 10, 2012  
 7 ("Class Cert. Reply Rep."), ECF No. 558-4; (3) May 10, 2013 ("Suppl. Class Cert. Rep."), ECF  
 8 No. 558-5; and (4) July 12, 2013 ("Suppl. Class Cert. Reply Rep."), ECF No. 454-4. In addition, at  
 9 the class certification stage, defense expert Dr. Kevin Murphy submitted a report on November 12,  
 10 2012 ("Murphy Class Cert. Rep."), ECF No. 230,<sup>2</sup> and a supplemental report on June 21, 2013  
 11 ("Murphy Suppl. Class Cert. Rep."), ECF No. 440.

12 On October 28, 2013, Dr. Leamer<sup>3</sup> filed his opening merits report ("Leamer Opening"),  
 13 ECF No. 558-6. On November 25, 2013, defense expert Dr. Lauren Stiroh submitted her rebuttal  
 14 merits report challenging Dr. Leamer's analysis ("Stiroh Rebuttal"), ECF No. 558-7.<sup>4</sup> On  
 15 December 11, 2013, Dr. Leamer submitted his reply report ("Leamer Reply Rep."), ECF No. 558-  
 16 8.

17 Plaintiffs submitted four reports from Dr. Leamer in support of their argument at the class  
 18 certification stage that common issues predominate for the purpose of assessing classwide impact  
 19 and damages.<sup>5</sup> In Dr. Leamer's first report in October 2012, Plaintiffs asked him to evaluate

20 <sup>2</sup> Dr. Murphy challenged Dr. Leamer's analysis, concluding that individualized inquiries  
 21 predominate over common ones in this case for the purpose of determining impact.

22 <sup>3</sup> Edward E. Leamer, Ph.D, is the Chauncey J. Medberry Professor of Management, Professor of  
 23 Economics, and Professor of Statistics at the University of California, Los Angeles. Dr. Leamer  
 24 earned a B.A. in Mathematics from Princeton University in 1966, and a Masters in Mathematics  
 25 and a Ph.D. in Economics at the University of Michigan in 1970. Class Cert. Opening Rep. ¶ 1. He  
 has published on the topics of econometric methodology and statistical analysis, international  
 economics, and macro-economic forecasting, including on the subject of inferences that may  
 appropriately be drawn from non-experimental data. *Id.* ¶ 2.

26 <sup>4</sup> Dr. Murphy also submitted a merits expert report on November 25, 2013, but his report did not  
 contain an assessment of Dr. Leamer's October 2013 merits report.

27 <sup>5</sup> The three elements of Plaintiffs' antitrust claim are: (1) violation of antitrust law; (2) injury, or  
 28 "impact"; and (3) damages. *In re New Motor Vehicles Canadian Export Antitrust Litigation*, 522  
 F.3d 6, 19 n.18 (1st Cir. 2008) (citation omitted).

1 whether classwide evidence was capable of showing that the anti-solicitation agreements  
 2 artificially reduced the compensation of: (1) members of the class generally, and (2) all or most  
 3 members of the class. Class Cert. Opening Rep. ¶ 10(a).<sup>6</sup> In addition, Plaintiffs asked Dr. Leamer a  
 4 second question—to assess whether there was a reliable classwide method capable of quantifying  
 5 the amount of suppressed compensation suffered by the class. *Id.* ¶ 10(b). Dr. Leamer answered  
 6 both questions in the affirmative.

7 As explained below, Dr. Leamer’s analysis with respect to the first question proceeded in  
 8 two steps. First, Dr. Leamer explained that economic theory, documentary evidence, and multiple  
 9 regression analyses were capable of showing that the anti-solicitation agreements tended to  
 10 suppress employee compensation generally by preventing class members from discovering the true  
 11 value of their work. *Id.* ¶¶ 11(a)-(b), 63. Second, Dr. Leamer illustrated how economic theory,  
 12 documentary evidence, and statistical analyses are capable of showing that this suppression of  
 13 compensation affected all or nearly all class members. *Id.* ¶¶ 11(c), 64.

14 Dr. Leamer first concluded that classwide evidence was capable of showing that the anti-  
 15 solicitation agreements suppressed compensation of class members generally. This first step was  
 16 supported by principles of information economics, such as “market price discovery.” Dr. Leamer  
 17 noted that, when evaluating labor markets, economists often use a market equilibrium model,  
 18 which “presume[s] that market forces . . . work rapidly enough that virtually all transactions occur  
 19 at approximately the same price—the ‘market price’ which equilibrates supply and demand.” *Id.* ¶  
 20 71. In reality, when labor market conditions change, high transaction costs and limited information  
 21 flow can slow the process by which transaction prices reach market equilibrium. *Id.* ¶¶ 72-73.  
 22 “Market price discovery” is the process by which participants in a market search for this  
 23 equilibrium. *Id.* ¶ 71.

24 Dr. Leamer opined that the high transaction costs—including time, money, and personal  
 25 dislocation—involved in searching for high tech jobs limit the number of existing workers seeking

---

26  
 27 <sup>6</sup> Because this Court certified only a class comprised of technical, creative, and research and  
 28 development employees, the Court omits all discussion in prior expert reports relating to Plaintiffs’  
 putative class of *all* employees. October Order at 10-11.

1 new employment. *Id.* ¶ 74. Defendants and other high tech companies value potential employees  
 2 who are not actively looking for new employment opportunities (“passive candidates”) more than  
 3 those who are looking for new jobs (“active candidates”) because currently satisfied employees: (1)  
 4 tend to be perceived as more qualified, diligent, and reliable; (2) often have training, on-the-job  
 5 experience, and track records that save the hiring company search and training costs; and (3) are  
 6 valuable assets that, if hired away from rivals, can harm competitors. *Id.* ¶ 62. Thus, recruiting  
 7 these passive candidates by cold calling is both an important tool for employers and a key channel  
 8 of information for employees about outside opportunities. *Id.* ¶¶ 57-62, 75.

9 Dr. Leamer hypothesized that, by restricting cold calling and other competition over  
 10 employees, Defendants’ anti-solicitation agreements impaired information flow about  
 11 compensation and job offers. Defendants’ inhibition of employees’ ability to discover and obtain  
 12 the competitive value of their services meant employees were afforded fewer opportunities to  
 13 increase their salaries by moving between firms and deprived of information that could have been  
 14 used to negotiate higher wages and benefits within a firm. *Id.* ¶¶ 71-76. In addition, by limiting the  
 15 information available to employees, Defendants could avoid taking affirmative steps, such as  
 16 offering their employees financial rewards and other forms of profit sharing, to retain employees  
 17 with valuable firm-specific skills. *Id.* ¶¶ 77-80.

18 Dr. Leamer relied on documentary evidence as further support for the link between the anti-  
 19 solicitation agreements and compensation reduction. *Id.* ¶¶ 81-88. He also performed regression  
 20 analyses<sup>7</sup> which utilized Defendants’ internal compensation data to illustrate class members’  
 21 undercompensation by comparing compensation during the conspiracy with compensation in a

22 \_\_\_\_\_  
 23 <sup>7</sup> “A regression is a statistical tool designed to express the relationship between one variable, such  
 24 as price, and [independent] variables that may affect the first variable. Regression analysis can be  
 25 used to isolate the effect of an alleged conspiracy on price, taking into consideration other factors  
 26 that might also influence price, like costs and demand.” *In re Aftermarket Auto. Lighting Prods.*  
 27 *Antitrust Litig.*, 276 F.R.D. 364, 371 (C.D. Cal. July 25, 2011) (citation omitted). The coefficient  
 28 for any given independent variable measures how the dependent variable responds, on average, to a  
 change in that independent variable. Federal Judicial Center, Reference Manual on Scientific  
 Evidence 336 (3d ed. 2011) (“Ref. Manual”). In other words, regression coefficients represent the  
 mean change in the dependent variable for one unit of change in the independent variable, holding  
 other independent variables in the model constant.



1 conspiracy-free, but-for world. *Id.* ¶¶ 135-46, Figs. 20-24. Dr. Leamer concluded that the  
2 regression analyses showed that the anti-solicitation agreements artificially suppressed  
3 compensation at each Defendant. *Id.*

4 Dr. Leamer’s second step was to opine that economic theory, documentary evidence, and  
5 statistical analyses were capable of showing that this compensation suppression had widespread  
6 effects—i.e., that suppression of compensation affected all or nearly all class members. *Id.* ¶ 101.  
7 Dr. Leamer first relied on economic theories of loyalty, fairness, and internal equity to explain how  
8 the adverse effects on compensation due to Defendants’ anti-solicitation agreements would have  
9 been felt by employees who would have received a cold call or had a significant chance of  
10 receiving a cold call and employees who are linked to these groups due to internal equity  
11 considerations. Suppl. Class Cert. Reply Rep. ¶¶ 27-28. In other words, Dr. Leamer contended that  
12 labor markets rely on committed long-term relationships built on trust, understanding, and mutual  
13 interests. Class Cert. Opening Rep. ¶ 102. Thus, both employers and employees seek ways to turn  
14 the market transaction into secure long-term relationships, which “can come either from  
15 commitment (emotional or financial) to the mission of the organization, or from jointly owned  
16 firm-specific assets.” *Id.* Companies thus attempt to create loyalty “by getting buy-in from the  
17 firm’s mission and by making the place of work as appealing as possible.” *Id.* ¶ 103.

18 “One foundation of employee loyalty is a feeling of fairness that can translate into a sharing  
19 of . . . [a firm’s] rewards with more equality than a market might otherwise produce.” *Id.* ¶ 104.  
20 Firms seek to promote a feeling of fairness among employees to maintain or to increase  
21 employees’ commitment and contentment, which also leads to higher levels of productivity. Suppl.  
22 Class Cert. Rep. ¶ 16. Dr. Leamer explained that, “[t]o maintain loyalty, it is usually better for a  
23 firm to anticipate rather than to react to outside opportunities, since if a worker were to move to  
24 another firm at a much higher level of compensation, coworkers left behind might feel they have  
25 not been fairly compensated. That can have an adverse effect on worker loyalty, reducing  
26 productivity and increasing interest in employment elsewhere.” Class Cert. Opening Rep. ¶ 105.  
27  
28

1 Dr. Leamer opined that the information conveyed by an outside offer or a cold call could  
2 stimulate a response by management that could extend beyond the specific individual who received  
3 the cold call. Suppl. Class Cert. Rep. ¶ 15. Even though the market may not mandate a rise in  
4 compensation for these similar individuals until they actually receive an outside offer, “preemptive  
5 improvements” can minimize the disruption to employee loyalty that might occur when an  
6 employee discovers she was undercompensated. Class Cert. Opening Rep. ¶ 105. Thus, “[c]old-  
7 [c]alling—as well as just the threat of [c]old-[c]alling—puts upward pressure on compensation.”  
8 *Id.* ¶ 106. Dr. Leamer opined that “a broad preemptive response is completely analogous to salary  
9 increases that are tied to information provided by employment services regarding the compensation  
10 offered by the ‘market.’” Suppl. Class Cert. Rep. ¶ 15. Essentially, Dr. Leamer opined that the  
11 “response to bursts of cold calls and, even more, the response to the threat of cold calls” would  
12 raise internal equity concerns that would spread the impact throughout the class. Suppl. Class Cert.  
13 Reply Rep. ¶ 27. Dr. Leamer also noted that the documentary evidence showed that Defendants  
14 each employed company-wide compensation structures that included grades and titles, and that  
15 high-level management established ranges of salaries for grades and titles, which left little scope  
16 for individual variation. Class Cert. Opening Rep. ¶¶ 121-22.

17 Dr. Leamer also utilized statistical analyses as evidence that the anti-solicitation agreements  
18 broadly affected members of the class. *Id.* ¶¶ 120-34. These regressions were based on Defendants’  
19 salary structures and compensation data. *Id.* ¶¶ 127-30, Figs. 11-14. These “Common Factors  
20 Analyses” assessed Defendants’ “firmwide compensation structures, and the formulaic way in  
21 which total compensation was varied over time.” *Id.* ¶ 128. According to Dr. Leamer,  
22 approximately 90 percent of the variation in any individual employee’s compensation could be  
23 explained by common factors “such as age, number of months in the company, gender, location,  
24 title, and employer.” *Id.*; *see also id.*, Figs. 11-14. Dr. Leamer concluded that “[t]he fact that nearly  
25 all variability in class member compensation at any point in time can be explained by common  
26 variables means there was a systematic structure to employee compensation at each of the  
27 Defendant firms.” *Id.* ¶ 130. Dr. Leamer opined that these rigid wage structures, and the fact that  
28

1 the coefficients in his regressions did not vary substantially over time, suggested that  
 2 “compensation of class members tended to move together over time and in response to common  
 3 factors,” such that the effects of the anti-solicitation agreements would be expected to be  
 4 experienced broadly. *Id.*<sup>8</sup>

5 The second question Plaintiffs asked Dr. Leamer to assess was whether there was a  
 6 classwide method of quantifying the total amount of suppressed compensation suffered by the class  
 7 generally. *Id.* ¶ 10(b). Dr. Leamer concluded that a regression could quantify the estimated cost to  
 8 the class resulting from Defendants’ challenged conduct—in terms of wage suppression during the  
 9 periods when anti-solicitation agreements were in effect for each Defendant. *Id.* ¶¶ 141-48. This is  
 10 the regression model Defendants challenge in Defendants’ instant motion to strike and motion to  
 11 exclude Dr. Leamer’s testimony. Dr. Leamer’s model, to which the Court previously referred as the  
 12 “conduct regression,” uses the real annual compensation of each employee in each year as the  
 13 dependent variable, and includes various independent variables designed to account for factors  
 14 including: (1) age, sex, and years at the company; (2) the effects on compensation caused by the  
 15 anti-solicitation agreements; (3) the effects caused by factors specific to each Defendant (*e.g.*, firm  
 16 revenue, total number of new hires, etc.); and (4) the effects caused by the industry. *Id.*; *id.* Fig. 23.

17 The model is intended to predict the average effect of the anti-solicitation agreements on  
 18 compensation, holding other compensation-related variables constant. The critical independent  
 19 variable is the general “conduct variable,” which represents “the fraction of months in each year  
 20 during which the employer was involved in one or more of the agreements.” *Id.* ¶ 145. This  
 21 variable “estimate[s] the immediate impact of the illegal conduct.” *Id.* ¶ 146. The model also

---

22  
 23 <sup>8</sup> Dr. Leamer further opined that the evidence showed “a persistent salary structure across  
 24 employees consistent with important elements of equity in the Defendants’ compensation  
 25 practices.” *Id.* ¶ 134. Dr. Leamer relied on five compensation movement charts that depicted  
 26 changes in the base salaries and total compensation for ten major job titles at Apple between 2006  
 27 and 2009, and the ten major job titles at Google between 2005 and 2009. *Id.*, Figs. 15-17. Dr.  
 28 Leamer contended that these charts offered further evidence that compensation for different  
 positions tended to move together over time (*i.e.*, if software engineers received a raise, so did  
 account executives). *Id.* ¶¶ 133-34. Based on this evidence, Dr. Leamer opined that the anti-  
 solicitation agreements that focused on subsets of workers would nonetheless have broader effects  
 because of a desire on Defendants’ part to maintain the overall salary structure. *Id.*

1 includes three interaction variables representing the interaction between the general conduct  
 2 variable and employee age, employee age squared, and the hiring rate at an employee's firm<sup>9</sup> to  
 3 allow for the possibility that the agreements had effects that varied over time, across firms, and  
 4 across individuals. *Id.* ¶ 145. Dr. Leamer also identifies these interaction variables as "conduct"  
 5 variables separate from his general conduct variable. Class Cert. Reply Rep. ¶ 107.

6 More specifically, the conduct regression estimates the effect of the anti-solicitation  
 7 agreements by contrasting compensation during the periods when the anti-solicitation agreements  
 8 were in effect with compensation before and after the anti-solicitation agreements. Class Cert.  
 9 Opening Rep. ¶ 136; Class Cert. Reply Rep. ¶ 72. The model generates percentages—or regression  
 10 estimates—by which Defendants undercompensated the class employees in each of the conspiracy  
 11 years. *See* Class Cert. Opening Rep., Fig. 24 ("Estimated Impact on Technical Employee Class  
 12 Total Compensation").<sup>10</sup> Dr. Leamer used this model to show that the anti-solicitation agreements  
 13 suppressed compensation of the class generally, and to estimate the average or net under-  
 14 compensation at each Defendant firm during the period in which the anti-solicitation agreements  
 15 were in effect. *See id.* Dr. Leamer contended that this model could be used in a formulaic fashion  
 16 to calculate aggregate damages to the class. *See id.* ¶ 148.

17  
 18 <sup>9</sup> In a regression model, an "interaction" variable is the product of two other variables that are  
 19 included in the regression model. Ref. Manual at 316. The "interaction variable essentially allows  
 20 the expert to take into account the possibility that the effect of a change in one variable on the  
 21 dependent variable may change as the level of another explanatory variable changes." *Id.* Here, Dr.  
 22 Leamer "interacted" these variables to allow for the possibility that the firms' illegal behavior had  
 23 different effects on employees of different ages, or had different effects on employees at firms that  
 24 had been doing different amounts of hiring relative to their total number of employees.

25 <sup>10</sup> Dr. Leamer's general conduct variable is an indicator for when the challenged agreements were  
 26 in effect. Leamer Opening ¶¶ 20-21, 44-45. It is a "zero-one" variable that is turned "on" for a  
 27 particular defendant during the period when that defendant allegedly participated in any of the  
 28 challenged agreements. *Id.* It takes on a value of one in the years when a defendant had an  
 agreement and zero otherwise. *Id.* First, the model is run with the conduct variable with a value of  
 one. *Id.* Second, compensation is calculated (the regression is run) with the conduct variable turned  
 off to reflect what compensation would have been had there been no non-compete agreements. *Id.*  
 The difference in compensation between these two runs is the estimated reduction in total  
 compensation due to the agreements. *Id.* The impact of the agreements on wage per year is the  
 coefficient on the general conduct variable—i.e., if the coefficient is 0.0559, total compensation  
 was reduced by 5.59% in one year. Leamer Reply Rep. ¶ 85.

1 In his October 2013 opening merits report, Dr. Leamer explained that his original conduct  
 2 regression that utilized individual employee compensation data and was outlined in his October  
 3 2012 report (hereinafter “original conduct regression”) continued to be the best approach for  
 4 estimating the total impact on the class as well as the damages the class suffered. Leamer Opening  
 5 ¶¶ 24, 29-31.<sup>11</sup> Dr. Leamer concluded the class was undercompensated by \$3.06 billion as a result  
 6 of the agreements. *Id.* ¶ 46; Fig. 7. In order to address Dr. Murphy’s prior criticisms of his  
 7 conclusions at the class certification stage, Dr. Leamer also ran his original conduct regression with  
 8 clustered standard errors as Dr. Murphy recommended. *Id.* ¶ 28; Ex. 2 (“Compensation Model  
 9 [Without Clustered Standard Errors]”); Ex. 3 (“Compensation Model with Clustered Standard  
 10 Errors”).<sup>12</sup> Dr. Leamer concluded that while clustering the errors changed the standard errors for  
 11 each variable (in comparison to a regression without clustered errors), the change had “no impact  
 12 on the estimates of damages.” *Id.* ¶ 26.

## 13 2. Statistical Significance and Null Hypothesis Testing

14 The Court now provides an overview of null hypothesis testing, which is discussed  
 15 throughout Defendants’ motions. Statisticians often measure the accuracy of a regression model’s  
 16 estimates using what is called “significance testing” or “null hypothesis testing.” Ref. Manual at  
 17 241. Statisticians determine whether the results are statistically significant enough such that they  
 18 can reject the “null hypothesis” of zero effect, which means that the independent variable being  
 19 tested has *no* actual impact on the dependent variable and that whatever relationship is shown in  
 20 the model occurred due to random chance. *Id.* at 342, 354. In this case, the null hypothesis of zero  
 21 effect would be that the anti-solicitation agreements had no actual impact on compensation.

22  
 23  
 24 <sup>11</sup> Dr. Leamer made only “minor changes” to the original model to reflect updated data and  
 changes to the composition of the class. Leamer Opening ¶¶ 2, 16, 19, 32, 39.

25 <sup>12</sup> Standard errors measure the likely difference between the estimated value for a variable’s  
 26 coefficient and its true value. Ref. Manual at 281. “An estimate based on a sample is likely to be  
 27 off the mark, at least by a small amount, because of random error. The standard error gives the  
 28 likely magnitude of this random error, with smaller standard errors indicating better estimates.” *Id.*  
 at 243; *see also* Daniel L. Rubinfeld, *Reference Guide on Multiple Regression* 467 (Federal  
 Judicial Center, 3d ed. 2011) (“Rubinfeld”).

1 “Significance level” is a term of art used in significance testing. *Id.* at 287. “The  
2 significance level measures the probability that the null hypothesis will be rejected incorrectly.” *Id.*  
3 at 320. If there is less than an X% probability the independent variable’s coefficient could have  
4 occurred simply due to random chance, then the null hypothesis can be rejected at the X%  
5 significance level. If there is more than X% probability that the result occurred by chance, the null  
6 hypothesis cannot be rejected at the X% significance level. In other words, if the coefficient is  
7 statistically significant at the 5% significance level, there is no more than a 5% likelihood that one  
8 would observe that relationship between the independent variable and dependent variable merely  
9 by chance. A 5% significance level “indicates that the demonstrated relationship between the  
10 variables would occur in a random sample five times out of one hundred[.]” *White v. City of San*  
11 *Diego*, 605 F.2d 455, 460 (9th Cir. 1979). The smaller the significance level at which one rejects  
12 the null hypothesis, the greater the confidence one has that the null hypothesis has been correctly  
13 rejected and that the regression’s estimate is correct.

14 Statistical significance is determined by reference to a “*p*-value.” Ref. Manual at 241. A “*p*-  
15 value” for a variable tests the null hypothesis that the coefficient for that variable is equal to zero.<sup>13</sup>  
16 *Id.* at 320. It represents the “probability that a coefficient of this magnitude or larger could have  
17 occurred by chance if the null hypothesis were true.” *Id.* If the *p*-value is less than or equal to the  
18 selected significance level, the null can be rejected because the result is said to be “statistically  
19 significant” at that level, which means the probability that the observed association is the result of  
20 chance rather than a true association is less than the stated significance level. *DeLuca v. Merrell*  
21 *Dow Pharms., Inc.*, 911 F.2d 941, 945-47 (3rd Cir. 1990). If the *p*-value is greater than the  
22 significance level, then the result is said to be statistically insignificant at that level, which means  
23 there is insufficient evidence at the selected significance level to reject the “null hypothesis” of the  
24 observed association being a product of chance rather than a true association. Sander Greenland,  
25 *The Need for Critical Appraisal of Expert Witnesses in Epidemiology and Statistics*, 39 *Wake*  
26 *Forest L. Rev.* 291, 298 (2004). For example, a variable with a *p*-value greater than 0.05 means that

27 <sup>13</sup> “Often, the null hypothesis is stated in terms of a particular regression coefficient being equal to  
28 0.” Ref. Manual at 320.

1 the variable's coefficient is not statistically significant at the 5% significance level and that one  
2 cannot reject the null hypothesis that the variable has no effect on the dependent variable.

3 Statisticians can also test the null hypothesis by looking at the variable's "t-statistic." Ref.  
4 Manual at 342. If the *t*-statistic is less than 1.96 in magnitude, then at the 5% level, the statistician  
5 cannot reject the hypothesis that the estimate equals zero, so the estimate is said to not be  
6 statistically significant at the 5% level. *Id.* at 343. Conversely, if the *t*-statistic is greater than 1.96  
7 in absolute value, the statistician concludes the true value of the coefficient is unlikely to be zero,  
8 the null can be rejected, and the estimate is deemed statistically significant at the 5% level. *Id.*<sup>14</sup>

### 9 **3. Defendant's Motion to Strike Portions of Dr. Leamer's Reply Report**

10 Defendants move to strike three sections of Dr. Leamer's December 2013 reply report,  
11 claiming these new opinions should have been included in his October 2013 opening merits report.  
12 Strike Mot. at 1-2. For the reasons set forth below, the Court GRANTS IN PART AND DENIES  
13 IN PART Defendants' motion. The Court addresses each of Defendants' three contentions in turn.

#### 14 **a. Motion to Strike Paragraphs 75-90 & Figs. 15-16**

15 First, Defendants contend Paragraphs 75-90 & Figs. 15-16 should be stricken as improper  
16 rebuttal because Dr. Leamer argues for the first time that his original conduct regression with  
17 clustered standard errors, *see* Leamer Opening, Exhibit 3, should be evaluated using a 50%  
18 statistical significance level if null hypothesis testing is to be used to assess the reliability of his  
19 model. Strike Mot. at 3-4. The Court agrees, and thus precludes Dr. Leamer from testifying about  
20 that opinion at trial.

21 In his December 2013 reply report, Dr. Leamer argues for the first time that if null  
22 hypothesis testing is to be used, a 50% level should be used to determine the statistical significance  
23 of the variables' coefficients in his original conduct regression with clustered errors, and opines  
24 that the coefficient on the general conduct variable is statistically significant at that level. Leamer  
25 Reply Rep. ¶¶ 75-90 & Figs. 15-16. Dr. Leamer presents the theory that this 50% level is the  
26

27 <sup>14</sup> A *t*-statistic of 2.57 in magnitude or greater is associated with a 1% significance level. Ref.  
28 Manual at 343 n.83.

1 necessary result of balancing the risks and costs of “Type I” and “Type II” statistical errors,<sup>15</sup> and  
 2 offers an analysis of the relationship between these two types of errors. *Id.* He claims that in Dr.  
 3 Stiroh’s November 2013 rebuttal report, Dr. Stiroh failed to conduct this balancing test before  
 4 choosing the 5% level to evaluate Dr. Leamer’s model and concluding that the general conduct  
 5 variable’s coefficient was not statistically significant at that level. *Id.* ¶¶ 84-85 (referring to Stiroh  
 6 Rebuttal ¶¶ 166-72; *id.* Ex. V.14). The Court agrees with Defendants that Dr. Leamer’s new theory  
 7 is untimely disclosed and should have been included in his October 2013 opening report. By  
 8 presenting this analysis for the first time in Dr. Leamer’s reply, Plaintiffs have deprived Defendants  
 9 of the opportunity to respond. The following summary of the various reports in this case illustrates  
 10 how Dr. Leamer could have and should have included this specific analysis in his reports prior to  
 11 his December 2013 reply report.

12 Plaintiffs argue that Dr. Leamer’s analysis in his reply is proper rebuttal because it responds  
 13 to Dr. Stiroh’s criticism that Dr. Leamer’s original conduct regression with clustered errors is  
 14 unreliable because it fails to meet the 1%, 5%, or 10% levels, and also because Dr. Murphy never  
 15 made this criticism, so Dr. Leamer “could not possibly have anticipated this [argument in his  
 16 opening merits report].” Strike Opp. at 4. Plaintiffs are incorrect. Below, the Court first sets forth  
 17 where Dr. Murphy made this precise criticism, and sets forth Dr. Leamer’s responses to that  
 18 criticism in Dr. Leamer’s various reports, which notably do not mention any theory that a 50%  
 19 significance level should be used to evaluate his original conduct regression model with clustered  
 20 errors. Dr. Leamer had four expert reports in which he could have responded to Dr. Murphy’s  
 21 criticism in the manner he does in his December 2013 reply report, but he did not.

22 In his November 2012 class certification report, Dr. Murphy explicitly made the criticism  
 23 that Dr. Leamer’s original conduct regression with clustered errors is unreliable because it fails to  
 24 meet the 1%, 5%, or 10% levels. More specifically, Dr. Murphy explained that Dr. Leamer’s  
 25 conduct regression failed to account for the fact that compensation for employees within the same

---

26  
 27 <sup>15</sup> A Type I error in this case would be a finding of classwide impact and damages when there were  
 28 none. A Type II error would be a finding of no classwide impact and damages when in fact there  
 was classwide impact and damage. Leamer Reply Rep. ¶ 83.



1 firm is correlated. Murphy Class Cert. Rep. ¶ 126. Dr. Murphy contended that, given this  
 2 correlation, Dr. Leamer should have clustered the standard errors in his model. *Id.* Critically, Dr.  
 3 Murphy opined that when the errors are clustered, the general conduct variable’s coefficient is not  
 4 statistically significant at the 1%, 5%, and 10% levels when null hypothesis testing is conducted,  
 5 and also that Dr. Leamer’s final “undercompensation” percentages were not statistically significant  
 6 at the 5% level. *Id.* ¶ 128; Ex. 21B (“Dr. Leamer’s [] Regression Using Corrected Standard  
 7 Errors”); Ex. 22B (“Dr. Leamer’s Undercompensation Estimates Are Not Statistically Significant  
 8 [at the 5% level].”). Dr. Murphy further noted, “The *p*-values imply that Dr. Leamer’s estimates are  
 9 completely consistent with there being no true effect of the desired conduct and his estimates  
 10 resulting entirely from random factors unrelated to that conduct. Thus, once properly analyzed, Dr.  
 11 Leamer’s conduct regression provides no meaningful evidence that the challenged agreements  
 12 reduced compensation[.]” *Id.* ¶ 128. He also emphasized Dr. Leamer did “not even acknowledge in  
 13 his report that his reported standard errors and resulting *t*-statistics . . . were not meaningful.” *Id.* ¶  
 14 126.

15 Dr. Leamer responded to Dr. Murphy’s critique in his December 2012 reply report but did  
 16 not do so by setting forth his theory that a 50% significance level should be used to evaluate his  
 17 original conduct regression with clustered errors. Rather, he argued that clustering standard errors  
 18 is only one way of controlling for correlations between employees. Class Cert. Reply Rep. ¶¶ 76,  
 19 78, 82-83. Another approach would be to include variables to explain the commonalities across  
 20 firms and capture the common sources of variation between employees. *Id.* ¶ 76, 83.<sup>16</sup> He also  
 21 emphasized that yet another approach would be to use an *alternative* regression model that utilized  
 22 firm-wide compensation averages for each defendant as opposed to individual employee  
 23 compensation data, which his original conduct regression utilized. *Id.* ¶ 103, 106; Figs. 12 & 14;  
 24 *see also* Leamer Opening ¶ 29. Dr. Leamer conceded that in this alternative conduct regression  
 25 model, not all the variables were statistically significant at the “conventional [5] percent and [10]  
 26 percent levels. However, the T-values on the conduct coefficients are relatively high and provide

27 <sup>16</sup> Dr. Leamer noted that his regression model had already included one such variable, revenue.  
 28 Class Cert. Reply Rep. ¶¶ 82-83.

1 evidence that the negative coefficients did not occur by mere chance.” Class Cert. Reply Rep. ¶  
2 107.<sup>17</sup>

3 In his May 2013 supplemental class certification report, Dr. Leamer did not respond to Dr.  
4 Murphy’s criticism.<sup>18</sup> Dr. Murphy’s rebuttal supplemental class certification report in June 2013  
5 again raised the same criticism, *see* Murphy Suppl. Class Cert. Rep. at 27, but Dr. Leamer’s  
6 supplemental reply report in July 2013 did not address that criticism except to say that “[t]he work  
7 I have done so far establishes the robustness of my damages model[.]” Suppl. Class Cert. Reply  
8 Rep. at 31.

9 In his October 2013 opening merits report, Dr. Leamer addressed Dr. Murphy’s criticism,  
10 but did so in a different way than his December 2012 reply report by actually running his original  
11 conduct regression with clustered errors as Dr. Murphy had recommended. Leamer Opening ¶ 28;  
12 Ex. 2 (“Compensation Model [Without Clustered Standard Errors]”); Ex. 3 (“Compensation Model  
13 with Clustered Standard Errors”). Dr. Leamer opined that although clustering the errors changed  
14 the standard errors for each variable (in comparison to his regression which did not cluster the  
15 errors), the change had “no impact on the estimates of damages” because the variables had the  
16 same exact coefficients in both models. *Id.* ¶¶ 26-28; Exs. 2 & 3. Again here, Dr. Leamer did not  
17 set forth his theory that a 50% significance level should be used to evaluate his original conduct  
18 regression with clustered errors.

19 As the above timeline reflects, the fact that Dr. Murphy made the exact same criticism as  
20 Dr. Stiroh in Dr. Murphy’s November 2012 report demonstrates that Dr. Leamer knew about this  
21 criticism long before Dr. Stiroh’s report and thus had four reports *before* Dr. Leamer’s December  
22 2013 reply in which he could have set forth his theory that a 50% significance level should be used  
23

---

24 <sup>17</sup> Dr. Leamer’s alternative model showed that of the five conduct variables’ coefficients, two were  
25 statistically significant at the 1% level and three were not significant at the 1%, 5% or 10% levels.  
26 Class Cert. Reply Rep. Fig. 14.

27 <sup>18</sup> In Dr. Leamer’s May 2013 supplemental expert report, Plaintiffs asked him to respond to  
28 questions raised by the Court related to whether Dr. Leamer’s initial methodology could show  
classwide impact. Dr. Leamer found that his additional analyses confirmed his “original finding of  
a somewhat rigid pay structure at each Defendant firm that would have transmitted the effects of  
the agreements broadly, including throughout the Technical Class.” Supp. Class. Cert. Rep. ¶ 13.

1 to evaluate his original conduct regression with clustered errors. Yet he did not. For example, in his  
 2 December 2012 reply, Dr. Leamer did not defend the reliability of his original conduct regression  
 3 with clustered errors against Dr. Murphy's attack by rebutting that the statistical significance of  
 4 that regression should be evaluated at the 50% level. Rather, he ran an *alternative* regression he  
 5 claimed obviated the need for clustering. Class Cert. Reply Rep. ¶ 103, 106. In his October 2013  
 6 merits report, Dr. Leamer did run his original conduct regression *with clustered errors* but still did  
 7 not defend the reliability of that model by stating that statistical significance should be evaluated at  
 8 the 50% level. To the contrary, Dr. Leamer's own exhibit displaying the regression with clustered  
 9 errors reports that the general conduct variable's coefficient is not statistically significant at the  
 10 1%, 5%, and 10% levels,<sup>19</sup> and does not report statistical significance at any other level. Leamer  
 11 Opening, Ex. 3. Dr. Leamer never explains in the body of his report that this result is not  
 12 problematic because statistical significance should be evaluated at the 50% level, nor that his  
 13 results were in fact significant at that 50% level.<sup>20</sup> Simply put, Dr. Leamer's theory is untimely  
 14 disclosed because he could have and should have included this theory in his opening merits report  
 15 to allow Defendants the opportunity to respond. Further, Plaintiffs cannot reasonably characterize  
 16 Dr. Leamer's new theory as simply proper rebuttal to Dr. Stiroh's decision to measure his original  
 17 conduct regression with clustered errors at the 5% level because Dr. Leamer *himself* reported and  
 18 utilized the same 5% level against his model in his October 2013 report.<sup>21</sup>

19  
 20  
 21 <sup>19</sup> Dr. Stiroh makes this precise point when stating that in Dr. Leamer's Exhibit 3, the general  
 22 conduct variable's coefficient is not statistically significant. Stiroh Rebuttal ¶ 168. Dr. Leamer  
 23 highlights this point in the body of his report for the first time in his December 2013 reply. Leamer  
 24 Reply Rep. ¶ 75 (noting that his original conduct regression with clustered standard errors "leave[s]  
 25 the estimated conduct coefficient 'statistically insignificant' at the conventional 5% level[.]").

26 <sup>20</sup> Dr. Leamer also used the 1%, 5%, or 10% levels in four of his other charts in his opening merits  
 27 report. Leamer Opening, Exs. 2, 4-6 (reporting t-values and noting whether each variable  
 28 coefficient was statistically significant at the 1%, 5%, or 10% levels).

<sup>21</sup> In Dr. Leamer's reports prior to his October 2013 report, Dr. Leamer also analyzed the statistical  
 significance of many of the coefficients in varying models using the 1%, 5%, and 10% levels. *See*,  
 e.g., Class Cert. Opening Rep. Figs. 20 & 23; Class Cert. Reply Rep. Figs. 12, 14, 16-19; Suppl.  
 Class Cert. Rep. ¶¶ 41 (noting "a t-statistic in excess of 2 in absolute value is said to produce  
 'statistically significant' estimate[s] by conventional [5%] standards."), Fig. 1 (reporting statistical  
 significance at the 1%, 5% and 10% levels).

1 This Court's April Order further illuminates why Dr. Leamer's new theory is untimely  
 2 disclosed. The Court held that "the fact that, when the errors are clustered, the Conduct  
 3 Regression's results are not statistically significant at the 95 percent level<sup>22</sup> does not persuade the  
 4 Court that the regression is inadmissible (although this failure might affect the model's probative  
 5 value)." April Order at 42. The Court noted, "To the extent there are other variables that may  
 6 improve the accuracy of the Conduct Regression . . . , Dr. Leamer is encouraged to include them in  
 7 his next report." *Id.* at 43 n.15. Thus, the Court explicitly asked Dr. Leamer to explain in his  
 8 upcoming reports any further response he had to Dr. Murphy's argument that his results were  
 9 inaccurate because the conduct variable's coefficient in his original conduct regression with  
 10 clustered errors was not statistically significant at the 5% level. Dr. Leamer's 50% theory would  
 11 have been precisely such a response, but Dr. Leamer did not include it in any report until his final  
 12 December 2013 reply report.<sup>23</sup>

13 In sum, because Plaintiffs waited until after Defendants had filed their last expert report for  
 14 Dr. Leamer to offer a new theory, Plaintiffs have violated Rule 26(a)(2)(B)'s requirement that an  
 15 expert witness's opening report contain "a complete statement of all opinions the witness will  
 16 express and the basis and reasons for them" together with "the facts or data considered by the  
 17 witness in forming them." Fed. R. Civ. P. 26(a)(2)(B)(i)-(iii). Plaintiffs will not be allowed to

18 \_\_\_\_\_  
 19 <sup>22</sup> "Confidence intervals . . . are statistical estimates of the range within which there can be  
 20 reasonable confidence that a correlation or prediction is not the result of chance variability in the  
 21 sample on which the correlation or prediction was based[.]" *ATA Airlines, Inc. v. Fed. Exp. Corp.*,  
 22 665 F.3d 882, 895 (7th Cir. 2011). Every confidence interval is the complement of a respective  
 23 significance level. A 95% confidence interval reflects a statistical significance level of 5%. *Cook*,  
 24 580 F. Supp. 2d at 1101 ("[A] confidence interval can also be used to infer the *p*-value and thus can  
 25 be used as a surrogate test for significance. A 95% confidence interval, for example, that does not  
 26 include the null hypothesis [] indicates that there is a less than 5% chance that the observed  
 27 association is the result of random error or chance. . . . This is equivalent to a *p*-value of less than  
 28 .05, meaning the study result is 'statistically significant.' [] Conversely, if the null point falls within  
 the 95% confidence interval, then the study result is not deemed 'statistically significant' under a  
 significance level of .05."). Because a 5% significance level is associated with a 95% confidence  
 interval, statisticians sometimes colloquially refer to the 5% level as the 95% level.

<sup>23</sup> Nor did Dr. Leamer explain this theory in his November 2013 deposition. When asked by  
 Plaintiffs' counsel to admit that the general conduct variable's coefficient in Exhibit 3 of his  
 October 2013 report was "not statistically significant," he simply responded, "That's correct."  
 Brown Decl, ECF No. 573, Ex. 3, at 1044 ("Nov. 2013 Leamer Dep.").

1 “sandbag” Defendants with new analysis that should have been included at the very least in Dr.  
 2 Leamer’s opening merits report. *Oracle Am., Inc. v. Google Inc.*, No. C 10–03561 WHA, 2011 WL  
 3 5572835, at \*3 (N.D. Cal. Nov. 15, 2011) (granting motion to strike and noting expert disclosure  
 4 schedule “was designed to forestall ‘sandbagging’ by a party with the burden of proof who wishes  
 5 to save its best points for reply, when it will have the last word, a common litigation tactic.”). Dr.  
 6 Stiroh had no chance to rebut Dr. Leamer’s theory because expert discovery has closed. “This  
 7 immunity, combined with the element of surprise, would be unfair.” *Id.* While Defendants have  
 8 proven a discovery violation, Plaintiffs have not proven that their failure to comply with Rule 26  
 9 was either justified or harmless. *See Yeti by Molly*, 259 F.3d at 1107; *Negrete v. Allianz Life Ins.*  
 10 *Co. of N. Am.*, 2013 WL 6535164, at \*24 (C.D. Cal. Dec. 9, 2013) (“[P]laintiffs do not explain how  
 11 their tardy disclosure was either substantially justified or harmless under Fed. R. Civ. P.  
 12 37(c)(1).”).<sup>24</sup> Accordingly, the Court strikes ¶¶ 75-90 & Figs. 15-16 of Dr. Leamer’s reply as  
 13 untimely disclosed and improper rebuttal.<sup>25 26</sup> Defendants’ motion to strike ¶¶ 75-90 & Figs. 15-16  
 14 is thus GRANTED.

15 \_\_\_\_\_  
 16 <sup>24</sup> Plaintiffs’ argument that it would be prejudicial not to allow Dr. Leamer to point out the flaws in  
 17 Dr. Murphy’s 5% level, *see* Strike Opp. at 5-6, ignores the point that Dr. Leamer should have  
 18 included *his* 50% theory in his opening merits report so that Defendants would have a chance to  
 19 respond. Further, while Plaintiffs cite *Scientific Components Corp. v. Sirenza Microdevices, Inc.*,  
 20 No. 03 CV 1851(NGG)(RML), 2008 WL 4911440, at \*7 (E.D.N.Y. Nov. 13, 2008), for the  
 21 proposition that when “the alleged confusion in the report in chief turns on a subtle scientific  
 22 distinction that neither side’s experts have previously discussed, it is not only permissible but also  
 23 obligatory for the rebuttal expert report to provide technical background information adequate to  
 24 illustrate the point,” that case is inapposite because Dr. Murphy *did* previously discuss the same  
 25 criticism that Dr. Stiroh raises in Dr. Murphy’s November 2012 report.

26 <sup>25</sup> Nothing in this Order prevents Dr. Leamer from testifying to one of the opinions set forth in his  
 27 December 2012 reply, which Dr. Leamer expressly incorporated by reference into his December  
 28 2013 merits report and attached as an exhibit to his merits report, Leamer Opening ¶ 1. In his  
 December 2012 reply, when describing an *alternative* model that utilized firm-wide compensation  
 averages, Dr. Leamer included a one line reference to a 50% significance level (equivalent to a 0.5  
*p*-value), and suggested that the conduct variables’ coefficients in this model may be reliable  
 because they meet the 50% level. *See* Class Cert. Reply Rep. ¶ 107 (“The *p*-value on all conduct  
 coefficients is less than 0.5 which suggests that it is more likely than not that the compensation of  
 employees was decreased during the period of the agreements.”). While Dr. Leamer will not be  
 allowed to testify, as laid out in his December 2013 reply, that his original conduct regression  
 model with clustered errors is reliable because its general conduct coefficient meets the 50%  
 significance level, Dr. Leamer may testify to the exact opinion disclosed in his December 2012

1 **b. Motion to Strike Paragraphs 115-20 & Figs. 17-18**

2 The Court now addresses Defendants' request to strike Paragraphs 115-20 & Figs. 17-18 of  
 3 Dr. Leamer's reply on the ground that these sections contain new arguments in support of Dr.  
 4 Leamer's "total new hires" variable.<sup>27</sup> Strike Mot. at 8. Defendants cite Dr. Leamer's assertion that  
 5 this variable is the "most statistically significant variable" and that omitting it would "wreak  
 6 havoc" on the other coefficients. *Id.* (citing Leamer Reply Rep. ¶¶ 115, 117). Defendants also claim  
 7 Dr. Leamer impermissibly provides "new analyses aimed at justifying the variable's inclusion in  
 8 his model." *Id.* (citing Leamer Reply Rep. ¶¶ 118-20). The Court disagrees that Dr. Leamer's  
 9 arguments constitute improper rebuttal. In her report, Dr. Stiroh attacks Dr. Leamer's use of this  
 10 variable by claiming that the variable's coefficient has the "wrong" sign (i.e., negative) because the  
 11 coefficient implies that as the firms are doing more hiring, the firms pay their employees less,  
 12 which runs contrary to basic economic principles, Stiroh Rebuttal ¶¶ 161-65, and by advocating  
 13 that the variable should be omitted because it wrongly "combines the impact of the hiring by firms

14 \_\_\_\_\_  
 15 reply, notably that the fact that his *alternative* conduct regression model's conduct coefficients pass  
 16 the 50% level "suggests that it is more likely than not that the compensation of employees were  
 17 decreased during the period of the agreements." *Id.*

18 <sup>26</sup> Plaintiffs make much of the fact that Dr. Leamer "does not advocate point null hypothesis  
 19 testing." Strike Opp. at 4; Leamer Opp. at 8-9 (Dr. Leamer "has never used point null hypothesis  
 20 testing in this case."). Dr. Leamer's testimony on this point has been inconsistent. In his December  
 21 2013 report and October 2012 deposition, he claimed he had not conducted null hypothesis testing.  
 22 Leamer Reply Rep. ¶¶ 77-78, 82; Omnibus Brown Decl., ECF No. 716, Ex. B, "Oct. 2012 Leamer  
 23 Dep." at 220, 1236-37, 1243-44 (claiming the *t*-statistics in his exhibits were simply "standard  
 24 things that come rolling out of computer packages" and not an indication he did hypothesis  
 25 testing). Yet in that same deposition, he conceded he did. Oct. 2012 Leamer Dep. at 1239 ("I would  
 26 admit that [I did hypothesis testing in this case] . . . I'm doing [] the hypothesis testing  
 27 exercise[.]"); *id.* at 1237 ("I pursued . . . the hypothesis testing task."). In his November 2013  
 28 deposition, he stated that the computation of statistical significance at the 1%, 5% and 10% levels  
 in his models was "done setting the null hypothesis to zero" because "that's the way that it's  
 usually done in econometric literature[.]" Nov. 2013 Leamer Dep. at 1038-40. Yet he  
 simultaneously claimed that it was not his "choice. That's just a standard operating procedure that  
 economists use. When it comes to estimating damages, I'm trying to argue that that is a poor idea."  
*Id.* at 1039. Regardless of whether Dr. Leamer *advocates* the use of null hypothesis testing in this  
 case, the Court finds that Dr. Leamer did in fact conduct such testing in this case because he  
 conceded he did so, and further finds that he conducted such testing by using the 1%, 5% and 10%  
 levels.

<sup>27</sup> This variable is one of the independent variables in Dr. Leamer's model which represents the  
 sum of all new hires by all Defendants in a given year. Leamer Opening Fig. 5.

1 with whom each Defendant has a[n anti-solicitation] agreement with the impact of hiring by other  
 2 Defendants.” *Id.* ¶¶ 183, 186-88.<sup>28</sup> Dr. Leamer was entitled, in direct response to Dr. Stiroh’s  
 3 opinion, to explain in detail greater than his opening report the statistical significance of this  
 4 variable compared to that of the other variables and why omitting it would be incorrect. Leamer  
 5 Reply Rep. ¶¶ 115-17. Defendants also mischaracterize the substance of Dr. Leamer’s testimony at  
 6 ¶¶ 118-20 & Figs. 17-18, wherein Dr. Leamer does not provide any new analysis to “justify” the  
 7 inclusion of the variable. Rather, Dr. Leamer simply responds to Dr. Stiroh’s criticism that Dr.  
 8 Leamer “has not provided an explanation for why the unusual results are reasonable,” Stiroh  
 9 Rebuttal ¶ 165, by explaining that negative coefficient may have resulted either because the  
 10 variable was “identifying periods of weak labor markets,” or because “high levels of hiring may  
 11 leave the impression that replacements are easy to find, [thus leading to lower] wages of  
 12 incumbents.” Leamer Reply Rep. ¶ 119-20. Such a response is within the realm of proper rebuttal  
 13 testimony, as it is clearly “intended solely to contradict or rebut evidence on the same subject  
 14 matter identified by another party.” Fed. R. Civ. P. 26(a)(2)(D)(ii); *see also Kirola v. City & Cnty.*  
 15 *of S.F.*, No. C-07-3685 SBA (EMC), 2010 WL 373817, at \*2 (N.D. Cal. Jan. 29, 2010) (“Rebuttal  
 16 disclosure is not automatically excluded solely because it includes evidence that was absent in the  
 17 original expert disclosure.”). Accordingly, the Court DENIES Defendants’ request to strike  
 18 Paragraphs 115-20 & Figs. 17-18 of Dr. Leamer’s reply.

19 **c. Motion to Strike Paragraphs 108-110**

20 Third, Defendants seek to strike Paragraphs 108-110 on the grounds that Dr. Leamer  
 21 “introduces for the first time a justification for using real compensation as a metric in Dr. Leamer’s  
 22 model instead of nominal compensation.” Strike Mot. at 9. The Court denies Defendants’ request.  
 23 Dr. Leamer has utilized real compensation in all his regressions since his October 2012 report. *See,*  
 24 *e.g.*, Class Cert. Opening Rep. Figs. 20 & 23 (dependent variable is total annual compensation of  
 25 each employee divided by the CPI to adjust for inflation); Leamer Opening ¶¶ 20, 41, Exs. 2-6. Dr.  
 26 Murphy did not challenge Dr. Leamer’s use of real compensation in any of Dr. Murphy’s reports in  
 27

28 <sup>28</sup> Dr. Murphy did not make this criticism in any of his reports in opposition to class certification.

1 opposition to class certification. In her rebuttal report, Dr. Stiroh opines that Dr. Leamer's conduct  
 2 regression is unreliable because he utilizes real compensation by adjusting the model for inflation;  
 3 Dr. Stiroh claims that "running the model on nominal figures would be expected to produce a more  
 4 accurate result." Stiroh Rebuttal ¶ 174. Dr. Stiroh opines that when nominal compensation is  
 5 utilized, the resulting damages estimate is \$1.8 billion as opposed to the \$3.06 billion Dr. Leamer's  
 6 model estimates. *Id.* ¶¶ 175-76; Ex. V1.1. Dr. Stiroh thus claims that Dr. Leamer's damages appear  
 7 to be caused by "changes in inflation[.]" *Id.* ¶ 176. In response, Dr. Leamer claims Dr. Stiroh's  
 8 critique is invalid because using nominal compensation assumes that the labor market determines  
 9 nominal, not real wages, which is contrary to mainstream economic thinking. Leamer Reply Rep.  
 10 ¶¶ 108-110. Such an opinion is appropriate rebuttal because Dr. Leamer is entitled to respond to  
 11 Dr. Stiroh's criticism.<sup>29</sup> While Dr. Leamer did not explicitly state in his opening report the rationale  
 12 for using real as opposed to nominal compensation, that does not mean his rebuttal report violates  
 13 Rule 26. This is because to exclude Dr. Leamer's response to Dr. Stiroh's challenge here would  
 14 create a rule whereby experts would feel the need to include "vast amounts of arguably irrelevant  
 15 material" in their opening reports "on the off chance that failing to include any information in  
 16 anticipation of a particular criticism would forever bar the expert from later introducing the  
 17 relevant material." *Crowley v. Chait*, 322 F. Supp. 2d 530, 551 (D.N.J. March 16, 2004).  
 18 Accordingly, the Court DENIES Defendants' request to strike Paragraphs 108-110 of Dr. Leamer's  
 19 reply.

#### 20 4. Defendants' Motion to Exclude Dr. Leamer's Testimony Under *Daubert*

21 Defendants move to exclude Dr. Leamer's conduct regression under *Daubert* on four  
 22 grounds: (1) the general conduct variable lacks statistical significance and the Court should reject  
 23 Dr. Leamer's attempt to justify his model based on a 50% significance level; (2) the regression  
 24 fails to distinguish between any alleged impact from the anti-solicitation agreements and conduct  
 25

---

26 <sup>29</sup> Defendants argue that if the Court does not strike the testimony Defendants cite, Defendants  
 27 should be granted leave for Dr. Stiroh to submit a reply report. Strike Mot. at 10. The Court denies  
 28 this request because Dr. Leamer's opinions regarding the total new hires variable and nominal  
 compensation do not comprise improper testimony, and thus there is no need for a surreply.



1 not at issue; (3) the “total new hires” variable is inconsistent with Plaintiffs’ theory of harm; and  
 2 (4) the regression is incapable of showing each class member was injured. Leamer Mot. at 1-2.<sup>30</sup>  
 3 The Court disagrees with Defendants with respect to all four challenges.

4 As a preliminary matter, the Court notes that it held in its October Order that Dr. Leamer’s  
 5 conduct regression was “statistically robust,” supported by the economic literature, and “capable of  
 6 calculating classwide damages.” October Order at 82; *see also* April Order at 35. Further,  
 7 numerous courts have held that regression analysis is generally a reliable method for determining  
 8 damages in antitrust cases and is “a mainstream tool in economic study.” *In re Industrial Silicon*  
 9 *Antitrust Litig.*, No. 95–2104, 1998 WL 1031507, at \*2 (W.D. Pa. Oct. 13, 1998); *Petruzzi’s IGA*  
 10 *Supermarkets, Inc. v. Darling–Delaware Co., Inc.*, 998 F.2d 1224, 1237-41 (3d Cir. 1993)  
 11 (admitting regression analysis for use in calculating antitrust damages); *In re Flat Glass Antitrust*  
 12 *Litigation*, 191 F.R.D. 472, 486 (W.D. Penn. Nov. 5, 1999) (“[R]egression analysis is one of the  
 13 mainstream tools in economic study and it is an accepted method of determining damages in  
 14 antitrust litigation.”) (citation omitted). With this context in mind, the Court addresses each of  
 15 Defendants’ arguments in turn below.

16 **a. Defendants’ First *Daubert* Challenge**

17 Defendants’ first challenge is that Dr. Leamer’s conduct regression is unreliable because  
 18 two of its variables lack statistical significance at the 1%, 5%, and 10% levels when null hypothesis  
 19 testing is used.<sup>31</sup> Leamer Mot. at 6-8. Defendants cite how Dr. Leamer concedes that his general  
 20 conduct variable in his original conduct regression with clustered standard errors has a “large  
 21 standard error” and thus its coefficient is not statistically significant at the 1%, 5%, and 10% levels.  
 22 *Id.* at 6 (citing Nov. 2013 Leamer Dep. at 1036, 1044 & Brown Decl, ECF No. 573, Ex. 4, Dec.

23 \_\_\_\_\_  
 24 <sup>30</sup> While Defendants claim in their conclusion section that “Dr. Leamer’s proposed testimony  
 25 regarding alleged impact and damages is unreliable and should be excluded in its *entirety*,” Leamer  
 26 Mot. at 15 (emphasis added), the substance of Defendants’ motion challenges only Dr. Leamer’s  
 27 opinions relating to his conduct regression model.

28 <sup>31</sup> Defendants’ other request, *see* Leamer Mot. at 8-10, to exclude Dr. Leamer’s attempt to justify  
 his original conduct regression with clustered errors based on his 50% significance theory, as set  
 forth in his October 2013 opening report, is moot because the Court has precluded Dr. Leamer  
 from testifying about that opinion on other grounds. *See supra* Part III.A.3.a.

1 2013 Leamer Deposition at 1258); *see also* Leamer Opening, Ex. 3 (demonstrating that the general  
2 conduct variable is not statistically significant at the 1%, 5%, and 10% levels). Defendants point  
3 out the same flaw in one of Dr. Leamer’s other variables, which represents the interaction between  
4 the general conduct variable and the hiring rate per Defendant firm. Leamer Mot. at 6. The Court  
5 rejects Defendants’ argument.

6 In null hypothesis testing, “standard errors” determine the statistical significance of a  
7 variable’s coefficient—i.e., determine whether the model provides statistically reliable evidence  
8 that the true value of the estimate (the independent variable’s coefficient) is different from zero.  
9 ECF No. 574, “Stiroh Decl.” ¶ 3. In addition, the fact that a coefficient is not statistically  
10 significant at a certain significance level means the null hypothesis (that the independent variable  
11 has no actual effect on the dependent variable) cannot be rejected at that significance level. Here,  
12 Dr. Leamer’s own exhibit, which reports the results of his original conduct regression model with  
13 clustered standard errors, reports that two of his variables, including the general conduct variable,  
14 are not statistically significant at the 1%, 5%, and 10% levels. Leamer Opening, Ex. 3. Defendants  
15 argue this means Dr. Leamer’s regression has been unable to estimate those variables’ coefficients  
16 “with sufficiently reasonable precision to conclude their true value — or the impact of the  
17 challenged agreements — is different from zero.” Leamer Mot. at 7.

18 The Court finds that the fact that these two variables are not statistically significant at the  
19 1%, 5%, and 10% levels goes to the weight, not the admissibility of Dr. Leamer’s model. As an  
20 initial matter, the Court acknowledges that there is certainly ample evidence that these three levels  
21 are the “conventional” levels statisticians typically use. *ATA Airlines*, 665 F.3d at 895 (noting that a  
22 95% confidence interval – which reflects a statistical significance level of 5% – is “the standard  
23 criterion of reasonable confidence used by statisticians”); *Contreras v. City of L.A.*, 656 F.2d 1267,  
24 1273 n.3 (9th Cir. 1981) (“[A] .05 level of statistical significance . . . is generally recognized as the  
25 point at which statisticians draw conclusions[.]”) (citation omitted); *Madani v. Equilon Enterprises*  
26 *LLC*, CV 04-10370 JVS JTLX, 2009 WL 2148664 (C.D. Cal. July 13, 2009) (“The ‘generally  
27 accepted’ rates in the economic community [are] 5–10 % [.]”) (citation omitted); Ref. Manual at  
28

1 251-52 (statistical analysts typically use the 5% and 1% levels); Omnibus Brown Decl., ECF No.  
2 716, Ex. H, Jeremy Foster et al., *Understanding and Using Advanced Statistics* 1, 6 (2006) (noting  
3 that these are the three conventional levels used); *id.* Ex. K, MARNO VERBEEK, A GUIDE TO  
4 MODERN ECONOMETRICS 31 (2d ed. 2004) (same); *id.*, Ex. N, R. Carter Hill, William E. Griffiths &  
5 Guay C. Lim, PRINCIPLES OF ECONOMETRICS 710 (4th ed. 2011) (same); Rubinfeld at 431 (same).

6 This notwithstanding, the fact that Dr. Leamer's model fails to meet these three levels does  
7 not convince the Court that his model is so methodologically flawed as to warrant exclusion. For  
8 one thing, Plaintiffs cite evidence that null hypothesis testing is not a requirement of statistical  
9 analysis, because it is not the only test of reliability statisticians use. Plaintiffs also present  
10 evidence that some scholars believe that the conventional levels should not be blindly applied in  
11 every case but that a level should be selected after a careful consideration of the particular study at  
12 hand. *See* Harvey Decl., ECF No. 607, Ex. 20, William H. Kruskal, *Tests of Significance*, in 2  
13 INT'L ENCYCLOPEDIA OF STATISTICS 955 (William H. Kruskal & Judith M. Tanur ed., 1978)  
14 ("Significance testing is an important part of statistical theory and practice, but it is only one part,  
15 and there are other important ones."); *id.*, Ex. 19, PETER KENNEDY, A GUIDE TO ECONOMETRICS 61  
16 (2003) (noting that the opinion that "hypothesis testing is overstated, overused, and practically  
17 useless as a means of illuminating what the data in some experiment are trying to tell us" is "shared  
18 by many") (citation omitted); *id.*, Ex. 17, R.A. FISHER, STATISTICAL METHODS AND SCIENTIFIC  
19 INFERENCE 45 (3d. ed. 1973) ("[I]t would clearly be illegitimate for one to choose the actual level  
20 of significance . . . as though it were his lifelong habit to use just this level."). There is also case  
21 law in support of these scholarly positions. *See, e.g., Cook*, 580 F. Supp.2d at 1091 ("[S]cientific  
22 endeavor takes many forms, many of which do not involve hypothesis testing."); *Kadas v. MCI*  
23 *Systemhouse Corp.*, 255 F.3d 359, 362 (7th Cir. 2001) ("The 5 percent test is arbitrary; it is  
24 influenced by the fact that scholarly publishers have limited space and don't want to clog up their  
25 journals and books with statistical findings that have a substantial probability of being a product of  
26 chance rather than of some interesting underlying relation between the variables of concern.").

1 Second, Defendants have not cited, nor has this Court found, any case holding that a  
 2 regression model must reject a null hypothesis of zero effect at least at the 10% significance level  
 3 in order to be admissible.<sup>32</sup> In fact, there is authority holding otherwise. *See, e.g., Cook*, 580 F.  
 4 Supp. 2d at 1102, 1105 (rejecting argument that “statistical significance is a threshold requirement  
 5 for establishing the admissibility of expert testimony involving the use of statistics” and holding  
 6 that neither “the Tenth Circuit ([nor] any other court) has adopted a rule barring admission of any  
 7 epidemiological study that was not statistically significant at the 95-percent confidence level.”);  
 8 *Kadas*, 255 F.3d at 362 (rejecting the idea that a study is inadmissible as a matter of law just  
 9 because it is less statistically significant than the 5 % level).<sup>33</sup> Even Defendants’ own expert, Dr.  
 10 Murphy, conceded that a model’s results need not necessarily be statistically significant to be  
 11 reliable. ECF No. 297-14, Murphy Dec. 2012 Deposition at 366 (“Question: Is it your opinion that  
 12 in order for a statistical analysis to be reliable it must produce a statistically significant result?  
 13 Answer: Not necessarily. That’s doesn’t have to be true . . . But statistical significance is one thing  
 14 you do look at.”). Dr. Stiroh also conceded that she could not identify any econometrics textbook  
 15 which states that a coefficient has to be statistically significant at the 5% level to be reliable  
 16 evidence. Cisneros Decl., ECF No. 605, Ex. JJJ, Stiroh Dec. 2013 Deposition at 183.

---

18  
 19 <sup>32</sup> *In re Silicone Gel Breast Implants Prods. Liab. Litig.*, 318 F. Supp. 2d 879 (C.D. Cal. Apr. 22,  
 20 2004), cited by Defendants, is inapposite as it does not stand for the proposition that a study is  
 21 inadmissible unless it produces statistically significant results at the conventional levels.  
 22 *Henricksen v. ConocoPhillips Co.*, 605 F. Supp. 2d 1142 (E.D. Wash. Feb. 11, 2009), is similarly  
 23 inapposite because it did not involve any regression model but concerned a qualitative study  
 24 measuring benzene exposure of a very small sample size of twenty-one study participants.  
 25 <sup>33</sup> Reliance on statistical significance to determine the admissibility of expert evidence has been  
 26 rejected by some courts in non-antitrust contexts. *See, e.g., Kadas*, 255 F.3d at 362 (age  
 27 discrimination suit). As the court observed in criticizing such reliance, “[l]itigation generally is not  
 28 fussy about evidence; much eyewitness and other nonquantitative evidence is subject to significant  
 possibility of error, yet no effort is made to exclude it if doesn’t satisfy some counterpart to the 5  
 percent significance test.” *Id.*; *see also Rendon v. AT & T Technologies*, 883 F.2d 388, 397–98 (5th  
 Cir. 1989) (rejecting argument that there is a strict legal benchmark requiring a particular number  
 of standard deviations to demonstrate that data has statistical significance); *Heller v. Shaw  
 Industries, Inc.*, 167 F.3d 146, 158 (3d Cir. 1999); *Waisome v. Port Authority of New York & New  
 Jersey*, 948 F.2d 1370, 1376 (2d Cir. 1991); *MacDissi v. Valmont Industries, Inc.*, 856 F.2d 1054,  
 1058 n.3 (8th Cir. 1988).

1 Finally, the Ninth Circuit has held that lower courts are “not to confuse the role of judge  
2 and jury by forgetting that ‘vigorous cross-examination, presentation of contrary evidence, and  
3 careful instruction on the burden of proof,’ rather than exclusion, ‘are the traditional and  
4 appropriate means of attacking shaky but admissible evidence.’” *United States v. Chischilly*, 30  
5 F.3d 1144, 1154 (9th Cir. 1994) (quoting *Daubert*, 509 U.S. at 596). Heeding this admonition, this  
6 Court previously denied Defendants’ *Daubert* challenge to Dr. Leamer’s conduct regression at the  
7 class certification stage by holding that “the fact that, when the errors are clustered, the Conduct  
8 Regression’s results are not statistically significant at the 95 percent level does not persuade the  
9 Court that the regression is inadmissible (although this failure might affect the model’s probative  
10 value).” April Order at 42 (rejecting Defendants’ Motion to Strike Dr. Leamer’s Testimony, ECF  
11 No. 210, at 16). The Court reasoned it was sufficient that Dr. Leamer’s model could be “attacked  
12 by cross examination, contrary evidence, and attention to the burden of proof.” *Id.* at 50 (citing  
13 *Primiano*, 598 F.3d at 564). Because Defendants have provided no compelling reason why the  
14 Court should deviate from that conclusion, Defendants’ first *Daubert* challenge is DENIED.

15 **b. Defendants’ Second *Daubert* Challenge**

16 Defendants’ second *Daubert* challenge is that Dr. Leamer’s regression is incapable of  
17 segregating the impact on compensation attributable to the challenged agreements from the effects  
18 on compensation attributable to Defendants’ *other* agreements and unilateral conduct. Leamer Mot.  
19 at 10-12. Defendants cite to agreements Intel had with Pixar and Apple, and unilateral policies  
20 Google adopted with respect to two non-defendant companies.<sup>34</sup> Leamer Mot. at 11. Defendants  
21 claim Dr. Leamer conceded that his general conduct variable, which is a dummy variable that is  
22 turned on when the challenged agreements were in effect,<sup>35</sup> “will pick up [the compensation  
23 suppression effects stemming from] anything that is applicable to [the class period from 2005 to

24 <sup>34</sup> Defendants cite an internal Google document which notes the existence of do-not-cold-call  
25 policies effective January 20, 2006 with respect to OpenTV Corporation and Invidi Technologies  
26 Corporation. ECF No. 573, Brown Decl., Ex. 13. Plaintiffs do not appear to dispute the existence  
27 of these policies.

28 <sup>35</sup> This dummy variable technique is not uncommon in regression analysis. Ref. Manual at 313 (“In  
an antitrust case, it may be a variable that takes on the value 1 to reflect the presence of the alleged  
anticompetitive behavior and the value 0 otherwise”).

1 2009] when the [variable] is turned on.” Brown Decl., ECF No. 573, Ex. 1, Oct. 2012 Leamer Dep.  
 2 at 329; *see also id.* at 340 (“To the extent that these [other cold-calling restrictions] are coincident  
 3 in time with . . . these [challenged] bilateral agreements they had, and to the extent that they  
 4 suppress wages during that period of time, it’s going to be picked up by the conduct variable[.]”).  
 5 The Court rejects Defendants’ argument.

6 The Ninth Circuit has held that an antitrust plaintiff is required to distinguish between  
 7 losses attributable to lawful competition and those attributable to unlawful anticompetitive conduct.  
 8 *City of Vernon v. Southern California Edison Co.*, 955 F.2d 1361, 1371-72 (9th Cir. 1992). This is  
 9 because the antitrust laws are intended to compensate plaintiffs only for losses caused by a  
 10 defendant’s unlawful behavior. *Litton Sys., Inc. v. Honeywell, Inc.*, CV 90-4823 MRP (EX), 1996  
 11 WL 634213, at \*2 (C.D. Cal. July 24, 1996). The Supreme Court recently affirmed the rationale  
 12 underlying this principle in a case concerning whether a class could be certified under Rule 23,  
 13 noting that “a model purporting to serve as evidence of damages . . . must measure only those  
 14 damages attributable to that theory.” *Comcast Corp. v. Behrend*, 133 S. Ct. 1426, 1433 (2013).

15 As a preliminary matter, the Court notes that although it need not resolve this question,  
 16 Defendants’ challenge at least appears to present a purely hypothetical problem. Dr. Leamer  
 17 explained his model in fact controls for any compensation suppression effects stemming from  
 18 unchallenged conduct, *unless* all the unchallenged agreements or policies were the same exact  
 19 duration as the unlawful agreements—i.e., started on the first day of the class period in 2005 and  
 20 ended on the last day of the class period in 2009. ECF No. 573, Ex. 1, Oct. 2012 Leamer Dep. at  
 21 340; *see also* Oct. 2012 Leamer Dep. at 1025-27, 1029 (“[I]f there were comparable  
 22 [unchallenged] agreements struck in place *prior* to the conspiracy period and *after* the conspiracy,  
 23 then [the unchallenged conduct’s effects are controlled for] in the statistical analysis.”) (emphasis  
 24 added)). Because Defendants have not presented evidence that the unchallenged conduct satisfies  
 25 this criteria,<sup>36</sup> the problem to which Defendants allude appears to be hypothetical and Dr. Leamer’s

26 \_\_\_\_\_  
 27 <sup>36</sup> In fact, the evidence suggests that the agreements to which Defendants cite do not fit this criteria.  
 28 Defendants have submitted evidence suggesting the Intel/Apple agreement began in 2007, which is  
 one year into the class period. Brown Decl., ECF No. 573, Ex. 11 at 82-83, 110. The Intel/Pixar

1 model should not be excluded due to any alleged failure to segregate out any suppression of  
2 compensation attributable to Defendants' unchallenged conduct.

3 Yet even assuming Dr. Leamer's damages estimate includes some effects from  
4 unchallenged conduct—i.e., that Dr. Leamer should have included a special control to account for  
5 effects of unchallenged conduct without simply assuming, as he did, that it was not the case that all  
6 the unchallenged agreements or policies were the same exact duration as the unlawful agreements,  
7 *see* Oct. 2012 Leamer Dep. at 1028-29—the Court finds that Dr. Leamer's model need not be  
8 excluded under *Daubert* for failure to satisfy the disaggregation requirement, as explained below.

9 First and foremost, it is not clear that the Supreme Court's holding in *Comcast*, a case  
10 arising in the Rule 23 class certification context, is applicable in the present *Daubert* context, when  
11 the Court is tasked with evaluating whether expert testimony is reliable and relevant to the jury's  
12 consideration at trial of the facts as applied to substantive antitrust law. In *Comcast*, the plaintiffs,  
13 more than two million Comcast subscribers, had alleged four different types of antitrust injury that  
14 they claimed collectively resulted in subscribers overpaying for cable TV service, *Comcast*, 133 S.  
15 Ct. at 1430-31, but the district court only found *one* theory amenable to common proof at the class  
16 certification stage. *Id.* at 1431. Despite this determination, the district court accepted the plaintiffs'  
17 damages model even though it holistically calculated damages stemming from *all four* impact  
18 theories. *Id.*<sup>37</sup> Because the model “failed to measure damages resulting from the particular antitrust  
19 injury on which petitioners' liability in this action is premised,” the Supreme Court held that the  
20 plaintiffs had failed to prove a method of quantifying damages on a classwide basis and class

21 agreement apparently started in 2008. *Id.*, Ex. 12 at 158-62. Defendants have presented no  
22 evidence concerning when these agreements ended. Defendants concede that Google's unilateral  
23 policies were effective January 20, 2006, which is also well into the class period. Leamer Mot. at  
24 11. Defendants cite evidence they claim shows that Google removed its Do Not Call List from  
25 Google's internal staffing website and staffing library in 2009. *Id.* Ex. 14 (Google internal email on  
September 29, 2009 suggesting Google suspended any do-not-cold-call policies by removing them  
from internal staffing website and staffing library).

26 <sup>37</sup> Plaintiffs' expert admitted that the model calculated damages resulting from the alleged conduct  
27 “as a whole” and did not attribute damages to any one particular theory of impact. *Comcast*, 133 S.  
28 Ct. at 1434. The model assumed the validity of all four theories of antitrust impact initially  
advanced by Plaintiffs: decreased penetration by satellite providers, overbuilder deterrence, lack of  
benchmark competition, and increased bargaining power. *Id.*

1 certification was thus improper. *Id.* at 1433-35. In the midst of so holding, the Court noted that the  
2 regression model “did not isolate damages resulting from any one theory of antitrust impact” and  
3 thus failed the requirement that “a model purporting to serve as evidence of damages in this class  
4 action must measure only those damages attributable to that theory. If the model does not even  
5 attempt to do that, it cannot possibly establish that damages are susceptible of measurement across  
6 the entire class for purposes of Rule 23(b)(3).” *Id.* at 1431, 1433 (“There is no question that the  
7 model failed to measure damages resulting from the particular antitrust injury on which petitioners’  
8 liability in this action is premised.”). *Comcast* is thus a case which discussed the requirements for  
9 showing Rule 23 predominance. The precise question the Court addressed was whether  
10 “certification was improper because [plaintiffs] had failed to establish that damages could be  
11 measured on a classwide basis.” *Id.* at 1431 n.4. Notably, the Court did not address standards of  
12 admissibility of expert testimony under *Daubert*. Accordingly, it is not at all clear that *Comcast*’s  
13 holding concerning Rule 23 predominance – that “a model purporting to serve as evidence of  
14 damages in [a] class action must measure only those damages attributable to [plaintiffs’] theory,”  
15 *id.* at 1433, in order to serve as a basis for showing that damages can be proven on a classwide  
16 basis – is applicable to the *Daubert* stage when courts are evaluating whether an expert’s model is  
17 admissible under Rule 702. In fact, the Court noted that it was *not* addressing the question of  
18 whether the damages model at issue was admissible evidence under Rule 702. *Id.* at 1431 n.4.  
19 Further, the Court expressly noted that its ruling “turn[ed] on the straightforward application of  
20 class-certification principles,” and noted, while addressing the dissent, that this case provided “no  
21 occasion for” discussion of “substantive antitrust law.” *Id.* at 1433. In contrast, issues raised at the  
22 *Daubert* stage no doubt implicate substantive antitrust law, as the entire issue is whether an  
23 expert’s testimony will be “relevant” to the jury’s consideration at trial of the facts as applied to  
24 substantive antitrust law.

25 Yet even assuming *Comcast* and the Ninth Circuit cases citing the disaggregation principle  
26 do apply in the *Daubert* context,<sup>38</sup> the Court finds Dr. Leamer’s model is not inadmissible because

27 <sup>38</sup> The Ninth Circuit cases that recite the disaggregation principle do not address the admissibility  
28 of the expert’s analysis under *Daubert* or otherwise, but rather consider the sufficiency of such



1 Defendants read *Comcast*'s disaggregation holding too broadly. This is because the rationale  
 2 underlying Defendants' argument—that *Comcast* holds that a damages model must *precisely*  
 3 segregate out effects of every possible factor, including legal conduct, that could impact the  
 4 dependent variable, in order to be admissible under *Daubert*—directly contravenes well-  
 5 established Supreme Court and Ninth Circuit authority holding that damages in antitrust cases  
 6 often cannot, and therefore need not, be proven with exact certainty. *Zenith Radio Corp. v.*  
 7 *Hazeltine Research, Inc.*, 395 U.S. 100, 123 (1969) (“[D]amages issues in [antitrust] cases are  
 8 rarely susceptible of the kind of concrete, detailed proof of injury which is available in other  
 9 contexts.”); *J. Truett Payne Co. v. Chrysler Motors Corp.*, 451 U.S. 557, 566 (1981) (expressing  
 10 “willingness to accept a degree of uncertainty” in antitrust damage proof given that “[t]he vagaries  
 11 of the marketplace usually deny us sure knowledge of what plaintiff’s situation would have been in  
 12 the absence of the defendant’s antitrust violation”); *Knutson v. Daily Review, Inc.*, 548 F.2d 795,  
 13 811 (9th Cir. 1976) (proof of damages is sufficient “if the evidence show[s] the extent of the  
 14 damages as a matter of just and reasonable inference, although the result be only approximate”)  
 15 (citation omitted); *Moore v. James H. Matthews & Co.*, 682 F.2d 830, 836 (9th Cir. 1982) (“[A]n  
 16 antitrust plaintiff is only obligated to provide the trier-of-fact with some basis from which to  
 17 estimate reasonably, and without undue speculation, the damages flowing from the antitrust  
 18 violations.”) (citation omitted); *see also In re Scrap Metal Antitrust Litig.*, 527 F.3d 517, 533 (6th  
 19 Cir. 2008) (“[T]he antitrust cases are legion which reiterate the proposition that, if the fact of

---

20 evidence to prove other matters. For example, in *City of Vernon*, the plaintiff alleged the defendant  
 21 engaged in anticompetitive practices by disallowing plaintiff’s use of defendant’s power  
 22 transmission lines, maintaining rate schedules that were discriminatory, and preventing plaintiff  
 23 from acquiring power from alternate suppliers. 955 F.2d at 1363. The plaintiff’s damage study  
 24 assumed that “all of [these] acts contributed to the damage figure.” *Id.* at 1373. The district court  
 25 found that some of the acts were lawful and that the damage estimate thus “failed to segregate the  
 26 losses, if any, caused by acts which were not antitrust violations from those that were.” *Id.* at 1372.  
 27 Accordingly, the court granted defendant summary judgment because plaintiffs had presented no  
 28 evidence of damages. *Id.* at 1372. On appeal, the Ninth Circuit affirmed because the plaintiff’s  
 aggregated damage proof (which encompassed claims which were dismissed) was unduly  
 speculative and could not support a damage recovery. *Id.* at 1373. The Court notes that at the  
 hearing on Defendants’ motion to exclude Dr. Leamer’s testimony, Defendants could not cite to  
 any case in the Ninth Circuit which applies or addresses the disaggregation principle in the  
*Daubert* context.

1 damages is proven, the actual computation of damages may suffer from minor imperfections.”)  
 2 (citation omitted). Defendants’ argument is even belied by the *Comcast* Court’s own  
 3 acknowledgment that “[damages] [c]alculations need not be exact” in antitrust cases and that  
 4 *Comcast* did not change substantive antitrust law. *Comcast*, 133 S. Ct. at 1433. Accordingly, the  
 5 most plausible reading of *Comcast* is that by mandating that a damages model in a class action case  
 6 “measure only those damages attributable to [plaintiffs’] theory,” the Supreme Court did not alter  
 7 this fundamental principle of antitrust law by requiring that an expert’s model precisely tailor, in a  
 8 fool-proof way, the connection between the damages claimed and the anticompetitive conduct  
 9 alleged in order to be admissible under *Daubert*. Rather, the Court was concerned with damages  
 10 models that attempt to calculate damages stemming from *various* theories of antitrust impact which  
 11 were not at issue—i.e., damages models that “do[] not even attempt to [measure damages  
 12 attributable to plaintiffs’ theory].” *Id.*

13 Here, Dr. Leamer’s model does not suffer from the critical flaw in *Comcast*. It is undisputed  
 14 that Dr. Leamer’s model evaluates damages resulting from only *one* theory of antitrust injury—a  
 15 decrease in compensation due to the challenged anti-solicitation agreements. Nor is Dr. Leamer’s  
 16 model one that “does not even attempt to” measure damages stemming only from the challenged  
 17 agreements. *Id.* His model expressly controls for many other variables that impact compensation in  
 18 an effort to ensure that the estimated damages result only from the challenged conduct. *See* Leamer  
 19 Opening ¶ 19; Leamer Reply Rep. ¶¶ 91-93. This includes factors like employees’ age and gender,  
 20 worker tenure, and location differences, industry effects including San Jose information sector  
 21 hiring, and employer effects including firm revenue and firm hiring. *Id.*<sup>39</sup> Further, Dr. Leamer has  
 22 stated that his model controls for, and thus segregates out, the effect of unchallenged conduct, so

23 <sup>39</sup> This is precisely what distinguishes Defendants’ other cited cases, where damages models failed  
 24 to take into account critical variables that could have impacted the independent variable at issue.  
 25 *See Concord Boat Corp. v. Brunswick Corp.*, 207 F.3d 1039, 1056 (8th Cir. 2000) (antitrust  
 26 damages expert conceded his model, which “ignored inconvenient evidence,” completely failed to  
 27 account for various critical market events that could impact the independent variable); *Blue Cross  
 28 and Blue Shield United of Wisconsin v. Marshfield Clinic*, 152 F.3d 588, 593 (7th Cir. 1998)  
 (excluding statistical study which failed to correct for any other factor that could have affected the  
 independent variable, price in clinical services, except for just one, thus effectively attributing the  
 “entire difference [in price] . . . to the [anticompetitive conduct.]”).

1 long as certain assumptions hold. While Plaintiffs have presented no evidence that these  
 2 assumptions did in fact hold, the fact that Dr. Leamer’s model presents some uncertainty as to  
 3 whether some compensation-related effects of unchallenged conduct are included in the damages  
 4 estimate does not provide a basis for exclusion. It is sufficient that Dr. Leamer’s model is  
 5 substantially more narrowly tailored — with respect to the connection between damages and  
 6 challenged conduct — than the damages model at issue in *Comcast*. Because this Court concludes  
 7 that Dr. Leamer’s model can provide the “trier-of-fact with some basis from which to estimate  
 8 reasonably, and without undue speculation, the damages flowing from the antitrust violations,”  
 9 *Moore*, 682 F.2d at 836, Dr. Leamer’s model will not be excluded for failure to segregate out any  
 10 effects of unchallenged conduct.<sup>40</sup> Accordingly, Defendants’ second *Daubert* challenge is  
 11 DENIED.

### 12 c. Defendants’ Third *Daubert* Challenge

13 The Court now addresses Defendants’ third *Daubert* challenge that Dr. Leamer’s “total new  
 14 hires” variable is inconsistent with Plaintiffs’ theory of harm. Leamer Mot. at 12-14. Defendants  
 15 rely on *Comcast*’s requirement that “any model supporting a plaintiff’s damages case must be  
 16 consistent with its liability case[.]” *Comcast*, 133 S. Ct. at 1433 (citation omitted).<sup>41</sup> Leamer Mot.

---

18 <sup>40</sup> Defendants also assert in a footnote that “Dr. Leamer’s model [] cannot isolate the impact of the  
 19 [anti-solicitation] agreements on compensation from other significant [macroeconomic and  
 20 microeconomic events] during the class period,” such as “the 2008-2009 recession, which would  
 21 have negatively impacted compensation” or “the effect of Defendants’ different responses to the  
 22 recession in setting compensation.” Leamer Mot. at 11, 12 n.5 (recapping Stiroh Rebuttal ¶¶ 198-  
 23 203). Defendants are incorrect. Dr. Leamer directly responded to Dr. Stiroh’s criticism by noting  
 24 he *did* control for these two particular factors by including “highly pertinent market and firm-  
 25 specific recession-sensitive variables” like firm revenue, firm hiring, total number of new hires,  
 26 firm profit, and San Jose Information sector hiring. Leamer Reply Rep. ¶¶ 91-93. Indeed, the fact  
 27 that Dr. Leamer’s model includes various macro-economic variables to control for these factors  
 28 distinguishes this case from *In re REMEC Inc. Securities Litig.*, 702 F. Supp. 2d 1202, 1273-75  
 (S.D. Cal. Apr. 21, 2010) (excluding regression model under *Daubert*), which Defendants cite,  
 Leamer Mot. at 11 n.4. In that case, the expert had made “no attempt to account for other possible  
 causes” and failed to “incorporate major [macroeconomic] independent variables.” *In re Remec*,  
 702 F.Supp.2d at 1273 (citation omitted).

<sup>41</sup> In *Comcast*, the Supreme Court held that the plaintiffs’ inability to match their damages model  
 with any one theory of liability meant the plaintiffs’ damages case was not “consistent with its  
 liability case[.]” *Comcast*, 133 S. Ct. at 1433.

1 at 2. The Court disagrees with Defendants. Defendants make three arguments in connection with  
2 their third *Daubert* challenge, and the Court addresses each in turn.

3 **i. Defendants' Claim that Dr. Leamer's Total New Hires**  
4 **Variable is Inconsistent with Plaintiffs' Theory of Harm**

5 Defendants argue Dr. Leamer's conduct regression is inconsistent with Plaintiffs' theory of  
6 harm because it fails to account for the fact that under Plaintiffs' theory, the impact of a  
7 Defendant's "increased recruiting and hiring [] on another Defendant would depend on whether  
8 there was a[n anti-solicitation] agreement between those two firms."<sup>42</sup> Leamer Mot. at 13.  
9 Defendants claim this is because Dr. Leamer uses a "total new hires" variable<sup>43</sup> that is the sum of  
10 all new hires by all Defendants in a given year. Defendants claim that because Dr. Leamer applies  
11 this same variable to every employee in the class regardless of employer, Dr. Leamer "assumes the  
12 impact of increasing hiring by all Defendants is the same on an employee at Google (which had  
13 three [anti-solicitation] agreements) as it was on an employee at Adobe (which had only one [anti-  
14 solicitation agreement])," which Defendants claim is an assumption "fundamentally at odds" with  
15 Plaintiffs' theory of the impact of the anti-solicitation agreements. *Id.* They claim that to correct for  
16 this error, Dr. Stiroh "split" the total new hires variable into component parts so that the model  
17 would reflect new hiring by firms that had anti-solicitation agreements with each other "separately  
18 from new hiring by firms that did not have such agreements with each other." *Id.* (citing Stiroh  
19 Decl. ¶¶ 8-10); Leamer Reply at 8.<sup>44</sup> In essence, Defendants' claim boils down to an argument that  
20

21 <sup>42</sup> Defendants do not argue this case poses the same problem as in *Comcast* where the plaintiffs'  
22 damages model calculated damages resulting from various theories of impact, thus creating a  
23 situation in which the plaintiffs' damages case was inconsistent with its liability case because the  
24 model could not attribute damages to only the one theory of impact left in the case. Nor could they,  
25 as there is no dispute that Dr. Leamer's model evaluates only one theory of antitrust injury – a  
26 decrease in compensation due to the anti-solicitation agreements.

27 <sup>43</sup> This variable was included by Dr. Leamer as a "macro-factor to control for the overall demand  
28 for labor by all defendants." Leamer Reply Rep. ¶ 131.

<sup>44</sup> Specifically, Dr. Stiroh removed the "total new hires" variable from the model, and inserted  
three new variables: (1) total number of hires of [do-not-cold-call] firms, i.e., the number of hires  
of the firms with which a particular Defendant had agreements; (2) total number of hires of non-  
[do-not-cold-call] firms, i.e., the number of hires of the firms with which a particular defendant had  
no agreements (for the ADOBE variable, it is computed as the total number of hires by all non-

1 Dr. Leamer's total new hires variable is "improperly aggregated" because it combines the impact  
 2 of the hiring by firms with whom each Defendant has an anti-solicitation agreement with the  
 3 impact of hiring by other Defendants. *Id.*

4 The Court is not convinced that Dr. Leamer's decision to use an aggregated total new hires  
 5 variable means his model "is at odds with Plaintiffs' theory of harm," Leamer Reply at 8.  
 6 Defendants' argument is based on the assumption that under Plaintiffs' theory, "the impact of a  
 7 Defendant's increased recruiting and hiring [] on another Defendant would depend on whether  
 8 there was a[n anti-solicitation] agreement between those two firms," and accordingly, the "impact  
 9 of an increase in recruiting and hiring activity at Intel, [for example,] would be different with  
 10 respect to an employee at Google (which had a[n anti-solicitation agreement] with Intel) than it  
 11 would be for an employee at Adobe (which did not have a[n anti-solicitation agreement] with  
 12 Intel)." Leamer Mot. at 13. Yet Defendants fail to persuasively explain *why* or *how* Plaintiffs'  
 13 theory must lead to this conclusion. The contours of Defendants' argument are not entirely clear.  
 14 However, Defendants' argument appears to be that, under Plaintiffs' theory, the impact on  
 15 compensation—i.e. on employees' wages—of one Defendant's increase in hiring should be smaller  
 16 on a second Defendant who had an anti-solicitation agreement with the first Defendant as  
 17 compared to the impact on a third Defendant who did *not* have an agreement with the first  
 18 Defendant.<sup>45</sup> This is so, Defendants appear to contend, because Defendant pairs who did not have  
 19 agreements faced no limitations on information flow between them, while Defendant pairs who  
 20 were parties to an agreement did face such limits. Leamer Mot. at 12. Presumably, Defendants'  
 21 claim is that because there is more information flow about new job options between two firms  
 22 without an anti-solicitation agreement, an increase in hiring at one Defendant firm would lead to a  
 23 greater increase in wages at the second Defendant firm because (a) the employees at the second  
 24 firm would be more aware of the potential salaries and benefits that come with the job openings at

25  
 26 APPLE defendants); and (3) the conduct variable interacted with the total number of new hires of  
 [do-not-cold-call] firms. Stiroh Rebuttal ¶ 187-88.

27 <sup>45</sup> Defendants do not explicitly state whether under Plaintiffs' theory, the impact of a Defendant's  
 28 increase in hiring on another Defendant should be *greater* or *smaller* when the Defendant pair has  
 an anti-solicitation agreement, compared to a Defendant pair that does not.

1 the first firm, and (b) this awareness will force the second firm to raise its employees' wages in  
2 order to ensure that its employees stay.

3 The Court need not resolve the question whether Plaintiffs' theory necessarily leads to this  
4 conclusion, as Defendants claim it does, because the critical point is that Defendants have failed to  
5 explain, both in their briefing and at the hearing, why and how Dr. Leamer's inclusion of an  
6 *aggregated* total new hires variable in his model means his model is "inconsistent" with this  
7 allegedly logical implication of Plaintiffs' theory. Further, Defendants' argument is particularly  
8 unpersuasive given that Dr. Leamer's model not only includes a *total* new hires variable to control  
9 for the overall demand for labor by all defendants, but also "include[s] a different variable of hiring  
10 by each firm," Leamer Reply Rep. ¶ 131; Leamer Opening, Ex. 3, variable #27. The Court notes  
11 that Defendants did not respond to the Court's question at the hearing regarding why the existence  
12 of individual hiring variables for *each* firm in Dr. Leamer's model, *see* Leamer Reply Rep. ¶ 131,  
13 does not address Defendants' concern that Dr. Leamer's use of an *aggregated* total new hires  
14 variable means his model is somehow inconsistent with Plaintiffs' theory of harm.

15 Ultimately, while framed as an argument that Dr. Leamer's model violates *Comcast*,  
16 Defendants' argument is, in essence, that Dr. Leamer's model fails to include variables that take  
17 into account the "distinction between hiring among Defendants with a[n anti-solicitation]  
18 agreement and other hiring." Leamer Reply at 8. That is a prototypical concern that goes to weight,  
19 not admissibility. *Bazemore v. Friday*, 478 U.S. 385, 400 (1986) ("Normally, failure to include  
20 variables will affect the analysis' probativeness, not its admissibility."). Accordingly, the Court  
21 rejects Defendants' argument that without Dr. Stiroh's suggested changes to Dr. Leamer's model,  
22 Dr. Leamer's model is inconsistent with Plaintiffs' theory of harm and must be excluded.<sup>46 47</sup>

23 <sup>46</sup> Further, while the Court need not resolve whether Dr. Stiroh's solution to this alleged problem is  
24 statistically sound, Dr. Leamer explains that her approach is not necessarily sound but is one way  
25 to effectively change around the signs of the regression coefficients. By removing the "total new  
26 hires" variable which has a large *t*-statistic compared to many of the other coefficients, *see* Leamer  
27 Opening, Ex. 3 (absolute value of 4.84), Dr. Stiroh's approach "wreak[s] havoc on the [other]  
28 coefficients," thus disrupting the final damages estimate. Leamer Reply Rep. ¶ 115. Dr. Leamer's  
conclusion is not without support, *see* Edward Leamer, "A Result on the Sign of Restricted Least  
Squares Estimates," *Journal of Econometrics*, 3 (1975) at 387-90. The fact that Dr. Leamer's  
opinion finds support in *his own* scholarship weighs at least slightly in favor of finding his model

1 **ii. Defendants’ Claim that Dr. Leamer’s Total New Hires**  
2 **Variable has the “Wrong” Coefficient Sign**

3 In the section concerning their third *Daubert* challenge, Defendants also take issue with  
4 how the total new hires variable has a negative coefficient, which they claim is “contrary to basic  
5 economic principles” because it indicates a negative relationship between Defendants’ total hiring  
6 and employee compensation—i.e., that as Defendants hire more employees, they pay their  
7 employees less. Leamer Mot. at 13-14 (summarizing Stiroh Rebuttal ¶ 163). The Court is not  
8 persuaded that the variable’s negative coefficient deems Dr. Leamer’s model so unreliable such  
9 that it fails *Daubert*’s reliability prong, for Dr. Leamer provides various plausible explanations as  
10 to why the negative coefficient is not necessarily an unexpected outcome. First, he explains that  
11 “dynamic” regressions like this one sometimes lead to results that may appear counterintuitive at  
12 first. Leamer Reply Rep. ¶ 60; *see also* Cisneros Decl., ECF No. 605, Ex. NNN, Leamer Nov. 2013  
13 Dep. at 1008.<sup>48</sup> Dr. Stiroh provides no rebuttal to this point in her declaration submitted in support  
14 of Defendants’ motion to exclude. More importantly, Dr. Leamer provides at least two plausible,  
15 even if not persuasive, market-based explanations as to why it is not “wrong” for the total new  
16 hires variable to have a negative coefficient—i.e., why it makes sense for increases in new hires to  
17 be negatively correlated with increased compensation. Leamer Reply Rep. ¶ 119 (explaining that  
18 periods of economic recovery after a recession are typified by periods of ramped-up hiring but  
19 persistent low wages as employers bring back laid-off employees; it is only later that the labor

20 does not fail the reliability prong. *Daubert v. Merrell Dow. Pharm., Inc.*, 43 F.3d 1311, 1317 (9th  
21 Cir. 1995) (“One very significant fact to be considered is whether the experts are proposing to  
22 testify about matters growing naturally and directly out of research they have conducted  
23 independent of the litigation, or whether they have developed their opinions expressly for purposes  
24 of testifying.”).

25 <sup>47</sup> The Court notes that Defendants mischaracterize one of Plaintiffs’ arguments, claiming Plaintiffs  
26 “try to justify Dr. Leamer’s total new hires variable as a ‘macro-factor’ that controls for overall  
27 labor demand.” Leamer Reply at 8. That is incorrect. Plaintiffs note that the variable controls “for  
28 the overall demand for labor *by all Defendants*.” Leamer Opp. at 14 (emphasis in original) (citation  
omitted). Dr. Leamer has consistently testified the same. Leamer Reply Rep. ¶ 131.

<sup>48</sup> A “dynamic” regression model, or a “distributed lag model,” is one in which the statistician  
regresses dependent variable “y” at time *t* on the present and past values of independent variable  
“x.” Larry D. Haugh et al., *Identification of Dynamic Regression Models (Distributed Lag Models  
Connecting Two Time Series)*, 72 J. Am. Stat. Assoc. 121 (1977).

1 market “tighten[s] enough to put upward pressure on wages”); *id.* ¶ 120 (setting forth another  
 2 explanation that high levels of hiring may leave the impression that replacements are easy to find,  
 3 thus holding down wages of incumbents due to their poor bargaining position);<sup>49</sup> *see also In re*  
 4 *Plastics Additives*, No. 03–CV–2038, 2010 WL 3431837, at \*18 (E.D. Pa. Aug. 31, 2010)  
 5 (dismissing plaintiffs’ argument that coefficients had the “wrong” sign, which indicated a negative  
 6 relationship between price and demand, because while “Plaintiffs ha[d] shown that the coefficients  
 7 . . . were inconsistent with theoretical explanations,” they had not “given any basis for their  
 8 expectation that the conditions in the markets . . . would be consistent with economic theory,” and  
 9 crediting defense expert’s opinion that market conditions could lead to an inverse relationship  
 10 between demand and price). This Court need not decide whether Dr. Leamer’s market-based  
 11 explanations are in fact correct, as “[t]he evidentiary requirement of reliability [under *Daubert*] is  
 12 lower than the merits standard of correctness.” *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 744  
 13 (3d Cir. 1994); *Primiano*, 598 F.3d at 564 (“[T]he test under *Daubert* is not the correctness of the  
 14 expert’s conclusions but the soundness of his methodology.”) (citation omitted).<sup>50</sup> In light of Dr.  
 15 Leamer’s at least plausible explanations, the Court declines to conclude that the existence of a  
 16 negative coefficient on the total new hires variable means Dr. Leamer’s applied methodology was  
 17 so flawed as to warrant exclusion of his regression at trial. It is noteworthy that the Ninth Circuit  
 18 has held that a court may admit even “somewhat questionable testimony if it falls within ‘the range  
 19 where experts might reasonably differ, and where the jury must decide among the conflicting views  
 20 . . . .’” *S.M. v. J.K.*, 262 F.3d 914, 921 (9th Cir. 2001), *as amended by* 315 F.3d 1058 (9th Cir. 2003)  
 21 (citation omitted).<sup>51</sup>

22 \_\_\_\_\_  
 23 <sup>49</sup> Dr. Leamer provided the same two explanations in his December 2013 deposition. Cisneros  
 Decl., ECF No. 605, Ex. OOO at 1189.

24 <sup>50</sup> Maintaining this distinction between the evidentiary requirement of reliability and the higher  
 25 standard of whether the expert’s conclusions are correct “is indeed significant as it preserves the  
 fact finding role of the jury.” *In re TMI Litig.*, 193 F.3d 613, 665 n.90 (3d Cir. 1999).

26 <sup>51</sup> Dr. Leamer also explains that the negative sign may be the result of “collinearity among the  
 27 variables,” Leamer Reply Rep. ¶ 61, which means that multiple correlated independent variables  
 are competing to explain the same dependent variable. *Id.* at 61, 72; *see also* ABA Section of  
 28 Antitrust Law, *Proving Antitrust Damages: Legal and Economic Issues*, Ch. 6, “Economics and  
 Regression Analysis” at 150 (2010) (“Proving Antitrust Damages”). While the Court acknowledges



1 **iii. Defendants' Claim that Dr. Leamer's Conduct Regression**  
 2 **is Unduly Sensitive to Intel**

3 In connection with their third *Daubert* challenge, Defendants also claim Dr. Leamer's  
 4 regression is unduly "sensitive" to changes in Intel's hiring and that the "the damages allegedly  
 5 caused by [anti-solicitation] agreements between other Defendants turns on Intel's behavior."  
 6 Leamer Mot. at 14; Leamer Reply at 10. In support, Defendants pose a hypothetical they claim  
 7 demonstrates that "changing the start date of Intel's alleged participation [from 2005 to 2006] has  
 8 an enormous and irrational influence on the estimates of Dr. Leamer's model." Leamer Mot. at 14.  
 9 Defendants claim that when the 2006 date is utilized, Dr. Leamer's damage estimate is reduced by  
 10 over one billion dollars, and that "the enormous effect this relatively minor change has on Dr.  
 11 Leamer's model underscores its inherent unreliability." *Id.* at 14 n.6 (summarizing Stiroh Rebuttal  
 12 ¶¶ 179-80). The Court concludes that any alleged sensitivity in Dr. Leamer's model to Intel's data  
 13 does not deem his model so inherently unreliable such that it must be excluded from the jury's  
 14 consideration under *Daubert*.

15 The Court recognizes that sensitivity tests can be utilized as one way to test the reliability of  
 16 regression estimates, as Dr. Leamer himself has acknowledged. Brown Decl., ECF No. 215, Ex. 1  
 17 at 351 (noting a "sensitivity analysis ... [is an] exploration of how sensitive [a model's]  
 18 conclusions are to a choice of variables."); Leamer Reply Rep. ¶ 92;<sup>52</sup> *see also* Rubinfeld at 436-37  
 19 ("Estimated regression coefficients can be highly sensitive to particular data points. Suppose, for  
 20 example, that one data point deviates greatly from its expected value, as indicated by the regression

21 that collinearity may cause regression estimates to becomes less precise, *see Realcomp II, Ltd. v.*  
 22 *F.T.C.*, 635 F.3d 815, 834 (6th Cir. 2011); Ref. Manual at 324; Rubinfeld at 465, Defendants have  
 23 not raised this issue nor provided any argument as to why this would deem Dr. Leamer's model  
 24 unreliable under the *Daubert* standard. Other courts have admitted regressions even in the face of  
 25 expert disagreement regarding whether collinearity posed a problem. *In re High Fructose Corn*  
 26 *Syrup Antitrust Lit.*, 295 F.3d 651, 660-61 (7th Cir. 2002) (refusing to second-guess district court's  
 27 admission of defense regression analysis where parties' experts disagreed on whether collinearity  
 28 problem had been resolved or if regression was fundamentally unreliable). This is not surprising  
 given that the concept of collinearity is not a *methodology*, but a common phenomenon that results  
 when using the methodology of regression analysis. *Daubert*, 509 U.S. at 595 ("The focus [of the  
 admissibility inquiry], of course, must be solely on principles and methodology, not on the  
 conclusions that they generate.").

<sup>52</sup> *See also* Edward Leamer, *Global Sensitivity Results for Generalized Least Squares Estimates*, 79  
 J. Am. Stat. Assoc. 867-70 (1984) (considering sensitivity of regression estimates).

1 equation . . . It would not be unusual in this situation for the coefficients in a multiple regression  
 2 analysis to change substantially if the data point were removed from the sample.”<sup>53</sup> Yet the Court  
 3 is not convinced that Dr. Leamer’s model is in fact unduly sensitive to Intel’s data or that any  
 4 alleged sensitivity means his regression model fails *Daubert*’s reliability prong. Defendants do not  
 5 explain or provide any evidence as to why a reduction of \$1 billion, namely around thirty percent  
 6 of Dr. Leamer’s original \$3.06 billion damages estimate, inherently means or suggests that Dr.  
 7 Leamer’s damages estimate improperly “turns on Intel’s behavior.” Leamer Mot. at 14. It might  
 8 very well be the case that when the start date of a particular agreement is changed for any *other*  
 9 defendant, the damages estimate is similarly reduced by such a large sum, or larger. Defendants do  
 10 not provide any further information so that the Court may make an appropriate comparison.<sup>54</sup>  
 11 Further, the Court observes that it does not seem at all unexpected or “irrational,” as Defendants  
 12 characterize it, for the damages estimate to be reduced by a large percentage when a 2006 start date  
 13 for Intel is utilized as opposed to a 2005 start date. This is because a model that utilizes a 2006 start  
 14 date neglects to take into account the compensation suppression that would result for an entire year  
 15 from a cease of cold-calling at the Defendant—i.e., Intel – whose employees comprise the majority  
 16 of the class, or 40, 357 members out of the 64, 613 person class. Leamer Reply Rep. Table 1.<sup>55</sup>

17 \_\_\_\_\_  
 18 <sup>53</sup> “Sensitivity analysis is the study of how the variation in the output of a model (numerical or  
 19 otherwise) can be apportioned, qualitatively and quantitatively, to different sources of variation,  
 20 and how the given model depends on the information fed into it. . . . It allows the analyst to assess  
 21 the effects on inferences of departures from the assumptions made and the data values, [and] detect  
 22 outliers or wrong data values . . .” Enrique Castillo, et al., *A general method for local sensitivity*  
 23 *analysis with application to regression models and other optimization problems*, 46.4  
 24 *Technometrics* 430 (2004); *see also* D.W. Bacon et al., *A profile-based approach to parametric*  
 25 *sensitivity analysis of nonlinear regression models*, 43.4 *Technometrics* 425 (2001) (“Predictions  
 26 from a nonlinear regression model are subject to uncertainties propagated from the estimated  
 27 parameters in the model. Parameters exerting the strongest influence on model predictions can be  
 28 identified by a sensitivity analysis.”).

<sup>54</sup> At the same time, Defendants also claim that the change they implement (changing Intel’s  
 participation date from 2005 to 2006) is just a “minor modification,” Leamer Reply at 10, but fail  
 to explain why such a change would be “minor” compared to other changes in assumptions that  
 one could make to the model.

<sup>55</sup> Dr. Leamer alludes to this point when explaining that the fact that the damages estimate changes  
 substantially when the date of Intel’s agreement is changed by one year does not mean his model is  
 unreliable but is an expected outcome. Leamer Reply Rep. ¶ 112 (“[C]hanging the date of the  
 conspiracy would be expected to have substantial changes in the measured effect of the conduct.

1 Even putting aside the question whether Dr. Leamer’s damages estimate is improperly  
 2 driven by Intel’s data, Defendants do not cite, nor has this Court found, any case holding that the  
 3 sensitivity of a dependent variable to one or more independent variables categorically means the  
 4 model must be deemed “junk science” under *Daubert*.<sup>56</sup> *AstenJohnson*, 740 F.3d at 463; *c.f.*  
 5 *Hartley v. Dillard’s, Inc.*, 310 F.3d 1054, 1061 (8th Cir. 2002) (“Only if the expert’s opinion is so  
 6 fundamentally unsupported that it can offer no assistance to the jury must such testimony be  
 7 excluded.”) (citation omitted). In light of these considerations, and this Court’s “broad discretion”  
 8 in deciding whether evidence is reliable and helpful to the trier of fact, *see Hankey*, 203 F.3d at  
 9 1168, the Court concludes that Defendants’ argument goes to the weight, not admissibility of Dr.  
 10 Leamer’s model, and that Defendants may appropriately raise their concerns on cross-examination  
 11 or through Dr. Stiroh’s testimony. It will then be up to the jury to assess the credibility of the  
 12 experts—i.e., whether and to what degree any alleged sensitivity of the model to Intel’s data means  
 13 that the predictive value of Dr. Leamer’s regression is low or its regression estimates are imprecise.  
 14 *Wylar Summit P’ship v. Turner Broad. Sys., Inc.*, 235 F.3d 1184, 1192 (9th Cir. 2000) (“Weighing  
 15 the credibility of conflicting expert witness testimony is the province of the jury.”). Accordingly,  
 16 the Court rejects Defendants’ argument that Dr. Leamer’s conduct regression is unduly sensitive to  
 17 Intel. In sum, the Court DENIES Defendants’ third *Daubert* challenge.

18 **d. Defendants’ Fourth *Daubert* Challenge**

19 The Court now addresses Defendants’ fourth and final *Daubert* challenge. Defendants  
 20 claim “Dr. Leamer cannot rely on his conduct regression to establish the existence of classwide  
 21 impact when he admits the model is incapable of showing that each class member was injured.”  
 22  
 23

---

24 It’s not just that a portion of Intel’s employment is being removed from the class, but that some  
 25 suppressed compensation is then being treated as ‘normal.’”). While Dr. Leamer does not explain  
 26 in further detail why the resulting change in his estimate does not render his results unreliable,  
 27 “gaps” in an expert’s reasoning may go to the weight of the expert evidence, not its admissibility.  
 28 *Campbell ex rel. Campbell v. Metro. Prop. & Cas. Ins. Co.*, 239 F.3d 179, 186 (2nd Cir. 2001).  
<sup>56</sup> At the hearing on Defendants’ motion to exclude Dr. Leamer’s testimony, Defendants could not  
 cite to any case which holds that the sensitivity of a dependent variable to one or more independent  
 variables in a regression model means the model must be deemed unreliable under *Daubert*.

1 Leamer Mot. at 15. Defendants accordingly assert that “Dr. Leamer’s opinion that there was a  
2 classwide impact must be excluded.” *Id.* The Court denies Defendants’ request.

3 In antitrust cases, “[p]roof of injury (whether or not an injury occurred at all) must be  
4 distinguished from calculation of damages (which determines the actual value of the injury).”  
5 *Newton v. Merrill Lynch, Pierce, Fenner & Smith, Inc.*, 259 F.3d 154, 188 (3d Cir. 2001); *Catlin v.*  
6 *Washington Energy Co.*, 791 F.2d 1343, 1350 (9th Cir. 1986) (“[T]he requirement that plaintiff  
7 prove ‘both the *fact* of damage and the *amount* of damage . . . are two separate proofs.’ ”)  
8 (emphasis in original) (citation omitted). Defendants’ challenge implicates the element of  
9 “[a]ntitrust ‘impact’—also referred to as antitrust injury—[which] is the ‘fact of damage’ that  
10 results from a violation of the antitrust laws.” *In re Dynamic Random Access Memory (DRAM)*  
11 *Antitrust Litig.*, No. 02-1486, 2006 WL 1530166, at \*7 (N.D. Cal. June 5, 2006). Courts have  
12 indeed held that plaintiffs must prove every class member was injured by the alleged violation in  
13 order to prove the element of impact. *See In re Hydrogen Peroxide Antitrust Litig.*, 552 F.3d 305,  
14 311 (3d. Cir. 2008) (“[E]very class member must prove at least some antitrust impact resulting  
15 from the alleged violation.”); *Blades v. Monsanto Co.*, 400 F.3d 562, 571-72 (8th Cir. 2005)  
16 (plaintiffs must be able to prove injury to each class member); *DRAM*, 2006 WL 1530166, at \*7  
17 (same).

18 Here, Defendants correctly note that Dr. Leamer concedes his regression does not  
19 determine whether any individual class member was impacted. Brown Decl., ECF No. 573, Ex. 1,  
20 Oct. 2012 Leamer Dep. at 44, 56-57.<sup>57</sup> However, Defendants’ argument fails because their main  
21 basis for exclusion hinges on a misleading characterization of Dr. Leamer’s opinion regarding  
22 impact. While Defendants claim Dr. Leamer relies on his regression model to establish the  
23 existence of “classwide impact” as defined by Defendants—i.e., that every class member was in  
24 fact impacted—Dr. Leamer has never opined that his regression proves that every class member  
25 was in fact impacted. Rather, he has consistently stated that his regression provides reliable proof  
26 that the anti-solicitation agreements had a *general* impact on the class. *See Class. Cert. Opening*

27 <sup>57</sup> Dr. Leamer explained that his regression estimated *total* undercompensation per defendant per  
28 year. Brown Decl., ECF No. 573, Ex. 1, Oct. 2012 Leamer Dep. at 56.

1 Report at 62 (noting his regression is “capable of showing that the non-compete agreements  
2 artificially suppressed compensation to the members of [the technical] class *generally*”) (emphasis  
3 added); Leamer Opening ¶ 2 (“I describe[] a methodology (regression analysis) for showing impact  
4 and calculating damages to the Defendants’ workforces *as a whole* . . .”) (emphasis added); *id.* ¶ 17  
5 (stating the model “estimate[s] the impact of the illegal conspiracy on the total compensation of  
6 Class members.”). Thus, Defendants’ asserted basis for exclusion—that “Dr. Leamer relies on his  
7 model to do what he has admitted it cannot do: prove injury to all class members despite admitting  
8 it cannot measure injury to individuals,” Leamer Mot. at 15—is incorrect.

9 Putting this mischaracterization aside, the Court observes that Defendants also frame their  
10 argument in a different way by claiming the regression must be excluded because “*Plaintiffs* cannot  
11 use such a model to satisfy their burden of proving classwide impact.” Leamer Mot. at 2 (emphasis  
12 added). This argument also fails because it rests on either one or both of two faulty assumptions—  
13 first, that Dr. Leamer’s regression must singlehandedly suffice to prove that each class member  
14 was impacted in order to be admissible evidence, and second, that Dr. Leamer’s regression is not  
15 relevant to the question of whether each class member was impacted. The former assumption is  
16 incorrect because, while the Court made no finding at the class certification stage that the  
17 regression itself was capable of demonstrating impact to every class member,<sup>58</sup> neither Rule 702  
18 nor *Daubert* requires that an expert’s testimony, in part or in whole, singlehandedly prove an  
19 element of the offering party’s case for it to be admissible. *Obrey v. Johnson*, 400 F.3d 691, 695  
20 (9th Cir. 2005) (noting expert evidence need not establish any element of a claim or defense to be  
21 admissible under *Daubert*); *Adams v. Ameritech Servs., Inc.*, 231 F.3d 414, 425 (7th Cir. 2000)  
22 (“[T]he question before us is not whether the reports proffered by the plaintiffs prove the entire  
23 case; it is whether they were prepared in a reliable and statistically sound way, such that they  
24 contained relevant evidence that a trier of fact would have been entitled to consider.”); *City of*  
25

26 <sup>58</sup> Such a finding was not required for Plaintiffs to attain class certification. *In re Cardizem CD*  
27 *Antitrust Litigation*, 200 F.R.D. 326, 340 (E.D. Mich. Apr. 3, 2001) (“To show impact is  
28 susceptible to class-wide proof, Plaintiffs are not required to show that the fact of injury actually  
exists for each class member.”).

1 *Tuscaloosa v. Harcros Chems., Inc.*, 158 F.3d 548, 565 (11th Cir. 1998) (expert’s study and  
2 testimony “need not prove plaintiffs’ case by themselves; they must merely constitute one piece of  
3 the puzzle that the plaintiffs endeavor to assemble before the jury.”).

4 As for the latter assumption, to the extent Defendants’ argument is that Plaintiffs should not  
5 be able to rely on Dr. Leamer’s model as evidence that each class member was injured—i.e., that  
6 Dr. Leamer’s regression is irrelevant to the issue of classwide impact—their argument fails. This  
7 Court already concluded, when ruling on Plaintiffs’ first class certification motion, that Dr.  
8 Leamer’s conduct regression was a reasonable methodology capable of showing that the anti-  
9 solicitation agreements caused “generalized harm to the class.” April Order at 38, 43. The Court  
10 reaffirmed that conclusion in its October Order. October Order at 60 (“[T]he Conduct Regression  
11 analysis is also capable of demonstrating a general classwide impact.”). The Court now concludes  
12 that even though Dr. Leamer’s model is not capable of demonstrating specific injury to each class  
13 member on its own accord, it is highly probative to that issue. *See In re TFT-LCD (Flat Panel)*  
14 *Antitrust Litig.*, M 07-1827 SI, 2012 WL 555090, at \*5 (N.D. Cal. Feb. 21, 2012) (“Even if  
15 regression models are not enough, standing alone, to establish classwide impact, they may  
16 nevertheless be relevant to the issue.”). This is because a reasonable jury could find that Dr.  
17 Leamer’s model—which this Court has held is capable of proving generalized impact to the  
18 class—in combination with the other evidence presented by Dr. Leamer and documentary evidence  
19 separate from Dr. Leamer’s analysis, strongly suggests that each class member was impacted.  
20 Notably, Dr. Leamer provides substantial evidence that economic theory, documentary evidence,  
21 and statistical analyses *separate from* his conduct regression are capable of showing that the anti-  
22 solicitation agreements suppressed the compensation of “all or virtually all” class members. *See*  
23 *supra*, Part III.A.1. The Court also held in its October Order that “Plaintiffs marshal substantial  
24 evidence, including *documentary evidence* and expert reports . . . [which] suggests that all technical  
25 employees—not just those who would have received cold calls but for the anti-solicitation  
26 agreements—may have been impacted by the agreements.” October Order at 31 (emphasis added);  
27 *id.* at 51 (“The extensive documentary evidence Plaintiffs present [] supports their theory that they  
28

1 will be able to prove the impact of the antitrust violations on a classwide basis.”); *id.* at 33  
 2 (concluding “Plaintiffs submitted thousands of pages of documents . . . which support Plaintiffs’  
 3 theories of classwide harm.”).<sup>59</sup> Because the Court finds that Dr. Leamer’s regression model will  
 4 be helpful to the jury’s assessment of classwide impact, the model is relevant and thus admissible.  
 5 *See United States v. Rahm*, 993 F.2d 1405, 1413 (9th Cir. 1993) (holding that encompassed in the  
 6 determination of whether expert testimony is relevant is whether it is helpful to the jury, which is  
 7 the “central concern” of Rule 702).<sup>60</sup> Accordingly, Defendants’ fourth *Daubert* challenge is  
 8 DENIED.

9 Ultimately, the Court concludes the jury is the proper body to decide whether or not and, if  
 10 so, to what extent, Dr. Leamer’s model should be discredited based on the various objections  
 11 Defendants have raised. *Bouman v. Block*, 940 F.2d 1211, 1225 (9th Cir. 1991) (“Whether the  
 12 statistics are undermined or rebutted in a specific case would normally be a question for the trier of  
 13 fact.”). The Ninth Circuit has held that “as a general matter, so long as the evidence is relevant and  
 14 the methods employed are sound, neither the usefulness nor the strength of statistical proof  
 15 determines admissibility under Rule 702.” *See Obrey*, 400 F.3d at 696. This Court held at the class

16 \_\_\_\_\_  
 17 <sup>59</sup> These “thousands of pages” included “documentary evidence on the importance of cold calling  
 18 as a recruitment tool and the effect of the preclusion of cold calling on the Technical Class as a  
 19 whole,” “evidence of Defendants’ rigid compensation structure and importance of internal equity,”  
 20 and “documentary evidence that Defendants viewed each other as labor competitors, which may  
 21 have resulted in individual Defendants’ wage suppression depressing other Defendants’  
 22 employees’ wages.” October Order at 33.

23 <sup>60</sup> Defendants’ citation to *In re Plastics Additives*, 2010 WL 3431837 (E.D. Pa. Aug. 31, 2010), is  
 24 unavailing. There, a district court in the Eastern District of Pennsylvania found that the plaintiffs  
 25 had not demonstrated that antitrust impact was “capable of proof by evidence common to the class”  
 26 and thus denied class certification. *Id.* at \*19. In doing so, the court held plaintiffs’ regression  
 27 model could not “serve as proof of impact common to the class” because the model said “nothing  
 28 about individual class member experience” and plaintiffs’ expert had conceded that his “industry-  
 wide regression results are *in no way* indicative of individual impact” and “*do not help* determine  
 whether each class member suffered any impact[.]” *Id.* at \*15-\*16 (emphasis added). Here, in  
 contrast, this case is not at the class certification stage, and Dr. Leamer does *not* concede that his  
 model is not at all probative to whether each class member suffered an impact. The Court also  
 notes that the *In re Plastics* court utilized a higher standard at the class certification stage than this  
 Court, which held at the class certification stage that Dr. Leamer’s model “support[ed] Plaintiffs’  
 theories of common impact of harm,” October Order at 52, 72, despite the fact that his model did  
 not purport to show individualized impact to each class member.

1 certification stage that Dr. Leamer's conduct regression was "statistically robust," supported by the  
 2 economic literature, and "capable of calculating classwide damages." October Order at 82. None of  
 3 Defendants' arguments persuades the Court to change that conclusion, and thus Defendants'  
 4 challenge to Dr. Leamer's conduct regression is denied.

5 **B. Defendants' Joint Motion for Summary Judgment Based on Defendants'**  
 6 **Motion to Exclude the Testimony of Dr. Leamer**

7 Defendants jointly move for summary judgment based on their motion to exclude Dr.  
 8 Leamer's testimony. ECF No. 556. Defendants' sole argument in support of their joint motion for  
 9 summary judgment is that "[w]ithout Dr. Leamer's expert report and testimony, Plaintiffs have no  
 10 evidence of classwide impact or damages and cannot prove the essential elements of their antitrust  
 11 claim." *Id.* at 1. Because this Court denies Defendants' motion to exclude Dr. Leamer's testimony  
 12 in full, Defendants' joint motion for summary judgment based on their motion to exclude Dr.  
 13 Leamer's testimony is also DENIED.

14 **IV. CONCLUSION**

15 For the foregoing reasons, the Court GRANTS IN PART and DENIES IN PART  
 16 Defendants' motions:

- 17 • Defendants' motion to strike Dr. Leamer's testimony is GRANTED in part as to Dr.  
 18 Leamer's new 50% statistical significance theory and DENIED in all other respects.
- 19 • Defendants' motion to exclude Dr. Leamer's testimony under *Daubert* is DENIED.
- 20 • Defendants' joint motion for summary judgment based on their motion to exclude  
 21 Dr. Leamer's testimony is DENIED.

22 **IT IS SO ORDERED.**

23 Dated: April 4, 2014

24   
 25 \_\_\_\_\_  
 26 LUCY H. KOH  
 27 United States District Judge