UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK

IN RE ELECTRONIC BOOKS ANTITRUST LITIGATION	)	No. 11-md-02293 (DLC) ECF Case Judge Denise Cote
THE STATE OF TEXAS, Plaintiffs, v. PENGUIN GROUP (USA), INC., et al., Defendants.	)	No. 12-CV-03394 (DLC)

On Behalf of Apple Inc.

Sur-Reply Declaration in Response to Reply Declaration of Roger G. Noll
and
in Support of Defendant Apple Inc.'s Memorandum of Law in Opposition to Class Plaintiffs' Motion to Exclude Expert Opinions Offered by Dr. Joseph Kalt

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January 21, 2014

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I. INTRODUCTION

A. Background and Assignment

1. My name is Joseph P. Kalt. I am the Ford Foundation Professor (Emeritus) of International Political Economy at the John F. Kennedy School of Government at Harvard University. I am also a senior economist with Compass Lexecon, an economics consulting firm. I previously filed an expert declaration on behalf of Defendant Apple Inc. ("Apple") in this matter.[1] My qualifications and terms of compensation are set forth therein.

2. On December 18, 2013, Class Plaintiffs' ("Plaintiffs") submitted a Reply Declaration by their expert, Prof. Roger G. Noll.[2] I here respond to new and unanticipated analyses and opinions introduced by this Reply Declaration. In conjunction with Prof. Noll's Reply Declaration, Plaintiffs also submitted a memorandum of law in support of a motion to exclude certain testimony of mine.[3] I also respond here to economic issues raised in that memorandum. My curriculum vita is attached hereto (see Appendix A.) Materials I have relied upon are listed in Appendix B.

B. Summary of Response to New Analyses, Evidence, Claims, and Opinions

3. Prof. Noll has now abandoned his original damages model, which was based on four-week averages of e-book prices, grouped by Prof. Noll into hundreds of "categories" defined by such characteristics as publisher, genre-like designations by Prof. Noll, and time since release. He has submitted a new, "preferred" model of e-book pricing and associated damage calculations based on what he terms "individual transactions".[4] This new model calculates new average percentage overcharges for each of the e-book categories created by Prof. Noll. Overcharge amounts change because this new model is applied to tens of millions of new data points and has over 30,000 new "title indicator variables", as well as eight new, unique e-book categories based on eight new combinations of Prof. Noll's "dummy" variables.[5] Prof. Noll's new modeling reduces his aggregate damages downward by more than $27 million. The new modeling requires new and additional analysis of model reliability and

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1 Declaration of Joseph P. Kalt, this matter, November 15, 2013, and Corrections to the Declaration of Joseph P. Kalt, this matter, December 3, 2013 (hereinafter collectively referred to as "Kalt Declaration").

2 Reply Declaration of Roger G. Noll, this matter, December 18, 2013 ("Noll Reply").

3 Memorandum of Law in Support of Class Plaintiffs' Motion to Exclude Opinions Offered By Dr. Joseph Kalt, this matter, December 18, 2013 ("Plaintiffs' Motion re: Kalt").

4 Noll Reply at 6.

5 Prof. Noll's new model is not the "same damages model" (Noll Reply at 16) as his previous one, which modeled four-week average prices and which included tens of millions fewer data points and substantially different numbers of categories.

results.[6] In addition, relying now on evidence presented in the prior proceeding, Prof. Noll asserts that the subject conduct of Defendants caused the entire distribution of all e-book prices in each of his 500+ damaged groups to increase in such a way that he can claim that his new model's group average overcharge percentages represent "common impact" and apply to each of the many thousands and even millions of individual transactions encompassed by any given group on each and every day of the two-year damage period.[7] He also revises his prior claims and now asserts that his new model demonstrates harm on all but 0.2% of e-book transactions during the damage period.[8]

4. **Assuming What Needs to Be Proved Regarding Common Impact:** I find that Prof. Noll's new calculations of both aggregate and individual consumer damages are demonstrably unreliable. They suffer from fatal flaws and errors in four key areas. The first of these entails a fundamental violation of scientific method: Prof. Noll's revised modeling *assumes* what he sets out to prove: common impact across consumers. Prof. Noll originally proposed and defended a method of converting his original model's overcharge amounts into individual consumer damages that turned out to be different from the method of damage calculation found in the workpapers to his original declaration. Without explanation, he has now endorsed and implemented his prior workpaper method for computing damages. Rather than demonstrating common impact, Prof. Noll's new modeling and associated method of damage calculation explicitly builds into their *ex ante* mathematical structure the *assumption* that each of the typically very large numbers of transactions in a given Noll grouping of e-book titles bore the same, single overcharge percentage as the group average percentage overcharge, and did so on every day of the damage period.[9] As a result, *Prof. Noll's new damages methodology is incapable of finding other than common impact.*

5. Prof. Noll makes no attempt to demonstrate that his "preferred" modeling does not build in "common impact" by mere assumption. Instead, he asserts that "two facts" now confirm common impact. First, he now avers that evidence produced during the prior proceeding shows that the aggregate distribution of e-book prices increased as a result of the shift to agency marketing of e-books. Second, he now says that because he finds that virtually all of his group average overcharges are positive, we should conclude that all of the many millions of individual transactions that comprise his

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6 Analyses in my prior declaration which are impacted by Prof. Noll's new modeling and which are not directly discussed below, but which continue to apply, are undertaken using Prof. Noll's new model and/or data and are contained in my workpapers to this sur-reply declaration.

7 Noll Reply at 39.

8 See, e.g., Noll Reply at 6.

9 Prof. Noll's e-book categories for Publisher Defendants include on average more than 294,000 and 1,050 titles during the claimed damages period. See my workpapers.

groups also experienced overcharges and, in fact, precisely the same overcharge in any given group.[10]

6. As I discuss in Section II below, each of these two assertions fail as support for Prof. Noll's claim of common impact. With respect to Prof. Noll's claim regarding the increase in the distribution of prices upon the onset of agency marketing that was proffered in the prior proceeding regarding Defendants' subject conduct, examination of that evidence finds that it shows an upward shift in the overall distribution of but a subset of the e-book titles which are encompassed by Prof. Noll's damages calculations. Moreover, the claimed increase that he examines shows only that the central tendency of prices – i.e., *average* prices – for the subset was to move upward at the onset of Defendants' subject conduct (i.e., the switch to agency marketing). I find that pre- and post-agency price distributions show large regions of overlap such that examination of them does not permit the conclusion that *all* prices rose upon the shift to agency marketing – much less that all prices moved up by the same percentage amount. In fact, the data used by Prof. Noll in his new "preferred" model show that the share of prices that stayed constant or fell upon the start of agency marketing exceeded levels even the Plaintiffs label as "massive".[11]

7. Prof. Noll's second "fact" purportedly confirming common impact is a logical *non sequitur*. As a simple matter of what constitutes an average (i.e., the central tendency of disparate values), it does not follow that if his modeling finds that group average percentage overcharges are positive for essentially all of his *groups*, we should therefore conclude that all of the many millions of *individual transactions* that make up his groups suffered an overcharge, much less that they all suffered a common, "approximately the same" group-specific overcharge.[12] In fact, examination in Section II below of the data on post-agency price changes calculated *after* accounting for all of Prof. Noll's model's non-conspiratorial explanatory factors finds no basis for such a conclusion.

8. **Failure to Isolate the Impacts of the Subject Conduct:** The "transaction level" e-book prices employed in Prof. Noll's new modeling exhibit pervasive dispersion and "churning" (with prices routinely falling for some purchasers of certain titles at the same time they are rising for purchasers of other titles). When this is the case, as the American Bar Association ("ABA") notes, "there is reason to doubt that the different customers (class members) are experiencing a common impact."[13] Prof. Noll asserts

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[10] Noll Reply at 39.

[11] Plaintiffs Motion re: Kalt at 18.

[12] Noll Reply at 10.

[13] American Bar Association, Antitrust Section, *Econometrics: Legal, Practical and Technical Issues*, (2005) ("ABA Section of Antitrust Law (2005)") at 210-211. Prof. Noll in his reply declaration (Noll Reply at 11-13) asserts that I have misrepresented the ABA on this issue in my declaration because the ABA points out that it may yet be possible to account for dispersion and churning in prices through statistical modeling or the gathering into groups subject to group-specific supply and demand forces. Yet, I quoted the ABA, noting that it points out that "*if* dispersion and churning 'are due to measurable and systematic factors that can be controlled for in a [statistical] regression, a common impact may be shown and class treatment may

his new modeling of "individual transactions" solves the problem of isolating a common fact and magnitude of antitrust injury, i.e., that he has adequately accounted for the dispersion and churning of e-book prices with the grouping and explanatory factors included in his new model so as to have separated out the effects of Defendants' subject conduct.[14]

9. Referring to his groups as "categories", he argues that the dispersion and churning of e-book prices "does not imply, and Professor Kalt does not prove, that prices for the vast majority of e-books did not increase when price collusion began and that the percentage change in prices due to collusion is not approximately the same for all e-books within a category."[15] However, beyond this assertion, Prof. Noll has revealed no effort on his part to demonstrate that the group average percentage change in prices which he asserts are due to the subject conduct are "approximately the same" for all of the titles within any of his groups.

10. I show in Section III that, even after accounting for all of Prof. Noll's explanatory factors, his new model leaves significant and unexplained dispersion and churning in e-book prices. Moreover, even after accounting for all of the proffered non-conspiratorial explanatory factors, the pre/post-agency price changes that Prof. Noll's new model calculates are most decidedly *not* "approximately the same". If we take +/- 5% as "approximately the same", 93% of the price changes that the modeling isolates as its measures of the impact of the subject conduct are *not* "approximately the same" as Prof. Noll's group average percentage overcharge. Almost half of the model's pre/post-agency price changes overstate or understate Prof. Noll's group average overcharge percentages by at least +/- 50%. Prof. Noll's model taken on its own terms raises the issue of false positives—his model finds injury, but not reliably so, for at least 25 million transactions without consideration of any countervailing benefits or other flaws. This calls into question the ability of his model to identify the facts and magnitude of damages at both the individual and aggregate level. Coupled with his new model's demonstrable inability to coherently describe the but-for world of no unlawful conduct, I find the model unreliable for the purposes Prof. Noll has offered it.

11. ***Ad Hoc*, "Just So" Reasoning and Failure to Identify the But-For World:** Proper measurement of both aggregate and individual consumer damages requires that the baseline of the but-for world, free of the effects of unlawful conduct, be coherently and without resort to *ad hoc* reasoning specified and quantified. I find that Prof. Noll's new model and associated calculation of aggregate and individual damages fail this fundamental test. I find in Section III below, and calculations presented by Prof. Noll in his Reply Declaration show, that the share of prices that stayed constant

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still be appropriate.'" (Kalt Declaration at ¶64 (emphasis in the original) citing ABA Section of Antitrust Law (2005) at 210-211.)

[14] Noll Reply at 14-15.

[15] Noll Reply at 10.

or fell upon the start of agency marketing exceeded levels the Plaintiffs label as "massive".[16]

12. Prof. Noll's new model and associated damage calculations assign overcharge percentages to each of the millions of Publisher Defendant transactions that did not change or that fell upon agency. In the case, for example, of prices that did not change at the onset of agency marketing, this compels resort to invalid *ad hoc*, or "just so", reasoning of the form: "But for the advent of agency marketing, it just so happens that precisely at the moment of the shift to agency marketing sellers operating under wholesale marketing were going to drop their prices by precisely the percentage amount of Prof. Noll's overcharge. So, when we add Prof. Noll's overcharge to the but-for prices we would have observed, we of course find that actual prices are not observed to have changed at all."

13. Nothing in Prof. Noll's new "preferred" model provides any support for such versions of the but-for world. Indeed, as I show in Section IV below, making Prof. Noll's new modeling and damage calculations economically coherent requires reliance on the foregoing forms of *ad hoc* reasoning to explain price movements or failures to move throughout the damage period, not just at the start of agency marketing. Moreover, the but-for world that is described by Prof. Noll's new model and damage calculations are sharply inconsistent with Plaintiffs' theory that in the absence of the conspiracy, an "industry standard $9.99 price point" would have prevailed.[17] That is, I find that Prof. Noll's new model does not return the world to a but-for state of $9.99 pricing as any form of "industry standard".

14. **Failure to Account for Individualized Benefits to Class Members:** Prof. Noll's new damages model and calculations take no account of the benefits that certain consumers would have realized from the depressing effect of Defendants' subject conduct on e-reader (device) prices. In particular, for any given state of any other factors affecting relevant supplies and demands, to the extent that his model finds that the subject conduct put upward pressure on *average* e-book prices, that same conduct – by making *e-reading* less attractive – would have made *e-readers* less attractive and put downward pressure on their prices. Similarly, certain class members also stood to benefit from the subject conduct as a result of the spur it gave to the availability of self-published and free e-books, as well as the opening up of e-reading experiences to Apple-loyal consumers that the onset of agency marketing and the expected entry of Apple's iBookstore engendered.

15. It is the nature of these benefits that their identification and aggregate and specific quantification across consumers inherently would require individualized inquiry into matters and data that are beyond the reach of the data and information available to us

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[16] Plaintiffs Motion re: Kalt at 18.

[17] The First Amended Consolidated Class Action Complaint, this matter, October 23, 2013 ("Amended Complaint") at ¶13.

on a common basis across consumers in this matter. In fact, inquiries into matters such as whether a particular consumer purchased particular e-readers at pertinent times, what kinds of consumers' tastes and purchases run toward self-published and/or free e-books, and the degree to which particular consumers are participants in the oft-noted phenomenon of very strong loyalty to Apple products are of the form that belie common impact and that class certification would presume to be unnecessary. I do find, however, that to the extent that the discovery information on current and former named class representatives permits inquiry, individualized damages of the magnitude put forward under Prof. Noll's new "preferred" model are canceled out for a number of such named class members.[18]

II. PROF. NOLL'S NEW "PREFERRED" MODEL DOES NOT DEMONSTRATE COMMON IMPACT

A. Prof. Noll's Average Overcharge Methodology *Assumes* Common Impact

16. Prof. Noll described his previously preferred and defended method of damage calculation as follows: "The estimated equation yields a formula for calculating the predicted price of each e-book title in each four-week period without the effect of the anticompetitive conduct. *Damages for each sale of each e-book title in each period are then the actual price minus the predicted, but-for price*."[19] This method of calculating damages introduces egregious unreliability, making what Prof. Noll's model of e-book prices did *not* explain by either normal supply and demand factors *or* the subject conduct a part of "damages" from the subject conduct.[20]

17. Notwithstanding Prof. Noll's explicit defense of the described method of damage calculation,[21] the formula actually used in Prof. Noll's original declaration's workpapers to calculate damages differed from his description of his calculation. The actual calculations were based on an *average overcharge percentage* calculated as the ratio of: (1) the model's predicted actual average of four-week prices minus the predicted but-for average of four-week prices to (2) the predicted actual average of four-week prices. The damage on any individual purchase by a consumer was then calculated by multiplying this overcharge percentage by the actual price paid.

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[18] According to Plaintiffs (Plaintiffs' Motion re: Kalt at 4), in addressing similar issues under Prof. Noll's prior measure of damages, I purportedly offer conclusions for consumers as a whole by examining, for example, information on current and former named class representatives and then "extrapolat[ing] from tiny fractions of the class" to reach class-wide conclusions. This is gross misrepresentation. I have explicitly opined (Deposition of Joseph P. Kalt, PhD., this matter, December 4, 2013 ("Kalt Deposition") at 197-98) that "I wouldn't pretend" to perform such extrapolation; instead, "[o]ne would have to do further individualized inquiry in order to get an accurate measurement" for the class as a whole.

[19] Corrected Declaration of Roger G. Noll, this matter, October 18, 2013 ("Noll Declaration") at 6 (emphasis added); see also at 24-25.

[20] Kalt Declaration at ¶¶108-109.

[21] Noll Deposition at 191 and 239.

18. Apparently abandoning his prior testimony,[22] Prof. Noll now explicitly adopts the approach actually employed in his original workpaper calculations (albeit without using four-week average prices): "The damages model does not calculate average damages for e-books within a category, but the *average percentage mark-up* for e-books in that category due to the adoption of the agency model. Damages for a particular title in one of the 500 categories [i.e., Prof. Noll's groups for Publisher Defendants' titles] are the price of the title multiplied by the damage percentage for that category."[23] This now affirmed methodology avoids his prior error of attributing damages to what the model does *not* explain, but introduces a different, arguably more egregious, methodologic flaw. Specifically, Prof. Noll's now affirmed methodology strictly assumes what he is trying to prove for purposes of class certification, i.e., that injury and overcharge are common facts across consumers.

19. Prof. Noll's new preferred model can do nothing other than find that every transaction in each and every one of the 500+ groups where his model calculates a positive *average* percentage overcharge suffered damage. This holds because his damage calculation merely multiplies the group average percentage overcharge (a number greater than zero) by the actual price of a transaction (also a number greater than zero); and, in mathematics, "a positive times a positive is a positive". In reality, however, nothing in Prof. Noll's modeling or damages calculations sheds light on whether all transactions within a Noll group were actually subject to an overcharge, much less that all such transactions were subject to the same – or even "approximately the same"[24] – overcharge as the group average percentage overcharge. Instead, the *ex ante* structure built into the new model and associated damage calculations requires, rather than demonstrates, that the group average percentage overcharge be applied as the overcharge on each individual transaction on every day of the damage period.

20. Figure 1 illustrates the way by which Prof. Noll's new modeling and damage calculations *assumes* that individual percentage overcharges equal group average percentage overcharges. The figure presents illustrative examples of four e-book titles and different patterns of but-for prices across these titles. The three panels of Figure 1 show various combinations in which some e-books suffer price elevation, while others suffer no price elevation or experience price depression, but all three yield the same group average percentage overcharge. Without providing any supportive evidence to distinguish one panel in Figure 1 from another, Prof. Noll's preferred method of damage calculation assumes the kind of perfect, non-churning mapping of but-for, conspiracy-free prices into higher conspiracy-elevated prices shown in the left-hand panel of Figure 1.

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22 See, e.g., Noll Deposition at 239-240.
23 Noll Reply at 5 (emphasis added).
24 Noll Reply at 10.

21. Prof. Noll proceeds by first estimating a group average percentage overcharge and then assigning that value to each title. The result cannot be other than "common impact". He does not first estimate individual transaction overcharges and then compute the resulting group average. The middle and right-hand panels illustrate the implication of *un*common individual overcharges (including cases of negative overcharges) that aggregate up to the same group average percentage overcharge as in the left-hand panel of the figure. There are, in fact, an infinity of alternatives of unequal overcharges that yield a given group average percentage overcharge. Prof. Noll's new modeling and associated damage calculations, however, do not consider or permit other than the kind of perfect mapping from but-for to actual prices seen in the left-hand panel of "common impact".

22. Although Prof. Noll recognizes that there is variation in both e-book prices across titles in any of his given e-book categories *and* variation in prices across time for the same e-book,[25] Prof. Noll now asserts that I did not show with respect to his original model of four-week average prices "that the percentage change in prices due to collusion is not approximately the same for all e-books within a category."[26] Prof. Noll's statement here turns scientific method on its head. The kind of rigorous analysis that would test for, rather than assume, common impact on all members of the proposed class would begin by, for example, *first* reliably measuring individual transactions' but-for prices, calculating those transactions' percentage overcharges independently, and then testing whether those percentage overcharges were common or, at least, "approximately the same". In contrast to this proper analysis, the approach taken by Prof. Noll in his new preferred model puts the proverbial cart-before-the-horse by assuming what needs to be proved, taking the group average percentage overcharges he calculates and simply assigning each transaction in a group its group's average percentage overcharge.

B. Testing the Reliability of Prof. Noll's Claim of Common Impact

23. Let us examine whether, in fact, Prof. Noll's new preferred model actually finds that the percentage overcharge is "approximately the same for all e-books within a category."[27] Figures 2A-2F test this assertion for Prof. Noll's six largest groupings of Publisher Defendants' e-books and show each group's transactions' price changes attributed by Prof. Noll's new model to the subject conduct, measured as a percent deviation from the relevant title's pre-agency modal price in the last week of wholesale marketing in Prof. Noll's data. These price changes are calculated so as to

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[25] Noll Reply at 10.
[26] Noll Reply at 10.
[27] Noll Reply at 10. Plaintiffs assert that my analyses of e-book price dispersion and churning are flawed because I purportedly "hav[e] no idea how e-book prices are set" by retailers (pre-agency) and publishers (post-agency). (Plaintiffs Motion re: Kalt at 2; see also at 9-13). This misrepresents my analyses, which assess the degree of *actual* price dispersion and churning and the ability of Prof. Noll's prior and new models to account for such dispersion and churning – regardless of what policies, guidelines, or practices sellers may have expressed at particular points in time.

put all prices on a common footing. This is done by adjusting each individual e-book's prices to reflect the effects of *all* of the normal, non-conspiratorial supply and demand factors employed in Prof. Noll's preferred model (including his "title indicator" fixed effects), as these effects are estimated by the model.

24. Specifically, prices are normalized to reflect the values of Prof. Noll's proffered normal supply and demand factors as of the first week of April 2010. Thus, differences across transactions' prices are not due to churning attributable to Prof. Noll's list of normal supply and demand factors; that churning has been removed. After this normalization, there are only two possible sources for any of the changes in e-book prices that we observe upon the shift to agency marketing: These price changes may be due to some combination of Defendants' subject conduct *and/or* non-conspiratorial factors not captured by Prof. Noll's modeling. According to Prof. Noll, the source is only Defendants' subject conduct because he has successfully isolated the effects of the conduct such that we should observe that each transaction experienced a price change "approximately the same" as its group's average percentage overcharge.

25. The blue bars in Figures 2A-2F show the distribution of pre- versus post-agency price changes that Prof. Noll's new model purports to attribute to forces other than normal supply and demand, e.g., Defendants' subject conduct. The blue bar outlined in red represents the share of group transactions that have pre/post-agency percentage price changes equal to the group average percentage overcharge. Under the claims that the effects of the subject conduct have been identified and isolated by the new preferred modeling and that these effects entail a common overcharge on each transaction equal to the transaction's group average percentage overcharge, the height of the blue bar outlined in red at the center of each figure would be expected to approach 100%, with any deviations (i.e., other blue bars) being clustered around this price change such that they are all "approximately the same".

26. Prof. Noll's claims are rejected by Figures 2A-2F when we actually analyze the variations in the price changes he attributes to Defendants' subject conduct. The height of the blue bars outlined in red at the center of each figure do not come close to approaching 100%, and the deviations from Prof. Noll's group average percentage overcharges are not clustered around his group average percentage overcharges. When we look across all of Prof. Noll's groupings of Publisher Defendants' transactions, only 7 percent of the price changes (adjusted for Prof. Noll's factors) are within +/- 5 percent of the applicable group average percentage overcharge. Almost half of the model's pre/post-agency price changes overstate or understate Prof. Noll's group average percentage overcharges by at least +/- 50 percent.[28]

27. Figure 3 applies the analysis shown in Figures 2A-2F to transactions of current and former named class representatives whose prices changed from pre- to post-agency.

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[28] See my workpapers.

If we take "approximately the same" to be within +/- 5 percent of the applicable group average percentage overcharge, then Prof. Noll would have us conclude that only 4 percent of current and former named class representatives experienced his applicable group average percentage overcharge. If "approximately the same" means within +/- 50% of applicable group average overcharges, less than half satisfy the test.

28. In the face of results such as Figures 2A-2F and 3, Prof. Noll's assertion of common impact and untested suggestion that individual transactions' pre/post-agency price changes (after accounting for all of his non-conspiratorial explanatory factors) are "approximately the same" as his group average percentage overcharge would ask us to believe that the wide spread of price changes in the figures is an illusion created by factors the new model has not been able to capture – complex and random "foam on the sea" which is created by unaccounted for factors (as reflected in the model's prediction errors and imperfect "fit") and disguises a uniformly rising tide that is raising all boats. Deviations between the model's pre/post-agency price changes (calculated *after* accounting for all of the model's non-conspiratorial explanatory factors) and group average percentage overcharges would disappear if only we could find appropriate explanatory variables. This reasoning, however, is methodologically untenable: Things we do not know about cannot be used to explain what are otherwise the failings of a theory.

29. This error of method is committed by Plaintiffs. They assert that analyses of the type shown in Figures 2A-2F and 3 do not "show that transactions were free of the effect of the conspiracy, but [are] obscure ways of observing that individual titles were not always sold at the same price. As Dr. Noll explains, this tells us nothing about the conspiracy's impact on individual transactions; it merely tells us that we are dealing with a complex market that does not lend itself to simplistic calculations like Dr. Kalt's."[29] The analyses of Figures 2A-2F and 3, in fact, account for the full complexity of Prof. Noll's modeling. Account is taken of the influence of each and every one of Prof. Noll's explanatory factors. There is nothing left to account for; all that remains is what is unknown and unexplained by Prof. Noll's new model. What is unknown, what is *unexplained* and *unaccounted for*, cannot be used to somehow explain why the price changes isolated by Prof. Noll's modeling and shown in Figures 2A-2F and 3 do not all cluster at his group average percentage overcharge, or why Prof. Noll's modeling nevertheless supports his claims of common, "approximately the same" impact. Indeed, the facts that Prof. Noll's model yields such wide ranges of pre/post-agency price changes even after accounting for all of his explanatory factors, and that these ranges even include negative price changes (implying but-for prices which are higher than what consumers actually paid) tell us

[29] Plaintiffs' Motion re: Kalt at 22, citing the Noll Reply at 17-19. In a similar vein, Prof. Noll offers a simple numerical example in his reply declaration purporting to describe how price dispersion within a group can nevertheless be consistent with individual transaction percentage overcharges equaling the group average percentage overcharge. In so doing, he has merely constructed a case that fits the left-hand panel of Figure 1. See Noll Reply at 19.

that his underlying assumption of perfect mapping from elevated actual prices to lower but-for prices (*per* the left-hand panel of Figure 1) is not supported by his own modeling.

30. The work of Nobel prize-winning economists provides tools by which to assess the reliability of using an average effect to measure the effect experienced by individual transactions that go into an average and the reliability of the kind of perfect mapping from actual to but-for prices assumed by Prof Noll.[30] To examine the reliability of the perfect mapping assumption built into Prof. Noll's new model, Figure 4 applies these tools. Because Prof. Noll's new model's but-for prices are statistical estimates, they are imprecise. Thus, his group average overcharge percentages are imprecise. The model's imprecision is reflected by its *errors* – the amounts by which its predictions fail to explain (i.e., "fit") actual values. Given Prof. Noll's new model's errors, we can apply econometric analysis to ask how often we can expect that, if we could observe them, true, precisely-measured but-for prices would be greater than the prices consumers actually paid.[31] Figure 4 reports the answers to this question.

31. The first column of results in Figure 4 shows the percent (and number) of transactions that can be expected under Prof. Noll's assumption of perfect mapping (*per* Figure 1's left-hand panel) to have but-for prices that are greater than those transactions' actual prices. As we can see, under Prof. Noll's perfect mapping assumption (i.e., his assuming common impact), only 0.2% (less than 250 thousand) of transactions have actual prices which exceed the but-for prices expected from his model and, thus, are not reported as bearing overcharges. Figure 4 then gradually relaxes Prof. Noll's assumption of what he is trying to prove. In the fifth column in Figure 4, we see the results when we take the model's errors (i.e., the unexplained portions of but-for prices) to be like those observed in transactions prior to agency marketing.[32] Under this alternative "mapping", almost 17% of e-books sold by Publisher Defendants during the claimed damages period, accounting for approximately 25 million consumer transactions, cannot reliably be said to have borne overcharges.[33] According to Plaintiffs, 15% of e-books is "massive".[34]

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[30] See, e.g., Heckman, James J., Jeffery Smith and Nancy Clements, "Making The Most Out Of Programme Evaluations and Social Experiments: Accounting For Heterogeneity in Programme Impacts," *Review of Economics Studies*, Vol. 64 at 506. James J. Heckman won the Nobel Prize in Economic Science in 2000 (http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2000/). Plaintiffs incorrectly describe these tools as "not economics but obfuscation" (Plaintiffs' Motion re: Kalt at 1).

[31] Plaintiffs apparently misunderstand or misrepresent the meaning of "econometrics", asserting that my analyses do not employ econometrics. (Plaintiffs Motion re: Kalt at 14). Econometrics is the application of statistical methods to economic matters and data, an absolutely central aspect of which is the use of analyses of regression errors to diagnose reliability.

[32] The pre- and post-April 2010 distributions of the model's unexplained portions of prices are markedly different. See my workpapers.

[33] Column 5 of Figure 4 is not the upper bound on results. By moving decisions over retail prices from the hands of individual retailers who set the prices of multiple publishers' titles to individual publishers setting the prices of only their own titles, agency marketing fundamentally changed the competitive dynamics of

32. Further assessment of the reliability of Prof. Noll's new model's ability to reliably identify and measure damages is provided by Figure 5, which shows results reported by state. Here, I compare actual transaction prices to the but-for prices predicted by the model, using each transaction's group's prediction errors to construct the predicted but-for price in accord with the mathematics of Prof. Noll's new model.[35] When the predicted but-for price exceeds what a consumer actually paid, the model is telling us there is no reliable indication of injury in any amount.[36] The first two columns of numbers in Figure 5 show Prof. Noll's reports of injury, again amounting overall to his report of no injury for only 0.2% of transactions. The last two columns of the figure show the instances of injury reported by Prof. Noll despite the absence of reliable evidence of injury. The two right-hand columns compare actual to predicted but-for prices using the new model's within-group prediction errors over the entire time period covered by the model and over the period prior to April 2010, respectively. We find no reliable demonstration of injury for approximately 11.9 to 16.5 million transactions.[37]

33. Finally, accepting Prof. Noll's model on its own terms for the sake of analysis, Figure 6 compares actual prices paid by current and former named class representatives to their transactions' but-for prices calculated according to the new model's estimated effects ("coefficients") across all of its explanatory factors. The figure reports the instances in which the prices these individuals actually paid are *less than* the new model's calculated but-for transaction prices. The available individualized discovery in this matter permits analysis of 21 of the 24 current and former named class representatives. As the figure shows, 17 of these 21 individuals paid prices on one or more transactions which were less than the new model's calculated but-for prices indicating that his new model does not reliably assess these Plaintiffs' claims.[38]

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the e-book industry. The implication of this is that the competitive dynamics following the onset of agency marketing could readily differ from Prof. Noll's unsupportable assumption of perfect mapping by more than is reflected in the last column of Figure 4 and thereby yield even greater numbers of instances of predicted but-for prices being greater than actual prices.

34 Plaintiffs' Motion re: Kalt at 18.

35 See Kalt Declaration at Appendix A.

36 Plaintiffs turn standard methodology on its head, arguing that damages must be found even if actual prices exceed model-estimated but-for prices by as little as one cent. See Plaintiffs Motion re: Kalt at 20-21. In arguing that no such test of reliability should be applied to Prof. Noll's claims of injury on individual transactions, Plaintiffs exhibit either lack of understanding of the tools of statistical analysis and criteria of reliability or misrepresentation of the methods of basic scientific analysis.

37 Indeed, for those groups in the last column of Figure 5 that did not exist prior to April 2010 according to Prof. Noll's categorizations, the model's pre-April 2010 within-group errors provide no means by which to conclude reliably that injury occurred.

38 Applying this analysis to all of the transactions results in approximately 9.9 million transactions in which individuals paid actual prices that are less than the new model's calculated but-for transaction prices, inexplicably escaping the claimed common injurious impact of Publisher Defendants' subject conduct. This does not necessarily indicate that the affected consumers benefited in these approximately 9.9 million transactions. This existence of no injury where Prof. Noll's new preferred model and Plaintiffs' theory of

34. Instances of actual prices being less than putatively free-of-conspiracy, but-for prices do not necessarily indicate negative damages, i.e., that consumers benefited on such transactions as a result of conspiracy. Instead, such instances evidence the unreliability of Prof. Noll's model and his claims of all but 0.2% of Publisher Defendants' transactions experienced common adverse impact. Nevertheless, Prof. Noll asserts that my analysis "chalks up every single price reduction as a benefit of the agency model, and counts every transaction at the same or lower price as evidence that collusion had no class-wide impact."[39] This mischaracterizes my analysis as to the relevant economic conclusion to be drawn. While Plaintiffs recognize that I found Prof. Noll's original model similarly incapable of reliably identifying the fact and magnitude of damages for individual e-book buyers, Plaintiffs reference the title of one subsection in my prior declaration and have apparently ignored my conclusion that Prof. Noll's modeling is also incapable of reliably identifying injury and damages in the *aggregate*.[40]

III. PROF. NOLL'S "EVIDENCE" DOES NOT SHOW COMMON IMPACT

A. Prof. Noll's Challenge of Isolating Effects of Defendants' Subject Conduct

35. As the ABA notes in the monograph cited above, *if* dispersion and churning "are due to measurable and systematic factors that can be controlled for in a [statistical] regression, a common impact may be shown and class treatment may still be appropriate."[41] Prof. Noll now claims to have implemented just such an analysis by grouping "purchases according to structural features of the market that may have caused differential effects on prices",[42] such that "the effect of all of the variables that were used to differentiate among e-books by factors that are likely to reflect differences in market conditions produces over 500 categories of e-books in which transactions are observed."[43] The question is not whether the Prof. Noll implements a model which groups similar e-books together, but whether he has successfully "controlled for" price dispersion and churning – i.e., variance – in implementing this modeling strategy such that we are not left with "prices for some customers are going up while the prices of other customers are not"[44] within each group.

36. While Prof. Noll criticizes my prior declaration as "creating the false impression"[45] that his model is of the type that the ABA warns against, he ignores the ABA's admonishment that, if a model attempts to solve problems of price dispersion and

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the subject conduct predict we should find common impact provides a measure of the model's unreliability. See my workpapers.

39 Noll Reply at 23.

40 Plaintiffs' Motion re: Kalt at 20.

41 ABA Section of Antitrust Law (2005) at 210-211.

42 Noll Reply at 13.

43 Noll Reply at 13 (footnote omitted).

44 ABA Section of Antitrust Law (2005) at 210.

45 Noll Reply at 14.

churning by grouping data into "subareas", "[i]t can also be relevant to consider variance around the mean price in each subarea. While the average price might be higher for a subarea, this could be due to averaging. As a result, unless there is reason to believe that *every* buyer in the group paid the average price or close to it, it would be appropriate to check for variations in prices within the subarea."[46]

37. In the context of Prof. Noll's new model, the "subareas" which the ABA describes are the categories into which Prof. Noll aggregates e-books for purposes of his new model. Prof. Noll's e-book groups are created based on unique combinations or what he terms his "hedonic" variables. These hedonic variables consist of selected characteristics that Prof. Noll's analysis purports are the only measurable (without further individualized inquiry) e-book characteristics that contribute to explaining the variation across prices, i.e., his "structural features of the market". They are: (1) the identity of the title's publisher; (2) the gross genre to which Prof. Noll assigns the title (i.e., fiction, non-fiction, advice, teen's and children's, other, and undefined); (3) whether a hardcover version of the title is available; (4) whether a paperback version of the title is available; (5) whether or not a title is a New York Times bestseller; and (6) how long the title has been released.[47] The results of Prof. Noll's efforts are 765 total categories (8 more than his prior model).[48] 524 encompass Publisher Defendants' e-books (6 more than before) and 241 encompass e-books from other publishers (2 more than before). Within the categories pertaining to Publisher Defendants, 509 contain e-books sold after the onset of agency marketing (7 more than before) and 486 prior to agency marketing (2 more than before).[49] Within those categories for e-books from other publishers, 112 contain e-books sold after the onset of agency marketing (1 more than before) and 235 contain e-books sold prior to agency marketing (2 more than before). All but eight of the Publisher Defendant groups are reported as having positive group average overcharge percentages during the period of agency marketing (i.e., damages).[50]

38. Figure 7 lists the top ten of these categories for Publisher Defendants as measured by the total number of transactions in his new model's dataset. The top category has nearly 4,000 titles encompassing over 1.4 million transactions before agency marketing and over 13,000 titles encompassing over 8.4 million transactions during agency marketing. Prof. Noll calculates an average percentage overcharge for these latter transactions in this group of 21.6% and assumes that this percentage

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[46] ABA Section of Antitrust Law (2005), fn113 on 223 (emphasis added). The ABA's warning here is omitted from Prof. Noll's quote of the passage from the ABA monograph which he represents as the "full quotation" and being "reproduced in full" (see Noll Reply at 12-13).

[47] Noll Reply at 16.

[48] See my workpapers.

[49] Because a given category in Prof. Noll's new model may not have transactions in one or the other of the time periods prior to agency marketing, or after the onset of agency marketing, these counts of categories as they pertain to Publisher Defendants and other publishers do not sum to their respective totals.

[50] Prof. Noll's new model is not the "same damages model" (Noll Reply at 16) as his previous model. See note 5 above.

overcharge applies commonly to all of these transactions regardless of retailer and regardless of when the purchase occurred in the claimed damages period.

39. To investigate whether Prof. Noll's e-book categories account for price dispersion and churning, Figure 8A uses various statistical measures to examine e-book prices within each of the ten largest categories listed in Figure 7 during agency marketing. Figure 8B then uses the same statistical measures to investigate whether Prof. Noll's e-book categories *plus* all of his model's other non-conspiratorial explanatory factors account for the observed price dispersion and churning. *Standard Deviation* is customarily used as a measure of dispersion in relation to the average, with a larger standard deviation indicating a larger spread in prices. To facilitate comparisons across categories, it is convenient to normalize this measure of dispersion by dividing the standard deviation by the average which yields the *Coefficient of Variation*.

40. Figure 8A shows that transactions in the largest category in Prof. Noll's new model have an average price of $9.09 during agency marketing and their prices are quite dispersed with a standard deviation of $8.55. Similarly, transactions in the third-largest category have an average price of $7.87 during agency marketing and their prices are spread-out with a standard deviation of $8.52, indicating a large spread in prices relative to the mean. While the third-largest category has a lower standard deviation than the top category, this does not mean it has a lower spread in prices than the top category. Here the third-largest category's coefficient of variation is 1.08 indicating greater dispersion in prices than the top category with a coefficient of variation of 0.94.

41. The dispersion in prices in each of Prof. Noll's ten largest categories is remarkable. Virtually none of the post-agency transactions in any of the ten largest categories occurred at its category's post-agency average price as evidence by the "0.0%" in the column labeled "Percentage of Transactions at Post-Agency Average Transaction Price". In fact, for eight of the ten largest categories, the share of a category's post-agency transactions that occurred within in +/- 5% of the category's post-agency average price was less than 40% of all such transactions. The share of a category's post-agency transactions that occurred within +/- 25¢ of the category's post-agency average price shows that four categories have no more than 1% of the transactions in the category being struck within +/- 25¢ of the category's average price.

42. I repeat these analyses with normalized prices for each of Prof. Noll's ten largest categories in Figure 8B. The figure shows that less than half of the post-agency transactions in 7 of the 10 largest categories had prices within +/- 5% of the category's post-agency average price. The same result holds for 9 of the 10 categories when measured within +/- 25¢ of the category's post-agency average price.

43. In fact, 132 of the 509 post-agency categories for Publisher Defendants show increased price dispersion *after* accounting for Prof. Noll's explanatory factors. Examining pre-agency transactions similarly shows increased price dispersion for 153 of the 486 pre-agency categories for Publisher Defendants.[51] Thus, Prof. Noll's variables that purport to account for "structural features of the market that may have caused differential effects on prices"[52] have, in contrast to their asserted purpose, *contributed* to observed dispersion in e-book prices. Thus, I find that Prof. Noll's new model has not been successful in reliably separating movements in prices arising from Publisher Defendants' subject conduct from legitimate movements in prices arising from changes in the marketplace.

44. Figure 9 examines the top 25 titles, by volume of units, in Figure 7's largest category and illustrates the extent of churning that remains *after* accounting for the variables that Prof. Noll's new model includes to control for "structural features of the market". This figure shows titles' daily modal prices exhibiting pervasive churning before and during agency marketing, *after* Prof. Noll controls for, as the ABA puts it, "measurable and systematic factors" that might explain non-conspiratorial movements in prices.[53]

45. Figure 10 takes every pair of titles in each of Prof. Noll's top ten categories for Publisher Defendants, determines whether there are at least 36 overlapping normalized price observations for that title-pair, and then calculates its correlation coefficient. Churning increases as the correlation between a given title-pairs' prices moves away from 1.0, i.e., the tendency for the two prices to move together diminishes. Correlations of "more than .80 are generally considered very strong and of great practical importance."[54] The figure shows that approximately 75% of title-pairs have correlation less than approximately 0.8, indicating substantial and significant churning of prices, *after accounting for Prof. Noll's proffered explanatory factors*.

46. Prof. Noll now asserts that this type of correlation analyses suffer from flaws including: (1) purportedly unexplained exclusion of title-pairs that have less than 36 coincident price observations;[55] (2) exclusion of title-pairs whose prices do not change,[56] and (3) restriction to those titles that were released in the same week.[57]

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[51] Prof. Noll's categories for e-books from publishers other than Publisher Defendants show similar increases in price dispersion after accounting for Prof. Noll's explanatory factors. See my workpapers.

[52] Noll Reply at 13.

[53] ABA Section of Antitrust Law (2005) at 210-211.

[54] Friedman, Hershey, "Scatter Plots, Correlation, and Regression", Brooklyn College, CUNY, accessed at *Learning Ace*, http://www.learningace.com/doc/1433559/6171c0810625b65779dab98b0ac9086b/correlationregressionweb, November 13, 2013, at 10.

[55] Noll Reply at 37-38.

[56] Noll Reply at 38.

[57] Noll Reply at 39.

Plaintiffs make similar assertions, stating that the exclusion of title pairs whose prices have not changed "preordains" my results.[58] These assertions are wrong.

47. First, I explained why I excluded title-pairs with less than 36 coincident price observations during my deposition, stating that titles-pairs with less than 36 coincident price observations have insufficient sample size to reliably measure their correlation.[59] Notwithstanding the inappropriateness of including title-pairs for which a correlation cannot be reliably measured, Prof. Noll's criticism has no impact on the key findings. Even if we were to adopt Prof. Noll's preferred approach of including title-pairs regardless of whether the sample size is smaller than 36, it would remain the case that more than 51.7% of the full set of title-pairs for which calculation of correlation is possible would have correlations less than approximately 0.8.[60]

48. Second, I exclude title-pairs whose prices do not change because, as Prof. Noll recognizes, it is mathematically impossible to calculate correlations in these instances.[61] "Correlation" means correlation of *movement*, not stasis. Prof. Noll is incorrect in asserting that such title-pairs are evidence of price stability and that because "so many titles were excluded on this basis means that the correlation analysis understates the extent of price stability among all e-book prices"[62] (and as Plaintiffs assert, "preordaining"[63] my results). In the absence of a price movement, we simply have no information one way or the other about price stability because titles' prices have not experienced a supply and demand change, or a sufficient supply and demand change, to have caused prices to move. Thus, because we are ultimately interested in whether there was a common upward *movement* in prices as a result of the supply and demand change represented by the shift to agency marketing, and whether such a movement can be isolated from other, normal movements in prices that we see in the data, title pairs that show no movement are appropriately excluded from my analyses.

49. Ultimately, the criticism that my correlation analyses are inappropriate because the absence of price changes makes it impossible to calculate correlations for certain numbers of title-pairs has no material weight even if taken on its own invalid terms: Even Prof. Noll finds that, when I apply the correlation analysis of churning to prices *after accounting for Prof. Noll's groupings*,[64] that only 27.23% percent of title-pairs show the noted absence of price movement. In other words, 72.77% of title-pairs are included in my analysis and approximately 84% of these showed correlations less than approximately 0.8. Even if we were to treat all of the title-pairs that lack price

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58 Plaintiffs' Motion re: Kalt at 18.
59 Kalt Deposition at 257.
60 See my workpapers.
61 Noll Reply at 38.
62 Noll Reply at 38.
63 Plaintiffs' Motion re: Kalt at 18.
64 Prof. Noll appears not to have realized this attribute of Kalt Declaration Figure 26 (See Noll Reply at 34).

movement as having perfect correlations of 1.0, it would remain the case that more than 61% of the full set of title-pairs with at least 36 overlapping price observations would have correlations less than approximately 0.8.[65] These results belie Plaintiffs' claims that I "preordained" my results because even treating all title-pairs for which calculation of correlation is impossible as having a correlation of 1.0 continues to show pervasive churning.

50. Third, Prof. Noll's criticism regarding my analyses' restriction of correlations to those titles released in the same week is at odds with his model's use of a hedonic variable to account for the length of time since a given title's release. By including such a variable, Prof. Noll's model assumes that length of time since release is a determining factor in the price of a given e-book title through the inclusion of variables that purport to measure how long the e-book has been released. The implied economics of his modeling are that, all else equal, the demand for titles can change as titles age, thereby affecting their prices. The analysis put forth in my prior declaration is similar in this regard. It correlates titles that were released in the same week to examine whether titles' prices churn despite being of the same age.[66]

51. In sum, nothing in Prof. Noll's use of e-book categories and other variables which he asserts capture non-conspiratorial "structural features of the market" supports the assertion that his new model has reliably separated movements in prices arising from Publisher Defendants' subject conduct from movements in prices arising from legitimate changes in marketplace conditions. Prof. Noll has previously opined that the R^2 measures how well a regression explains the data.[67] I have replicated Prof. Noll's new model's results and find that it has a within-R^2 of 0.05.[68] This means that Prof. Noll's *new model explains only 5% of the variation* that we observe in e-book prices over time – the dispersion and churning of prices. This extremely low value of 0.05 also indicates that Prof. Noll's new model explains e-book prices more poorly than his earlier four-week average price model, which had a low within-R^2 of 0.12.[69]

B. Prof. Noll's New Model Lacks Important Transaction-Specific Information

52. Although Prof. Noll describes his new "preferred" damages model as a "transaction-level" analysis, the new dataset to which this new model is applied does not fully

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[65] See my workpapers.

[66] Adoption of Prof. Noll's flawed approach of including title-pairs with less than 36 coincident price observations would not alter my core conclusions (see my workpapers). The appropriate analysis which excludes these title-pairs continues to be Kalt Declaration Figures 16A-16B.

[67] Noll Declaration at 24.

[68] See my workpaper. Prof. Noll does not report the appropriate within-R^2 (or any R^2 for that matter) associated with the regressions run from his new model. These values are typically reported as part of a regression's output in STATA, the statistical software Prof. Noll uses, but have been excluded from the output that Plaintiffs have provided to counsel for Apple (see the file named "damages-f coefs.txt" in Prof. Noll's workpapers).

[69] See Kalt Declaration at ¶134(b).

describe the relevant characteristics of individual transactions.[70] While the modeling does not generally employ weekly average prices (akin to Prof. Noll's prior use of four-week average prices),[71] it does aggregate prices into weekly groupings. It does so by dropping the available information on specific days of sale and, instead, simply assigning any day's transactions to the week in which the day occurred. As a result of this aggregation into weekly sets of transactions, Prof. Noll's new modeling lacks important transaction-specific information necessary for understanding and explaining e-book pricing.

53. For example, discarding the specific date on which any transaction occurs leads Prof. Noll's new model to misidentify how long the title involved in a transaction has been released, and whether a hardcover or paperback version of that title is available – characteristics of e-books that Prof. Noll asserts are important for modeling e-book prices – because his variables that identify these characteristics do not accurately match individual transactions to the points in time when these characteristics of a title change.[72]

54. This misidentification of time since release infects approximately 22.8% of Hachette's titles, 27.5% of HarperCollins titles, 21.2% of Simon & Schuster's titles, 25.0% of Macmillan's titles, and 18.8% of Penguin's titles.[73] The implication of misidentifying titles in Prof. Noll's new model is fatal because each title that has been mistakenly assigned to the wrong e-book category has an incorrectly estimated title indicator variable (see discussion below) which impacts *every* transaction associated with that title and also infects the estimation of the model's coefficients (which measure the effects of his explanatory factors). This means that Prof. Noll's analysis of over 100 million Publisher-Defendant transactions during the claimed damages period is unreliable for purposes of identifying the fact and magnitude of injury from Publisher Defendants' subject conduct.[74]

55. Additionally, Prof. Noll has aggregated large numbers of titles into groupings based upon his quite limited set of variables and presumes that once he controls for these variables, titles should share the same common movement in prices, including a common response to the shift from wholesale to agency marketing. In creating his groupings, however, Prof. Noll has excluded such factors affecting supply and

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[70] For those retailers that have provided transaction data, Prof. Noll's data takes transaction prices for each title in a given week and sums the quantities sold at those prices. In his new model, Prof. Noll replaces each observation in the original, weekly dataset, with *q* copies of the observation, where *q* is the quantity sold at a given price, retailer, and week. The dependent variable in the regression is the logarithm of the transaction price; however, weekly average prices are used for those retailers who did not provide transaction data.

[71] Prof. Noll uses weekly average prices for some retailers, such as Barnes & Noble.

[72] New York Times bestsellers are determined on a weekly basis and are published on Sundays. Because Prof. Noll's weekly aggregation defines weeks as starting on a Sunday, the issue of misidentification in Prof. Noll's new preferred model discussed here does not arise in the context of his hedonic variable that measures New York Times bestseller status.

[73] See my workpapers.

[74] See my workpapers.

demand as: the purchased title's and authors' growing or shrinking reputation; the appearance of good or bad reviews; events such as a movie release; so-called "buzz" and "word-of-mouth" effects; celebrity, expert, or other endorsements; and real-time advertising and other marketing efforts by retailers, authors, and/or publishers, etc.[75]

56. Prof. Noll now asserts that certain information missing from his modeling (e.g., factors affecting demand) is captured in his model by the use of his "title indicator" variable for each title and/or the use of his indicator variables for various New York Times bestseller status.[76] Plaintiffs also respond that Prof. Noll "utilizes an indicator variable for each title that accounts for a title's idiosyncratic characteristics"[77] and that his model "*already* incorporates a buzz variable"[78] without pointing to what that variable may be other than Prof. Noll's title indicator variable.

57. Economics refers to the title indicator variable that Prof. Noll uses in his model as a title-specific "*fixed* effect" because the effect measured by a given title's indicator variable does not change across each of the observations for that title in the data.[79] It is mathematically impossible for Prof. Noll's title indicator variable to capture the varying effects of a title's or author's growing or shrinking reputation, appearance of good or bad reviews, real-time advertising and other marketing efforts by retailers, authors, and/or publishers on the supply and demand factors surrounding the title's pricing over time. Thus, Prof. Noll's "indicator variables" possess no ability to explain or otherwise account for why and how much titles' prices change and churn over the time span of his data as a result of the changing supply and demand forces those titles experienced. As a result, they provide strictly zero assistance in explaining what *movements* in prices were the result of the noted supply and demand forces – individualized to specific titles – which he has left out of his modeling and what *movements* were the result of Publisher Defendants' subject conduct.

58. The inadequacy of Prof. Noll's assertion (and Plaintiffs' companion assertion) regarding the task being performed by his New York Times bestseller variable in his new model's groups is evidenced by Figures 11A-11B. Figure 11A shows the sales for five e-book titles, *Sarah's Key*, *Breaking Dawn*, *One for the Money*, *The Lucky One*, and *I Am Number Four* exhibiting similar sales data but with only three of the five having achieved New York Times bestseller status. A given title's popularity can and does vary over time. In each instance, the five titles' increase in sales is

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[75] Prof. Noll's own testimony demonstrates the limitations of his new model. Prof. Noll states that his modeling employs those factors employed by Amazon in determining prices in the absence of Publisher Defendants' subject conduct (Noll Declaration at fn3 on 10 and Noll Deposition at 59). However, a key feature of Amazon's pricing formula which Prof. Noll purports to model is the price the e-book is offered by Amazon's competitors (Noll Declaration at fn3 on 10). Yet no variable indicating the relevant price of a given e-book at a competitor is present in Prof. Noll's new (or any other version) model of e-book prices.

[76] Noll Reply at 14-15.

[77] Plaintiffs' Motion re: Kalt at 13 citing Noll Reply at 14-15.

[78] Plaintiffs' Motion re: Kalt at 13 (emphasis in the original).

[79] Wooldridge, Jeffrey M., *Introductory Econometrics: A Modern Approach* (Mason, OH: Thomson South-Western, 2013), ("Wooldridge 2013") at 460.

concomitant with the release of the film adaption of the title, but not with any change in their prices.[80] Yet, even though each of the five titles realized a significant increase in sales of some limited duration in parallel with the release of its film adaption, only three of the five titles' sales spikes happen to be captured by Prof. Noll's New York Times bestseller variable.

59. Figure 11B displays weekly aggregate sales data for titles with sales spikes occurring less than one year after release. The figure shows that the popularity of a recently released title can and does vary across titles and that Prof. Noll's New York Times bestseller indicator variable does not necessarily reflect the popularity of the e-book. Take, for example, *I, Alex Cross*. Its peak weekly sales exceed that of other titles designated as a New York Times bestseller. Moreover, this title does not fall into one of Prof. Noll's New York Times bestseller groupings until approximately *one year after* its peak aggregate sales. Finally, the title showing the largest peak, *Mile 81*, the e-book novella authored by the best-selling mystery writer Stephen King, was initially released only in electronic format.[81] Prof. Noll's New York Times bestseller variable, being predicated on the print version of the title, cannot possibly capture the changes underlying demand for this title by this well-known author. I again note that these changes in weekly sales are not concomitant with any changes in their prices.[82]

C. The Distribution of E-Book Prices

60. As support for his finding that injury was predominantly common to all class members, Prof. Noll now relies upon evidence from the Direct Testimony of Prof. Gilbert that he asserts "shows that the *entire* distribution of prices increased with the adoption of the collusive agency model, without even taking into account factors that changed at roughly the same time that would cause prices to fall."[83] This statement is contradicted by the very analysis that Prof. Noll references. Prof. Noll states that Prof. Gilbert's analysis shows that approximately 4.9% of e-book sales involved titles whose prices stayed the same and 12.2% involved titles whose prices fell after the implementation of agency marketing.[84] Where approximately 17% of e-book sales prices either stayed the same or fell upon adoption of agency marketing, it is simply false to assert that the "entire" distribution of e-book prices increased.

61. Figure 12 further investigates Prof. Noll's new claim that the "entire" distribution of e-book prices increased upon the onset of agency marketing. The top panel of this figure shows the distribution of titles' lowest daily modal prices in the week prior to agency marketing. The bottom panel of this figure shows the distribution of titles'

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[80] See my workpapers.
[81] http://www.stephenking.com/promo/mile_81/ ; and http://books.usatoday.com/bookbuzz/post/2011-08-25/stephen-king/416761/1.
[82] See my workpapers.
[83] Noll Reply at 39 (emphasis added).
[84] Noll Reply at 21 citing the Direct Testimony of Richard J. Gilbert, Ph.D., in *United States v. Apple*, No. 12-cv-2826 (S.D.N.Y.) ("Gilbert Direct Testimony").

highest daily modal prices in the four weeks after the onset of agency marketing. If the "entire" distribution increased, we would see a rightward shift in the distribution as we move from the top panel to the bottom panel with *each e-book* being transacted at a higher price. As shown in the figure, this is clearly not the case.

62. Figure 13 summarizes the information in Figure 12 by counting Publisher Defendants' titles and transactions whose prices rose, stayed constant, or fell and shows that the "did not rise" category continues to apply in the first four weeks of agency marketing to tens of thousands of titles and over a million class-members transactions. Figure 14 show the percentage of transactions for Publisher Defendants in the "did not rise" category as we move beyond the first four weeks. Figure 15A shows the associated cumulative volume of transactions for Publisher Defendants in the "did not rise" category as we move beyond the first four weeks, with Figures 15B through 15F showing the cumulative volume for each Defendant Publisher.

63. These data are consistent with the economics indicating that we would expect various e-books' prices to *decline* as a result of the shift to agency marketing and its putting pricing decisions in the hands of individual publishers.[85] Nevertheless, beyond an increase in the "entire" distribution of prices, Prof. Noll's new model requires that all prices in the same category increase by the same percentage as a result of the subject conduct (*per* his assumption of the perfect mapping shown in the left-hand panel of Figure 1). Prof. Noll fails to consider these economics and data which contradict his assumption of perfect mapping.[86] Thus, his damages calculations are incomplete and unreliable at both the aggregate and individual level. Individualized inquiry beyond Prof. Noll's model of *group average percent overcharges* would be required to quantify which e-book titles' prices declined as a result of the subject conduct and which consumers were thereby benefited and to what net effect by that conduct.

64. I have examined the calculations underlying Prof. Gilbert's count of titles that experience a price increase and compared them with my calculations in Figure 13. The key differences between these calculations lie in the treatment of the following issues: (1) the time periods examined and measurement of e-book prices; and (2) e-books that transacted at a price of zero.

65. First, the two time periods that Prof. Gilbert examines are not specifically tied to a Publisher Defendant's agency agreements other than one is a one-week period prior

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[85] Bulow, Jeremy, John Geanakoplos and Paul Klemperer, "Multimarket Oligopoly: Strategic Substitutes and Complements," *Journal of Political Economy* (1985), Vol. 93 (3) ("Bulow, *et al.*") at 501.

[86] Prof. Noll asserts my analyses of Publisher Defendants' e-book prices are not complete because my analyses, unlike Prof. Gilbert's, do not compare the price movements of Publisher Defendants' e-books to the price movements of non-conspiratorial publishers such as Random House (Noll Reply at 22-23). This is incorrect. Both in my prior declaration and here, I have reported analyses that have, as appropriate, taken full account of Prof. Noll's explanatory factors. In both his prior modeling and his new approach, these factors have explicitly included the pricing conduct of non-Defendant publishers (such as Random House) as control variables.

to agency marketing and the other is a one-week period is after the onset of agency marketing. Furthermore, he measures prices by calculating a title's weighted *average* price.[87] I use a title's lowest daily modal price in the week prior to agency marketing and the title's highest daily modal price post-agency in the four weeks following onset of agency marketing.

66. Second, regarding treatment of e-books that transacted at a price of zero, Prof. Gilbert excludes these transactions from his analyses.[88] I appropriately include e-books transactions that occurred at a price of zero in my analyses because the data show that certain e-books with prices of zero prior to agency marketing could and did experience increases in prices after the onset of agency. Nevertheless, Figure 16 reports the effect of removing these e-books from my analysis in Figure 13 and shows results in line with Prof. Gilbert's.

67. Prof. Noll and Plaintiffs assert that my analyses are flawed because I do not properly mark the start of the agency period properly.[89] Referencing Prof. Noll, Plaintiffs further assert that by "mislabeling" post-agency prices as pre-agency prices, I have "egregiously" overestimated the number of transactions that occurred at or below their pre-agency price levels.[90] These characterizations reveal a stark misunderstanding of the economics of price competition between sellers of the same title.[91] The dates I use as the beginning of agency marketing are grounded in basic economics, which teaches that if a single retailer continues to have pricing authority over a Publisher Defendant's titles (because, for example, that retailer continues to operate on the wholesale model), then that retailer's pricing decisions would discipline the pricing of that publisher's titles in the marketplace. These economics are also reflected in the MFN provisions in Apple's agency agreements with retailers. Accordingly, I use the date on which the *last* retailer that operated under the wholesale model with a given Publisher Defendant effectively adopted agency marketing with that publisher as the date for which that publisher's titles' prices reflect agency marketing.[92]

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[87] Although Prof. Noll references the Gilbert Direct Testimony, the referenced analyses by Prof. Gilbert are fully explained in the Expert Report of Richard J. Gilbert, February 8, 2013 ("Gilbert Report"). There, Prof. Gilbert explains that he uses the weighted average price for each title in a given week (Gilbert Report at fn146) and describes the pre-agency and post-agency weeks he examines (Gilbert Report at fn141).

[88] Prof. Gilbert excludes e-book transactions at a price of zero from his calculation of each title's weighted average price (Gilbert Report at fn146). Moreover, Figure 5 to the Gilbert Report shows close to no transactions for e-books priced from $0.00 to $1.00.

[89] See, e.g., Noll Reply at 3, 9-10, and 29 and Plaintiffs' Motion re: Kalt at 4-8.

[90] Plaintiffs' Motion re: Kalt at 4-8.

[91] See, e.g., Pindyck, Robert and Daniel Rubinfeld, *Microeconomics*, 7th Edition, 2009 at 456-458.

[92] Plaintiffs assert that Amazon "placed limited downward pressure on its agency competitors" and as support for this assertion reference the analysis of Prof. Ashenfelter which observed that 95% of Penguin e-books that Amazon carried under wholesale marketing were available at higher prices at the iBookstore and Barnes & Noble's e-bookstore (Plaintiffs' Motion re: Kalt at 6). Evidence that titles were available through retailers operating under agency marketing at higher prices than retailers operating under wholesale marketing does not provide dispositive information regarding the magnitude of the competitive pressure that

68. Prof. Noll points to evidence in the record indicating that Simon & Schuster withheld its titles from Sony as of April 1, 2010. As a result, the date on which Simon & Schuster's last retailer that was operating on the wholesale model adopted agency is April 3, 2010.[93] Similarly, Prof. Noll points to evidence in the record indicating that Penguin withheld from Amazon titles that were released from April 1, 2010 through May 27, 2010 from Amazon.[94] As a result, the date on which Penguin's last retailer that was selling these newly released titles and was operating on the wholesale model adopted agency marketing is April 1, 2010; for all of Penguin's other titles the date on which its last retailer that was operating on the wholesale model adopted agency marketing remains May 28, 2010.[95] Figure 13 reflects these dates.[96]

69. I note that Prof. Noll calculates the number of Penguin titles for which prices rose, stayed the same, or fell under an incorrect set of dates marking the onset of agency marketing.[97] Specifically, Prof. Noll asserts that 1.8 million Penguin titles were sold below their pre-agency price, rather than the 17.4 million Penguin transactions struck *at or below* their pre-agency price noted in my prior testimony. Prof. Noll's calculations are flawed. They treat *all* Penguin e-books as having been withheld from Amazon from April 1, 2010 through May 27, 2010, instead of only the universe of titles he asserts were withheld, i.e., Penguin e-books released during the aforementioned period. Consequently, Prof. Noll incorrectly treats all pre-agency as prior to April 1, 2010 for all Penguin titles. This error then obscures the fact that over this time period, Amazon sold nearly [redacted] Penguin titles, amounting to nearly [redacted] and representing approximately [redacted] of the sales of Penguin titles. To illustrate the implications of Prof. Noll's error, Figure 17 shows that correcting this single error in Prof. Noll's calculations yields results similar to those in Figure 13. Moreover, as shown by Figure 15E, correcting for all of Prof. Noll's (and Plaintiffs')

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the retailer operating under wholesale marketing places on its rivals operating under agency marketing. To draw such a conclusion, we would need to observe the prices offered under agency marketing in the absence of any retailer operating under wholesale marketing offering the same title.

93 Noll Reply at 30 citing SEL-R-00014849 and SEL-R-00049758.

94 Noll Reply at 30 citing APLEBOOK00436944.

95 Plaintiffs similarly assert that Simon & Schuster "made no sales at Sony between April 3 and April 18" of 2010 and that "Penguin refused to sell new release e-books through Amazon between April 3, 2010 and May 28, 2010" (Plaintiffs' Motion re: Kalt at 5, footnotes omitted). The transaction data do not comport with these assertions by Plaintiffs. Of the approximately [redacted] Penguin titles released during this time period, approximately [redacted] titles were transacted at Amazon. See my workpapers.

96 The date the last retailer operating under wholesale marketing adopted agency marketing is April 1, 2010 for Hachette, April 1, 2010 for Macmillan, and April 3, 2010 for HarperCollins. Prof. Noll asserts that I need to change applicable agency dates for Hachette, HarperCollins, and Macmillan to March 31, 2010 because "some e-retailers were in the process of transitioning to agency prices before April 3, 2010" (Noll Reply at 30-31). The "actions of some retailers" are irrelevant for the purposes of my analyses because other retailers continued to sell e-books from Hachette, HarperCollins, and Macmillan under wholesale marketing until the dates indicated above.

97 Noll Reply at 32-33. Plaintiffs apparently rely on these calculations by Prof. Noll in asserting that "[w]hen corrected, Dr. Kalt's estimates fall from approximately 25 million to approximately 7.8 million" (Plaintiffs' Motion re: Kalt at 7). As I explain below, proper calculation shows the number of Publisher Defendants' transaction whose prices did not rise to be approximately 23.5 million.

flaws shows that approximately 17.3 million Penguin transactions were priced at or below their pre-agency prices; the total across all Publisher Defendants is approximately 23.5 million transaction (see Figure 15A).

70. Prof. Noll asserts that I err by finding "pre-agency transactions for 2,902 titles that were sold at the iBookstore on the first two days of April 2010" when the iBookstore was not operating.[98] This is impossible because the data being used contain no transactions on the iBookstore before April 3, 2010. From the workpapers to Prof. Noll's Reply Declaration, it appears his count of "2,902 titles that were sold at the iBookstore" comes from a calculation performed for some other purpose and refers to Penguin titles sold through the iBookstore during both the week prior to May 28, 2010 and the four weeks following.[99]

71. Finally, Prof. Noll speculates that my analyses of which prices rose or not upon the onset of agency marketing are flawed because "the release of a paperback edition normally leads to a reduction in the e-book price"[100] such that the "fell or did not rise" category may simply reflect the introduction of a paperback edition. When I investigate this new assertion by excluding e-books that experience an introduction of a paperback edition from Figure 13, I continue to find that the "fell or did not rise" category applies in the first four weeks of agency marketing to over 60% of transactions, amounting to over a 1.5 million transactions.[101]

D. Modal Measures of E-Book Prices

72. Prof. Noll and Plaintiffs assert that my analyses of dispersion and churning of e-book prices are flawed because I use daily modal prices.[102] Specifically, Prof. Noll states that my use of a distribution's mode does not represent the central value of that distribution, which he asserts generates a more reliable "calculation of total damages."[103] Plaintiffs assert that "the mode (as opposed to the mean or median), is 'almost never' used in statistical analysis because it 'is a poor indicator of price trends' and less reliable than standard measures of common price tendencies."[104]

73. If we are interested in the common experience of class members, it is appropriate to examine a title's modal price because it is the price that the proposed class members *most frequently paid*, and is, thereby, a better representation of the distribution of prices actually paid by proposed class members. In fact, the textbook that Prof. Noll cites as the basis for his criticism regarding my use of modal prices recognizes that the mode is better than the median and mean for the purposes here: "Since the mode

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[98] Noll Reply at 31.
[99] Noll Reply workpaper file "Figure_17_apple_titles.sas".
[100] Noll Reply at 39.
[101] See my workpapers.
[102] Noll Reply at 24-28; Plaintiffs' Motion re: Kalt at 16-18.
[103] Noll Reply at 16.
[104] Plaintiffs' Motion re: Kalt at 16 citing Noll Reply at 28.

is, by definition, the most typical value, it is often considered the *most descriptive* of the representative values discussed so far. However, its importance diminishes as the number of observations becomes limited."[105] (We certainly do not have "limited" numbers of observations in the case at hand.)

74. While Plaintiffs' noted assertion of an "industry standard" pre-agency price of $9.99 invokes the concept of modal price to the extent "industry standard" is intended to convey the price at which most transactions occurred, Plaintiffs now assert that my use of daily modal prices "virtually guarantees that outliers will skew"[106] my results. This is a logical impossibility because the daily modal price does not change if there are other transactions that occur at outlying prices because the daily modal price is by definition the price that the proposed class members *most frequently paid* on a given day which is invariant to other transactions at outlying prices. In fact, it is the mean price (i.e., average price) repeatedly used by Prof. Noll that is most easily "skewed" by outliers. The statistics textbook which Prof. Noll cites explains exactly this problem with the mean: "The one major disadvantage of the arithmetic mean is that it is *unduly affected by extreme values* and may therefore be far from representative of the sample."[107]

75. Instead of presenting analysis of the representativeness of the mode and mean as it pertains to the available transaction data, Prof. Noll discusses irrelevant examples of hypothetical transaction prices and does not empirically investigate the matter further.[108] While Prof. Noll discusses one example of a "coding error" in which Amazon treated two separate titles as the same title,[109] he does not present any evidence that had Amazon properly treated these two titles separately in its data that the daily modal price for each of the two titles would be flawed. I note that Prof. Noll has neglected to fix this same issue in his analyses. Instead, he now asserts that Amazon's miscoding calls into question the quality of the data from Amazon and is justification for employing an inappropriate quantitative tool – averaging – to the questions of the prices most commonly paid by class members and the assessing of the fact or magnitude, if any, of common impact across class members.

76. The data here show that *over 99%* of transactions for Publisher Defendants' e-books occurred at titles' daily modal prices. For comparison, the data show that only approximately 90% of transactions for Publisher Defendants' e-books occurred at

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[105] Bernard Ostle, *Statistics in Research*, 2nd ed., Iowa State University Press, 1963 ("Ostle 1963") at 60 (emphasis added). The other "representative values" to which the quote refers include the average, i.e., mean (Ostle 1963 at 53), and the median (Ostle 1963 at 56).

[106] Plaintiffs' Motion re: Kalt at 17.

[107] Ostle 1963 at 53 (emphasis added). I note that by "arithmetic mean," the Ostle textbook includes reference to the formula for calculating a weighted average (Ostle 1963 at 53, the paragraph immediately following the quoted sentence).

[108] Noll Reply at 25-26.

[109] Noll Reply at 27-28. I have remedied Amazon's coding error with respect to my analyses. This does not alter my core conclusions or the limitations of Prof. Noll's analysis. See my workpapers.

titles' daily average prices.[110] Thus, titles' daily average prices are *less representative* than their daily modal prices of the prices that the overwhelming number of proposed class members actually paid.[111]

IV. PROF. NOLL'S NEW MODEL DOES NOT COHERENTLY DESCRIBE THE BUT-FOR WORLD

A. *Ad Hoc* Assertions under Prof. Noll's New "Preferred" Model

77. Proper measurement of both aggregate and individual consumer damages requires that the baseline of the but-for world, free of the effects of unlawful conduct, be coherently – i.e., without resort to *ad hoc* reasoning – specified and quantified. According to Prof. Noll's now-endorsed methodology: "Damages for a particular title in one of the 500 categories are the price of the title multiplied by the damage percentage for that category."[112] Thus, Prof. Noll's but-for price of every transaction in the damages period is thus calculated as the actual price paid by a consumer in any given e-book purchase transaction, reduced by the average percentage overcharge for the group in which the particular transaction is put by Prof. Noll.

78. In this manner *and* because the mathematics of his methodology strictly assumes that no information is needed to explain how the advent of agency affected *individual* e-book prices (if at all),[113] Prof. Noll's new model and associated damage calculations apply the same group average overcharge percentage to every transaction within a given group from the very first day of agency marketing through to the end of the damages period. This holds independent of whether a particular title's price actually rose, fell, or stayed the same at the onset of agency marketing. Because he claims to have detected and measured damages from the very beginning of and throughout agency marketing, Prof. Noll's approach entails the implicit claim that his new model precisely predicts *when* – and *how much* – prices would have been changed by sellers in the but-for world. This claim is implied by his modeling *despite the model's eschewing of any need for pertinent information on changes in individual titles' prices.*

79. The result is that Prof. Noll's new model and its new group average overcharge percentages are riddled with methodologically invalid *ad hoc*, "just so" reasoning

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110 See my workpapers.

111 Plaintiffs egregiously misrepresent my use of daily modal prices. Plaintiffs assert that I repeatedly mischaracterize "modal prices on a single day as 'weekly modal prices' or even monthly modal prices" (Plaintiffs' Motion re: Kalt at 18). In the passage they reference from my deposition, I clearly explain that I use the "daily modal price" for the referenced analysis (see Kalt Deposition at 281).

112 Noll Reply at 5.

113 Notwithstanding suggestions to the contrary (e.g., Noll Reply at 4-5 and 14-15), Prof. Noll's "title indicator" (fixed effect) variables capture only *fixed* aspects of individual titles. They do not capture or explain *changes* in prices or other aspects of individual titles (such as may have occurred at the onset or during agency marketing).

which requires that it just so happens that retailers operating under wholesale marketing in the but-for world would have: (1) changed their prices on precisely the titles in any Noll group, (2) at precisely the moment that Prof. Noll's new model asserts overcharges began and at every other moment when we observe price changes during the damages period, and (3) by the same reverse percentage amount as the group average percentage overcharge calculated by the model. In the case, for example, of the hundreds of thousands, even millions, of transactions for which title prices did not change upon the advent of agency marketing,[114] this leads Prof. Noll to assert *without evidence on those titles' prices* that "these prices would have fallen even more in the absence of collusion."[115]

80. Epistemologically, this is merely a reassertion of the "just so" reasoning embedded in his framework. That is, Prof. Noll is, in effect, saying that his damage calculation will proceed in the case of those prices which actually did go down upon the onset of agency marketing as if we would have observed prices declining "even more" and by the same reverse percentage as his overall damage period, group average percentage overcharge. This "just so" reasoning is *ad hoc*, unsupported by evidence *because* his new model and damage calculations do not even attempt to explain when and by how much individual title's prices within a Noll group change. The new model and calculations impose, through its very structure and as an untested *ex ante* requirement, the group average percentage overcharge on every transaction on every day of the damages period. As a result, the model and calculations cannot properly be claimed to have coherently captured the but-for world.

81. In fact, in light of Plaintiffs' claims (noted above) that in the absence of the conspiracy, an "industry standard $9.99 price point"[116] would have prevailed, we can ask whether the but-for prices that Prof. Noll's methodology creates by subtracting his calculated overcharges from actual prices returns those actual prices during the damages period to that but-for "price point". It does not come close to doing so. This is seen in Figure 18, which compares the share of transactions that Publisher Defendants were striking at $9.99 prior to agency marketing to the share of prices struck at $9.99 during the damages period. The top panels considers those transactions struck at $9.99 rounded to the penny; the middle panel considers those transactions struck within 25 cents of $9.99; and the bottom panel considers those transactions struck within 50 cents of $9.99. Prof. Noll's model clearly does not return but-for pricing to a "standard $9.99 price point".

B. Reliance on "Just So" Reasoning in Prof. Noll's New Model

82. The need to rely on *ad hoc*, "just so" stories that are created by Prof. Noll's damages methodology can be readily illustrated with the aid of Figures 19-22.[117] In these

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[114] See discussion below.
[115] Noll Reply at 17.
[116] Amended Complaint at ¶13; see also Noll Declaration at 10.
[117] Additional illustrations are contained in my workpapers.

figures, I examine the same titles as in my prior declaration, but now applying Prof. Noll's new "preferred" modeling and associated damages calculations to compare the selected titles' actual prices to the but-for prices that Prof. Noll's methodology creates by subtracting his calculated overcharges from actual prices.

83. Figure 19, for example, compares prices actually paid by consumers (green "x") in the post-agency period to Prof. Noll's but-for price (pink "o") for the HarperCollins title *Guardian of the Horizon* sold through Amazon. In Figure 19, actual prices remain constant upon the onset of agency marketing. Thus, for Prof. Noll's new but-for prices to be a coherent description of the but-for world, it must be the case that, but for the advent of agency marketing, it just so happens that precisely at the moment of the shift to agency marketing normal, non-conspiratorial market forces were going to lead Amazon, operating under wholesale marketing, to drop the price of the title by precisely the same reverse amount as Prof. Noll's overcharge.

84. The model has no means other than the imposed assumption that Prof. Noll is trying to prove for accepting this claim over the hypothesis that the advent of agency marketing had no effect on the price of *Guardian of the Horizon* and the consumers who bought it. Indeed, with Prof. Noll's groupings presented as designed to capture normal supply and demand forces common to the titles in a given group,[118] the model has no means of explaining why all of the thousands of titles and over a million transactions in the same Noll group as *Guardian of the Horizon* were not about to have their prices reduced by the percentage of Prof. Noll's group average overcharge such that all of the actually observed prices in the group stayed constant precisely upon the onset of agency. In fact, in *Guardian of the Horizon's* group, post-agency prices were not all constant; they were dispersed and churning.[119]

85. Similar types of "just so" stories must be invoked to interpret Figures 20-22. Figure 20 shows the case of a decline in actual post-agency prices – i.e., where actual price declines, and Prof. Noll's *assumption* that all individual overcharge percentages in a group equal the group average overcharge percentage compels him to assert, *without analysis of any individual titles or transactions,* that but-for the onset of Publisher Defendants' subject conduct, the price "would have fallen even more" beginning from the first moment of agency marketing onward.[120] Figure 21 shows the case of actual prices increasing upon agency marketing, but by more than the increase in Prof. Noll's new but-for prices. Figure 22 shows the case of actual prices rising upon the shift to agency marketing, right at the moment that Prof. Noll's new but-for prices say that sellers operating under wholesale marketing were going to reduce prices. Not only do these cases require "just so" reasoning to be understood, in each case in Figures 20-22, the accompanying "just so" stories that apply are not common

[118] Noll Reply at 14.
[119] During the period depicted in the figure, title carries the following Noll's characteristics HarperCollins, fiction, not available in hardcover, available in paperback, and released for less than 1 year.
[120] Noll Reply at 17.

across the indicated titles' respective groups. Instead, each group is characterized by price dispersion and churning that require a multiplicity of "just so" stories.[121]

86. The invocation of "just so" stories plagues Prof. Noll's model not only at the moment of the onset of agency marketing, but throughout the damage period as well. This is illustrated in Figure 23 which shows the nature of the stories. In the figure, we see the actual daily modal price before and after the advent of agency marketing (the blue line), but-for daily modal price (the red line), and number of units transacted for HarperCollins' *A View to a Kiss*. This title's sales spiked in in the summer of 2011, concomitant with a drop in the title's actual price (under agency marketing) from approximately $6.99 to $0.99. This price change occurred in a period of time in which Amazon was working in collaboration with major publishers, including HarperCollins, to run promotional programs under which significant reductions in prices were implemented for certain e-books.[122] In fact, approximately [redacted] of the transactions for *A View to a Kiss* occur in this window of time. This is an *ad hoc*, "just so" story. Prof. Noll's new modeling is not coherently capturing pricing in the but-for world. As such, it is not capable of reliably estimating either aggregate or individual consumer damages.

V. UNCOMMON IMPACT: INDIVIDUALIZED INQUIRIES FIND OFFSETTING BENEFITS

87. After originally providing no analysis of straightforward economics indicating that we would expect certain consumers to have benefited from the Defendants' subject conduct, Prof. Noll now addresses certain aspects of these economics in his reply declaration. He specifically focuses on the implications of Defendants' subject conduct for the price of e-readers. He opines that to the extent that Defendants' subject conduct caused average e-book prices to be higher than they otherwise would have been (as he claims), there is no basis for concluding that the same causal forces of Defendants' conduct would have reduced e-reader prices for consumers.[123] Prof. Noll's economic reasoning in this regard is incorrect.

88. Basic economics tell us that to the extent that his model finds that the subject conduct put upward pressure on *average* e-book prices, then that same conduct, by making *e-reading* less attractive, would have made *e-readers* less attractive and put downward pressure on their prices for any given state of other factors affecting relevant supplies and demands. Employing the same principles, for any given state of other supply

[121] During the period depicted in Figures 20-22, Prof. Noll's e-book characteristics are: for Figure 20, HarperCollins, fiction, not available in hardcover, available in paperback, and released for less than 1 year; Figure 21, Penguin, undefined, available in hardcover, available in paperback, and released for more than 1 year; Figure 22, Simon & Schuster, nonfiction, available in hardcover, available in paperback, and released more than 1 year.

[122] See, for example, http://paidcontent.org/2011/07/20/419-amazons-big-deals-puts-900-kindle-books-on-sale-including-big-6-titles/.

[123] Noll Reply at 60-63.

and demand forces, an increase in supply of e-readers (as occurred in the but-for world as a result of Apple's introduction of the iPad) would put downward pressure on e-reader prices. This would make e-reading more attractive and increase the demand – and the but-for prices – of e-books. Prof. Noll accounts for neither of these effects, mislabeling them as "mutually inconsistent".[124] In reality, within the context of Plaintiffs' claims of elevated average e-book prices, two mutually consistent forces place upward pressure on average e-book prices: (1) the subject conduct; and (2) the increased competition in e-reading devices upon the introduction of the iPad (which would have occurred in the absence of the subject conduct).

89. This mutual consistency is fatal to Prof. Noll's analysis because he has not separated the increase in e-book prices attributable to increased competition between e-readers in the but-for world from the alleged increase in e-book prices attributable to the conspiracy. Moreover, to the extent that the subject conduct conspiratorially elevated average e-book prices relative to what they would have been given the non-conspiratorial introduction of the iPad *and* given the states of any other supply and demand factors would have made e-reading more expensive. This would necessarily have reduced consumers' demand for – and, *per force*, the prices of – e-readers *relative to what those e-reader prices would otherwise be in the absence of the subject conduct and given the introduction of the iPad*. This holds for any given state of any other factors affecting supply and demand. Prof. Noll ignores these economics. This flaw means that Prof. Noll's methodology cannot reliably measure impact and damages in the aggregate or for the individual consumer.

90. In now addressing the impact of Defendants' subject conduct on e-reader prices and employing Mr. Orszag's approach for the sake of argument, Prof. Noll asserts that Mr. Orszag should calculate a per unit e-reader price reduction of [redacted] rather than Mr. Orszag's original figure of [redacted][125] It is the nature of these benefits that their identification and aggregate and specific quantification across consumers inherently require individualized inquiry into matters and data that are beyond the reach of the data and information available to us on a common basis in this matter. This includes inquiries into matters such as whether a particular consumer purchased particular e-readers and which, if any accessories at pertinent times. Given the individualized inquiry permitted on 19 of the 24 former and current class members, Figure 24 accepts for the sake of argument the assumed common fact of elevated e-book prices and the figure of [redacted] for the conduct-induced fall in the price of Amazon's Kindles.

91. As shown in Figure 24, at a conduct-induced reduction in Kindle prices of [redacted] per unit and Prof. Noll's new model's overcharge percentages on the titles purchased by current and former named class representatives, 5 of the 19 these individuals realized reductions in their costs of e-reading as a result of the subject conduct. Taking the Kindle price reduction to be [redacted] three of these 19 individuals realized reductions in

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[124] Noll Reply at 7-8.
[125] Noll Reply at 71-72.

their costs of e-reading. If we take the facts of these named and former class representatives as standing for the class as a whole, these results contradict Prof. Noll's claims of a common fact of injury. Actual quantification across all proposed class members would require further individualized inquiry of the type that class certification would presume unnecessary.

92. In fact, the need for such inherently individualized inquiry applies to each of the other benefits resulting from Defendants' subject conduct. Prof. Noll's new model cannot account for such benefits as it precludes such necessary consumer- and transaction-specific information that class certification would presumed to be unnecessary. For example, Prof. Noll implies, absent any of the requisite individualized inquiry into the preferences and oft-noted phenomenon of Apple consumers' strong loyalty to Apple products, that we are to include as a common fact that the consumers of the iBookstore would have turned to other e-book retailers in the but-for world of no iBookstore.[126]

93. In the case of the impetus for self-publishing created by Apple's expected entry and adoption of its own e-bookstore, Prof. Noll asserts that "[t]he facts show that the iBookstore is not remotely close to a leader in e-book sales or in the promotion of self-publishing".[127] This, however, irrelevantly diverts proper analysis, which finds that Amazon altered its policies regarding royalties it would pay to authors publishing through Amazon's self-publish platform with knowledge in hand of Apple's imminent expected entry into the e-book marketplace.[128] Moreover, the economics of that entry, under terms more favorable than Amazon's then prevailing terms for self-publishers are clear: An increase in the royalty rate for self-publishing (as under Apple's approach) increases the effective compensation an author receives for each unit sold of his or her titles and this encourages authors to bring forth additional titles into the marketplace.

94. Thus, absent the subject conduct, royalty rates offered to self-publishing authors would not have increased to the same extent that they did at the more established retailers, such as Amazon, and, as a result, there would be fewer self-published e-books available for consumers to purchase. Quantification of the amount of this effect across all consumers would require the kind of individualized inquiry into the incentives and conduct of both self-publishing authors and the consumers who are attracted (or not) to self-published books. Speculation or extrapolation as to the number of class members for whom resulting benefits of expanded self-publishing

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[126] Noll Reply at 56.
[127] Noll Reply at 7.
[128] Kalt Declaration at ¶36 and fn113 at ¶97. See also AMZN-MDL-0075013, AMZN-MDL-0143110, AMZN-MDL-0076414, AMZN-MDL-0044064, AMZN-MDL-0076568, AMZN-MDL-0076590, AMZN-MDL-0154056, AMZN-MDL-0154050-051, AMZN-MDL-0077424, and AMZN-MDL-0153987.

would be improper without further individualized inquiry of the type presumed unnecessary by class certification.[129]

I declare under penalty of perjury, under the laws of the United States, that the foregoing is true and correct to the best of my knowledge and belief.

Joseph P. Kalt

[129] See note 18 above.

APPENDIX A

CURRICULUM VITA

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PROFESSIONAL POSITIONS

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Areas of specialization include Industrial Organization, Economics of Antitrust and Regulation, Natural Resource Economics, Public Choice and Political Economy, Economic Development, Microeconomic Theory.

Co-Director, The Harvard Project on American Indian Economic Development, 1987-present

Faculty Chair, Harvard University Native American Program, 2000-2006

Chair, Economics and Quantitative Methods Cluster, 1995-2000

Professor of Political Economy, 1986-1992

Faculty Chair and Academic Dean for Research, 1992-1994

Chairman, Environment and Natural Resources Program, Center for Science and International Affairs, 1990-1994

Chairman of Degree Programs, 1990-1992

Chairman of Ph.D. Programs, 1989-1990

Assistant Director for Natural Resources, Energy and Environmental Policy Center, 1985-1990

Co-Director, Harvard Study on the Future of Natural Gas Policy (with Frank C. Schuller), Energy and Environmental Policy Center, 1984-1986

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Visiting Professor, Eller College of Management, 2005-2010

Faculty Chair for Nation Building Programs, Native Nations Institute for Leadership, Management, and Policy, Udall Center for Studies in Public Policy, 2005-present
Visiting Professor, *American Indian Studies Department*, 2005-2006; *Faculty Affiliate*, 2013-present

COMPASS LEXECON
Senior Economist, 2003-present (and since 1983 with predecessor enterprises)

PRESIDENT'S COUNCIL OF ECONOMIC ADVISERS, WASHINGTON DC
Junior Staff Economist, 1974-1975

EDUCATION

University of California, Los Angeles, Ph.D. in Economics, 1980; M.A. in Economics, 1977
Doctoral Dissertation: *Federal Control of Petroleum Prices: A Case Study of the Theory of Regulation*

Stanford University, Stanford, CA, B.A. in Economics (Honors), 1973

PUBLICATIONS AND RESEARCH: BOOKS AND MONOGRAPHS

Constitutional Design (with Jessie M. Mosqueda and C. Falan Yinug), The Native Nations Institute for Leadership, Management and Policy, *Guides for Indigenous Governance*, March 2013.

The State of the Native Nations: Conditions under U.S. Policies of Self-Determination (a principal author, with The Harvard Project on American Indian Economic Development), Oxford University Press, 2008.

American Indians on Reservations: A Databook of Socioeconomic Change Between the 1990 and 2000 Censuses (with Jonathan B. Taylor), The Harvard Project on American Indian Economic Development, January 2005.

Annotated Bibliography: The Social and Economic Impacts of Indian and Other Gaming (with Leigh Gardner and Katherine A. Spilde), The Harvard Project on American Indian Economic Development, January 2005.

The Context and Meaning of Family Strengthening in Indian America: A Report to the Annie E. Casey Foundation by The Harvard Project on American Indian Economic Development (with Amy Besaw, Andrew Lee, Jasmin Sethi, Julie Boatright Wilson, Marie Zemler), The Annie E. Casey Foundation, Baltimore, Maryland, August 2004.

New Horizons in Natural Gas Deregulation, ed. (with Jerry Ellig) and co-author of two chapters, Greenwood Press, 1995.

What Can Tribes Do? Strategies and Institutions in American Indian Economic Development, ed. (with Stephen Cornell), University of California, 1992.

National Parks for the 21st Century: The Vail Agenda, editor and primary author of the Report of the Steering Committee, National Park Foundation, Chelsea Green Publishing Co., 1992.

Cases in Microeconomics (with Jose A. Gomez-Ibanez), Prentice Hall, 1990.

Drawing the Line on Natural Gas Regulation, ed. (with F. C. Schuller) and author of two chapters, Greenwood-Praeger Press/Quorum Books, 1987.

The FACS/Ford Study of Economic and Business Journalism (with James T. Hamilton), Foundation for American Communications and the Ford Foundation, 1987.

The Economics and Politics of Oil Price Regulation: Federal Policy in the Post-Embargo Era, MIT Press, 1981; paperback edition, 1983.

Petroleum Price Regulation: Should We Decontrol? (with Kenneth J. Arrow), American Enterprise Institute, 1979.

PUBLICATIONS AND RESEARCH: ARTICLES

"Trade Corridor planning merits community input," (with Robin Shamback and Kurt Wadlington), in *Arizona Daily Star*, The Editorial Page, August 30, 2013, p. A17.

"American Indian Self-Determination: The Political Economy of A Successful Policy" (Co-Author with Stephen Cornell), Paper for American Academy of Sciences International Workshop on Minority Groups: U.S. and China, American Academy of Arts and Sciences, Tufts University, June 25-27, 2010.

"Is There Only One Cultural Path to Development? Sustainable Heterogeneity Among Contemporary American Indian Nations" (with Stephen Cornell and Miriam Jorgensen), Conference in Honor of Samuel Huntington, Cultural Change Institute, The Fletcher School, Tufts University, October 2008.

"The U.S. Energy Outlook: Will It Go from Bad to Worse?" in *The Issues Inside the Fishbowl*, FTI Consulting, April 2008.

"Two Approaches to the Development of Native Nations: One Works, the Other Doesn't" (with Stephen Cornell), in M. Jorgensen, ed., *Rebuilding Native Nations: Strategies for Governance and Development*, University of Arizona Press, 2007.

"Development, Governance, Culture: What Are They and What Do They Have to Do with Rebuilding Native Nations?" (with Manley A. Begay, Jr., Stephen Cornell, and Miriam Jorgensen), in M. Jorgensen, ed., *Rebuilding Native Nations: Strategies for Governance and Development*, University of Arizona Press, 2007.

"The Role of Constitutions in Native Nation Building: Laying a Firm Foundation," in M. Jorgensen, ed., *Rebuilding Native Nations: Strategies for Governance and Development*, University of Arizona Press, 2007.

"Seizing the Future: Why Some Native Nations Do and Others Don't" (with Stephen Cornell, Miriam Jorgensen and Katherine Spilde), in M. Jorgensen, ed., *Rebuilding Native Nations: Strategies for Governance and Development*, University of Arizona Press, 2007.

"Competition & Regulation, Part III: Tensions Evolve between Regulation and Competition" (with Charles Augustine and Joseph Cavicchi), in *Electric Light and Power*, www.elp.com, January/February 2006, pp. 24-25.

"Constitutional Rule and the Effective Governance of Native Nations," in Eric D. Lemont, ed., *Contemporary American Indian Constitutionalism and the Rebuilding of Native Nations*, University of Texas Press, 2006.

"Gradualism in Retail Restructuring" (with Charles Augustine and Joseph Cavicchi) in *Electric Light and Power*, www.elp.com, September/October 2005, pp. 26-30.

"Competition & Regulation in the Power Industry: Can the Two Coexist?" (with Charles Augustine and Joseph Cavicchi) in *Electric Light and Power*, www.elp.com, July/August 2005, pp. 28-31.

"Establishing a Tribal Development Corporation," *Forum on Establishing a Tribally Owned Development Corporation*, the United States Senate Committee on Indian Affairs, July 20, 2004.

"Economics, Law, and Politics: What Will Drive Energy's Future," in *Proceedings of the 50th Annual Institute of the Rocky Mountain Mineral Law Foundation*, vol. 50, p. 1-1 (2004), December 2005.

"Myths and Realities of Tribal Sovereignty: The Law and Economics of Indian Self-Rule" (with J. Singer), *Joint Occasional Papers in Native Affairs*, The Harvard Project on American Indian Economic Development, John F. Kennedy School of Government, Harvard University, January 2004.

"Partisan Misperceptions and Conflict Escalation: Survey Evidence from a Tribal/Local Government Conflict" (with Keith Allred and Kessely Hong), in *Third-Party Intervention eJournal*, November 2003.

"Roundtable: Recent Developments in Section 2" (with Aaron Edlin, A. Douglas Melamed, and Gary L. Roberts), *Antitrust Magazine*, vol. 18, No. 1, Fall 2003.

The First Nations Governance Act: Implications of Research Findings from the United States and Canada (with Stephen Cornell and Miriam Jorgensen), Report to the British Columbia Assembly of First Nations, July 2002.

"Public Policy Analysis of Indian Gaming in Massachusetts" (with Kenneth Grant and Jonathan B. Taylor), Faculty Research Working Paper Series #RWP02-019, John F. Kennedy School of Government, Harvard University, May 13, 2002.

"Means-Testing Indian Governments: Taxing What Works" (with Jonathan Taylor), in Richard C. Monk, ed., *Taking Sides: Race and Ethnicity*, McGraw-Hill/Dushkin, 2001.

"Where's the Glue? Institutional and Cultural Foundations of American Indian Economic Development" (with Stephen Cornell), *The Journal of Socio-Economics*, vol. 29, 2000.

"Open Access for Railroads? Implications for a Non-Hub, Congestible Network Industry" (with Amy B. Candell), Advanced Workshop in Regulation and Competition, Center for Research in Regulated Industries, May 2000 (unpublished working paper).

"What Tribes Can Do: An Interview with Joseph P. Kalt," *American Indian Report*, March 1999.

"Sovereignty and Nation-Building: The Development Challenge in Indian Country Today" (with Stephen Cornell), *The American Indian Culture and Research Journal*, vol. 22, no. 3, February 1999.

"Making Research Count in Indian Country: The Harvard Project on American Indian Economic Development" (with Manley A. Begay, Jr., and Stephen Cornell), *Journal of Public Service and Outreach*, vol. 3, no. 1, Spring 1998.

"Successful Economic Development and Heterogeneity of Governmental Form on American Indian Reservations" (with Stephen Cornell), in Merilee S. Grindle, ed., *Getting Good Government: Capacity Building in the Public Sector of Developing Countries*, Harvard University Press, 1997.

"Cultural Evolution and Constitutional Public Choice: Institutional Diversity and Economic Performance on American Indian Reservations" (with Stephen Cornell), Faculty Research Working Paper Series, John F. Kennedy School of Government, January 1995; reprinted in John Lott, ed., *Uncertainty and Economic Evolution: Essays in Honor of Armen A. Alchian*, Routledge Press, 1997.

"Regulatory Reform and the Economics of Contract Confidentiality: The Example of Natural Gas Pipelines" (with A. B. Jaffe, S. T. Jones, and F. A. Felder), *Regulation*, 1996, No. 1.

"Precedent and Legal Argument in U.S. Trade Policy: Do They Matter to the Political Economy of the Lumber Dispute?" in *The Political Economy of American Trade Policy*, Anne O. Krueger, ed., University of Chicago Press, 1996.

"Do Precedent and Legal Argument Matter in the Lumber CVD Cases?" in *The Political Economy of Trade Protection*, Anne O. Krueger, ed., University of Chicago Press, 1996.

"Introduction: The New World of Gas Regulation" (with Jerry Ellig), J. Ellig and J. P. Kalt, eds., *New Directions in Natural Gas Deregulation*, Greenwood Press, 1995.

"Incentive Regulation for Natural Gas Pipelines" (with Adam B. Jaffe), in J. Ellig and J. P. Kalt, eds., *New Directions in Natural Gas Deregulation*, Greenwood Press, 1995.

"Where Does Economic Development Really Come From? Constitutional Rule Among the Modern Sioux and Apache" (with Stephen Cornell), *Economic Inquiry*, Western Economic Association International, vol. XXXIII, July 1995, pp. 402-426.

"Insight on Oversight" (with Adam B. Jaffe), *Public Utilities Fortnightly*, April 1995.

"The Redefinition of Property Rights in American Indian Reservations: A Comparative Analysis of Native American Economic Development" (with Stephen Cornell), L. H. Legters and F. J. Lyden, eds., *American Indian Policy: Self-Governance and Economic Development*, Greenwood Press, 1994.

"Reloading the Dice: Improving the Chances for Economic Development on American Indian Reservations" (with Stephen Cornell), in J. P. Kalt and S. Cornell, eds., *What Can Tribes Do? Strategies and Institutions in American Indian Economic Development*, University of California, 1992, pp. 1-59.

"Culture and Institutions as Public Goods: American Indian Economic Development as a Problem of Collective Action" (with Stephen Cornell), in Terry L. Anderson, ed., *Property Rights and Indian Economies*, Rowman and Littlefield, 1992.

"The Regulation of Exhaustible Resource Markets" (with Shanta Devarajan), Environmental and Natural Resources Program, Center for Science and International Affairs, Kennedy School of Government, April 1991.

"Comment on Pierce," *Research in Law and Economics*, vol. 13, 1991, pp. 57-61.

"Pathways from Poverty: Economic Development and Institution-Building on American Indian Reservations" (with Stephen Cornell), *American Indian Culture and Research Journal*, 1990.

"The Apparent Ideological Behavior of Legislators: On-the-Job Consumption or Just a Residual?" (with Mark A. Zupan), *Journal of Law and Economics* 33 (April 1990), pp. 103-32.

"How Natural Is Monopoly? The Case of Bypass in Natural Gas Distribution Markets" (with Harry G. Broadman), *Yale Journal on Regulation*, Summer 1989.

"Culture and Institutions as Collective Goods: Issues in the Modeling of Economic Development on American Indian Reservations" (with Stephen Cornell), *Project Report*, Harvard Project on American Indian Economic Development, June 1989.

"Public Choice, Culture and American Indian Economic Development" (with Stephen E. Cornell), *Project Report*, Harvard Project on American Indian Economic Development, July 1988.

"The Political Economy of Protectionism: Tariffs and Retaliation in the Timber Industry," in R. Baldwin, ed., *Trade Policy Issues and Empirical Analysis*, University of Chicago Press, 1988.

"The Impact of Domestic Environmental Regulatory Policy on U.S. International Competitiveness," *International Competitiveness*, A.M. Spence and H.A. Hazard, eds., Ballinger Publishing Co., 1988.

"Re-Establishing the Regulatory Bargain in the Electric Utility Industry," *Discussion Paper Series*, Energy and Environmental Policy Center, Kennedy School of Government, March 1987, published as Appendix V in *Final Report of the Boston Edison Review Panel*, W. Hogan, B. Cherry and D. Foy, March 1987.

"Natural Gas Policy in Turmoil" (with Frank C. Schuller), in J. P. Kalt and F. C. Schuller, eds., *Drawing the Line on Natural Gas Regulation: The Harvard Study on the Future of Natural Gas Policy*, Greenwood-Praeger Press/Quorum Books, 1987.

"Market Power and Possibilities for Competition," in J. P. Kalt and F. C. Schuller, eds., *Drawing the Line on Natural Gas Regulation: The Harvard Study on the Future of Natural Gas Policy*, Greenwood-Praeger Press/Quorum Books, 1987.

"The Political Economy of Coal Regulation: The Power of the Underground Coal Industry," in R. Rogowsky and B. Yandle, eds., *The Political Economy of Regulation*, Federal Trade Commission, GPO, 1986, and in *Regulation and Competitive Strategy*, University Press of America, 1989.

"Exhaustible Resource Price Policy, International Trade, and Intertemporal Welfare," February 1986 (revised June 1988), *Journal of Environmental Economics and Management*, 1989.

"Regional Effects of Energy Price Decontrol: The Roles of Interregional Trade, Stockholding, and Microeconomic Incidence" (with Robert A. Leone), *Rand Journal of Economics*, Summer 1986.

"A Framework for Diagnosing the Regional Impacts of Energy Price Policies: An Application to Natural Gas Deregulation" (with Susan Bender and Henry Lee), *Resources and Energy Journal*, March 1986.

"Intertemporal Consumer Surplus in Lagged-Adjustment Demand Models" (with Michael G. Baumann), *Energy Economics Journal*, January 1986.

"A Note on Nonrenewable Resource Extraction Under Discontinuous Price Policy" (with Anthony L. Otten), *Journal of Environmental Economics and Management*, December 1985.

"Capture and Ideology in the Economic Theory of Politics" (with Mark A. Zupan), American Economic Review, June 1984; republished in *The Behavioral Study of Political Ideology and Public Policy Formation*, Carl Grafton and Anne Permaloff, eds., University Press of America, Inc., 2005, pp. 63-103; republished in *The Political Economy of Regulation*, Thomas P. Lyons, ed., Edgar Elger Publishing, 2007, chapter 9.

"A Comment on 'The Congressional-Bureaucratic System: A Principal Agent Perspective,'" *Public Choice*, Martinus Nijhoff Publishers, Dordrecht, The Netherlands, vol. 44, 1984, pp. 193-95.

"The Creation, Growth and Entrenchment of Special Interests in Oil Price Policy," in *Political Economy of Deregulation*, Roger G. Noll and Bruce M. Owen, eds., American Enterprise Institute, 1983.

"The Costs and Benefits of Federal Regulation of Coal Strip Mining," *Natural Resources Journal*, October 1983.

"Oil and Ideology US Senate," *The Energy Journal*, April 1982.

"Public Goods and the Theory of Government," *The Cato Journal*, Fall 1981.

"The Role of Governmental Incentives in Energy Production" (with Robert S. Stillman), *Annual Review of Energy*, vol. 5, Annual Reviews Inc., 1980, pp. 1-32.

"Why Oil Prices Should be Decontrolled" (with Kenneth J. Arrow), *Regulation*, September/October 1979, pp. 13-17.

"Technological Change and Factor Substitution US, 1929-67," *International Economic Review*, Spring/Summer 1977.

"The Capital Shortage: Concept and Measurement" (with George M. von Furstenberg), *The Journal of Economics and Business*, Spring/Summer 1977, pp. 198-210.

"Problems of Stabilization in an Inflationary Environment: Discussion of Three Papers," *1975 Proceedings of the Business and Economic Statistics Section: American Statistical Association Annual Meetings*, pp. 20-22.

RESEARCH REPORTS AND MONOGRAPHS

Tucson's New Prosperity: Capitalizing on the Sun Corridor, A Sun Corridor Legacy Program Concept Paper Prepared by the Sonoran Institute (with Dan Hunting and Luther Propst), Draft, The Sonoran Institute, Tucson Arizona, May 25, 2010.

Economists' Amici Brief to the United States Supreme Court (In re: Long-Term Contracts for Energy Markets, No.08-674; with Blaydon, Colin C., *et al.*), July 14, 2009.

Economic and Public Policy Analysis of the Proposed Western Navajo-Hopi Lake Powell Water Pipeline: *Prepared for the Hopi Nation*, March 19, 2008.

Economists' Amici Brief to the United States Supreme Court (In re: Long-Term Electric Power Contracts, Nos. 06-1457, 06-1462; with Baumol, Wm. J, *et al.*), November 28, 2007.

"The Links Between Air Quality Policies, Electric Power and Natural Gas Markets, and Macroeconomic Impacts: *Clear Skies Versus The Clean Air Planning Act*" (with Charles Augustine and Stephen Makowka), A Policy Analysis Study by Lexecon, an FTI Consulting Company, March 2004.

Alaska Native Self-Government and Service Delivery: What Works? (with Stephen Cornell), Report to the Alaskan Federation of Natives, The Harvard Project on American Indian Economic Development, John F. Kennedy School of Government, Harvard University, August 2003.

The Costs, Benefits, and Public Policy Merits of the Proposed Western Navajo-Hopi Lake Powell Pipeline (with Jonathan B. Taylor and Kenneth W. Grant II), December 22, 1999.

"A Public Policy Evaluation of the Arizona State Land Department's Treatment of the Island Lands Trust Properties at Lake Havasu City" (with Jonathan B. Taylor and Matthew S. Hellman), August 16, 1999.

"Reserve-Based Economic Development: Impacts and Consequences for Caldwell Land Claims" (with Kenneth W. Grant, Eric C. Henson, and Manley A. Begay, Jr.), August 10, 1999.

"Policy Recommendations for the Indonesian Petrochemical Industry" (with Robert Lawrence, Henry Lee, Sri Mulyani and LPEM, and DeWitt & Company), March 1, 1999.

"American Indian Gaming Policy and Its Socio-Economic Effects: A Report to the National Gambling Impact Study Commission" (with Stephen Cornell, Matthew Krepps, and Jonathan Taylor), July 31, 1998.

"Public Interest Assessment of the Proposed BLM/Del Webb Land Exchange in Nevada," report submitted to the U.S. Department of the Interior on behalf of Del Webb Conservation Holding Corporation, June 25, 1996.

"Politics Versus Policy in the Restructuring Debate," The Economics Resource Group, Inc., funded by Northeast Utilities System Companies, June 1995.

"Indexing Natural Gas Pipeline Rates" (with Amy B. Candell, Sheila M. Lyons, Stephen D. Makowka, and Steven R. Peterson), The Economics Resource Group, Inc., April 1995.

"An Economic Analysis of Electricity Industry Restructuring in New England" (with Adam B. Jaffe), The Economics Resource Group, Inc., funded by Northeast Utilities System Companies, April 1995.

"Oversight of Regulated Utilities' Fuel Supply Contracts: Achieving Maximum Benefit from Competitive Natural Gas and Emission Allowance Markets" (with Adam B. Jaffe), The Economics Resource Group, Inc., funded by Enron Gas Services Corporation, April 1993.

"Incentives and Taxes: Improving the Proposed BTU Tax and Fostering Competition in Electric Power Generation," Harvard University and The Economics Resource Group, Inc., March 10, 1993.

"An Assessment of the Impact of the PT Chandra Asri Petrochemical Project on Indonesia's Economy" (with Henry Lee, Dr. Robert Lawrence, Dr. Ronald M. Whitefield, and Bradley Blesie), The Economics Resource Group, Inc., December 1991.

"The Federal Energy Regulatory Commission's Proposed Policy Statement on Gas Inventory Charges (PL 89-1-000)" (with Charles J. Cicchetti and William W. Hogan), *Discussion Paper Series*, Energy and Environmental Policy Center, John F. Kennedy School of Government, Harvard University, July 1989.

"The Redesign of Rate Structures and Capacity Auctioning in the Natural Gas Pipeline Industry," *Discussion Paper Series*, Energy and Environmental Policy Center, John F. Kennedy School of Government, Harvard University, June 1988.

"A Review of the Adequacy of Electric Power Generating Capacity US , 1985-93 and 1993-Beyond" (with James T. Hamilton and Henry Lee), *Discussion Paper Series*, Energy and Environmental Policy Center, John F. Kennedy School of Government, Harvard University, June 1986.

"Energy Issues in Thailand: An Analysis of the Organizational and Analytical Needs of the Thailand Development Research Institute," Harvard Institute for International Development, March 1986.

"Old Gas Decontrol, FERC's Block Billing for Pipelines, and the Winners and Losers in Natural Gas Policy," prepared for the Natural Gas Supply Association (NGSA), December 1985.

"Natural Gas Decontrol, Oil Tariffs, and Price Controls: An Intertemporal Comparison," Energy and Environmental Policy Center, John F. Kennedy School of Government, Harvard University, April 1985.

"Market Structure, Vertical Integration, and Long-Term Contracts in the (Partially) Deregulated Natural Gas Industry," *Discussion Paper Series*, Harvard Institute of Economic Research, Harvard University, April 1985.

"Can a Consuming Region Win under Gas Decontrol?: A Model of Income Accrual, Trade, and Stockholding" (with Robert A. Leone), *Discussion Paper Series*, Energy and Environmental Policy Center, John F. Kennedy School of Government, Harvard University, February 1984.

"Natural Gas Decontrol: A Northwest Industrial Perspective" (with Susan Bender and Henry Lee), *Discussion Paper Series*, John F. Kennedy School of Government, Harvard University, November 1983.

"Natural Gas Decontrol: A Northeast Industrial Perspective" (with Henry Lee and Robert A. Leone), *Discussion Paper Series*, John F. Kennedy School of Government, Harvard University, October 1982.

"Television Industry Self-Regulation: Protecting Children from Competition in Broadcasting" (with George J. Holder), Harvard Institute of Economic Research, Discussion Paper No. 896, April 1982.

"The Use of Political Pressure as a Policy Tool During the 1979 Oil Supply Crisis" (with Stephen Erfle and John Pound), *Discussion Paper Series*, John F. Kennedy School of Government, Harvard University, April 1981.

"Problems of Minority Fuel Oil Dealers" (with Henry Lee), *Discussion Paper Series*, Energy and Environmental Policy Center, John F. Kennedy School of Government, Harvard University, April 1981.

OTHER PUBLICATIONS AND LEGISLATIVE TESTIMONY

"Tucson must not become bottom feeder underneath Phoenix's sprawl machine," *Arizona Daily Star*, Opinion, May 28, 2010.

Statement to U.S. House of Representatives Committee on Appropriations, Subcommittee on Interior, Environment, and Related Agencies, *The State of Indian America*, March 13, 2007.

Statement to U.S. Senate Committee on Indian Affairs, *Lessons in Economic Development*, Hearings Regarding International Lessons in Economic Development, September 12, 2002 (hearings cancelled September 11, 2002); published in U.S. Senate Committee on Indian Affairs, F*orum on Establishing a Tribally Owned Development Corporation*, July 20, 2004.

"Institution Building: Organizing for Effective Management" in *Building Native Nations: Environment, Natural Resources, and Governance*, ed. by Stephanie Carroll Rainie, Udall Center for Studies in Public Policy, The University of Arizona, 2003.

Statement to U.S. House of Representatives Committee on Government Reform, Subcommittee for Energy Policy, Natural Resources and Regulatory Affairs, Hearings Regarding Natural Gas Capacity, Infrastructure Constraints, and Promotion of Healthy Natural Gas Markets, Especially in California, October 16, 2001.

Statement to U.S. Senate Committee on Indian Affairs, *Harvard University Native American Program*, Hearings Regarding Native American Program Initiatives at the College and University Level (with Dr. Ken Pepion), June 21, 2001.

Statement to U.S. Senate Committee on Indian Affairs, *Impact of Federal Development Initiatives in Indian Country*, Hearing Regarding S.2052, of September 27, 2000.

Foreword to *Impossible to Fail*, J.Y. Jones, Hillsboro Press, 1999.

Statement to U.S. House of Representatives, Subcommittee on Energy and Mineral Resources, *Federal Oil Royalty Valuation* (HB 3334), Hearing of May 21, 1998.

Statement to the National Gambling Impact Study Commission, *Economic Impact of Gaming by American Indian Tribes*, Hearing of March 16, 1998.

"Measures Against Tribes Are Counterproductive," editorial (with Jonathan B. Taylor), *Indian Country Today*, September 22-29, 1997.

"American Indian Economic Development," *Tribal Pathways Technical Assistant Program Newsletter*, February 1997, p. 3.

Statement to U.S. Senate Committee on Indian Affairs, *Economic Development in Indian Country*, Hearing of September 17, 1996.

"A Harvard Professor Looks at the Effects of Allowing U.S. Hunters to Import Polar Bear Trophies," *Safari Times*, April 1994.

Statement to U.S. Congress, Joint Economic Committee, Subcommittee on Trade, Productivity and Economic Growth, *The Economic Impact of Lower Oil Price*, Hearing of March 12, 1986.

"Administration Backsliding on Energy Policy" (with Peter Navarro), *Wall Street Journal*, editorial page, February 9, 1982.

Statement to the Energy and Natural Resources Committee, U.S. Senate, *Government Responses to Oil Supply Disruptions*, Hearing of July 28-29, 1981, U.S. Government Printing Office, 1981, pp. 623-630 and 787-801.

"Staff Report on Effects of Restrictions on Advertising and Commercial Practice in the Professions: The Case of Optometry," Ronald S. Bond, *et al.*, Executive Summary, Bureau of Economics, Federal Trade Commission, September 1980.

"Redistribution of Wealth in Federal Oil Policy," *San Diego Business Journal*, August 18, 1980, pp. 22-23.

"The Energy Crisis—Moral Equivalent of Civil War" (with Peter Navarro), *Regulation*, January/February 1980, pp. 41-43.

"Windfall Profits Tax Will Reap Bonanza—But For Whom?" (with Peter Navarro), *The Miami Herald*, December 23, 1979, editorial page.

SELECTED PRESENTATIONS

"Indigenous Self-Government: The Political Economy of the Only Policy That Has Ever Worked," Ministry of Business, Innovation and Employment, Government of New Zealand, Wellington, NZ, April 18, 2013.

"American Indian Self-Government: The Political Economy of a Policy That's Worked," Dean's Distinguished Speakers Series, University of Auckland (NZ) Business School, April 16, 2013.

Keynote Address: "Harvesting Creosote to Build Houses: Is Arizona's Economic Model Sustainable?" 96th Arizona Town Hall, Tucson, AZ, April 26, 2010.

Keynote Address: "Resurgence and Renaissance in Indian America," Native American Business Association Annual Convention, Mississippi Choctaw Nation, April 29, 2008.

“Standard Oil to Today: Antitrust Enforcement in the Oil Industry,” American Bar Association, 56th Antitrust Law Spring Meeting, Washington, D.C., March 27, 2008.

Keynote Address: “Nation Building: Lessons from Indian Country,” National Native American Economic Policy Statement, Phoenix, AZ, May 15, 2007.

Keynote Address: “A Conversation on the State of the Native Nations: A Gathering of Leaders,” Res 2007, Las Vegas, NV, March 14, 2007.

“Foundations of Nation Building: The Roles of Culture, Institutions, & Leadership Among Contemporary American Indian Nations,” a lecture to faculty, staff and students, Marine Corps University, Quantico, VA, March 12, 2007.

Keynote Address: “The Universal Challenge of Nation Building,” First Annual Great Lakes Tribal Economic Development Symposium, Traverse City, MI, October 25-26, 2006.

Transcript of Keynote Address, “Setting the Agenda: What Will Drive Energy’s Future?” *Congressional Quarterly Forum*, “The Politics of Oil: U.S. Imperatives, Foreign Consequences,” Washington, D.C., September 13, 2005.

“The Role of the Tribal Courts and Economic Development,” Bureau of Indian Affairs, *Tribal Courts in the 21st Century*, Billings, MT, August 16, 2005.

“Linking Tribal Sovereignty to Economic Self-Determination in Indian Country,” *The Tribal Leaders Forum*, “Sovereignty in Crisis,” Las Vegas, NV, May 27, 2005.

“Competition and Regulation in the North American Electricity Industry: Can These Two Seemingly Opposed Forces Coexist?” (with Charles Augustine and Joseph Cavicchi), 24th Annual North American Conference, USAEE/IAEE, Energy, Environment, and Economics in a New Era, Washington, DC, July 8-10, 2004.

“The State of U.S. Railroads and the Challenges Ahead,” briefing of Capitol Hill staff, Association of American Railroads, April 17, 2003.

“The State of the Railroad Industry and the Challenges Ahead,” briefing of Roger Nober, Chairman, US Surface Transportation Board, Association of American Railroads, January 28, 2003.

“The Wealth of American Indian Nations: Culture and Institutions,” Federal Reserve Bank of Boston, December 11, 2002.

“The Roots of California’s Energy Crisis: Law, Policy, Politics, and Economics,” Regulation Seminar, Center for Business and Government, Kennedy School, Harvard University, November 7, 2002.

"Public Policy Foundations of Nation Building in Indian Country," National Symposium on Legal Foundations of American Indian Self-Governance," Mashantucket Pequot Nation, February 9, 2001.

"Twenty-Five Years of Self-Determination: Lessons from the Harvard Project on American Indian Economic Development," Udall Center for Studies in Public Policy, University of Arizona, November 13-14, 1999.

Proceedings of the Fourth Annual DOE-NARUC Natural Gas Conference, Orlando, FL, February 1995.

Keynote Address, "Sovereignty and American Indian Economic Development," Arizona Town Hall, Grand Canyon, AZ, October 1994.

"Is the Movement Toward a Less-Regulated, More Competitive LDC Sector Inexorable?, (Re)Inventing State/Federal Partnerships: Policies for Optimal Gas Use," U.S. Department of Energy and The National Association of Regulatory Utility Commissioners Annual Conference, Nashville, TN, February 1994.

"Cultural Evolution and Constitutional Public Choice: Institutional Diversity and Economic Performance on American Indian Reservations," Festschrift in Honor of Armen A. Alchian, Western Economic Association, Vancouver, BC, July 1994.

"Precedent and Legal Argument in U.S. Trade Policy: Do they Matter to the Political Economy of the Lumber Dispute?" National Bureau of Economic Research, Conference on Political Economy of Trade Protection, February, September 1994.

"The Redesign of Rate Structures and Capacity Auctioning in the Natural Gas Pipeline Industry," Natural Gas Supply Association, Houston, TX, March 1988.

"Property Rights and American Indian Economic Development," Pacific Research Institute Conference, Alexandria, VA, May 1987.

"The Development of Private Property Markets in Wilderness Recreation: An Assessment of the Policy of Self-Determination by American Indians," Political Economy Research Center Conference, Big Sky, MT, December 4-7, 1985.

"Lessons from the U.S, Experience with Energy Price Regulation," International Association of Energy Economists Delegation to the People's Republic of China, Beijing and Shanghai, PRC, June 1985.

"The Impact of Domestic Regulation on the International Competitiveness of American Industry," Harvard/NEC Conference on International Competition, Ft. Lauderdale, FL, March 7-9, 1985.

"The Welfare and Competitive Effects of Natural Gas Pricing," American Economic Association Annual Meetings, December 1984.

"The Ideological Behavior of Legislators," Stanford University Conference on the Political Economy of Public Policy, March 1984.

"Principal-Agent Slack in the Theory of Bureaucratic Behavior," Columbia University Center for Law and Economic Studies, 1984.

"The Political Power of the Underground Coal Industry," FTC Conference on the Strategic Use of Regulation, March 1984.

"Decontrolling Natural Gas Prices: The Intertemporal Implications of Theory," International Association of Energy Economists Annual Meetings, Houston, TX, November 1981.

"The Role of Government and the Marketplace in the Production and Distribution of Energy," Brown University Symposium on Energy and Economics, March 1981.

"A Political Pressure Theory of Oil Pricing," Conference on New Strategies for Managing U.S. Oil Shortages, Yale University, November 1980.

"The Politics of Energy," Eastern Economic Association Annual Meetings, 1977.

WORKSHOPS PRESENTED

University of Auckland; Ministry of Business, Innovation and Employment, Government of New Zealand; Federal Reserve Bank of Boston; University of Indiana; University of Montana; Oglala Lakota College; University of New Mexico; Columbia University Law School; Department of Economics and John F. Kennedy School of Government, Harvard University; MIT; University of Chicago; Duke University; University of Rochester; Yale University; Virginia Polytechnic Institute; U.S. Federal Trade Commission; University of Texas; University of Arizona; Federal Reserve Bank of Dallas; U.S. Department of Justice; Rice University; Washington University; University of Michigan; University of Saskatchewan; Montana State University; UCLA; University of Maryland; National Bureau of Economic Research; University of Southern California.

TEACHING

Markets and Market Failure with Cases (Harvard Kennedy School of Government, graduate); Native Americans in the 21st Century: Nation Building I & II (Harvard, University-wide, graduate and undergraduate); Competition, Strategy, and Regulation (Harvard Kennedy School of Government, graduate); Introduction to Nation Building/The Law, Policy, and Economics of Contemporary Tribal Economic Development (University of Arizona, School of Law and College of Management, graduate); Introduction to Environment and Natural Resource Policy (Harvard Kennedy School of Government, graduate); Seminar in Positive Political Economy (Harvard Kennedy School of Government, graduate); Intermediate Microeconomics for Public Policy (Harvard Kennedy School of Government, graduate); Natural Resources and Public Lands Policy (Harvard Kennedy School of Government, graduate); Economics of Regulation and Antitrust (Harvard Department of Economics, graduate); Economics of Regulation (Harvard Department of Economics, undergraduate); Introduction to Energy and Environmental Policy (Harvard Kennedy School of Government, graduate); Graduate Seminar in Industrial Organization and Regulation (Harvard Department of Economics, graduate); Intermediate Microeconomics (Harvard Department of Economics, undergraduate); Principles of Economics (Harvard Department of Economics, undergraduate); Seminar in Energy and Environmental Policy (Harvard Kennedy School of Government, graduate)

OTHER PROFESSIONAL ACTIVITIES

Working Advisory Board, National Institute for Civil Discourse, 2011-present

Board of Directors, Sonoran Institute, 2008-present

National Advisory Board, Big Sky Institute, Montana State University, 2007-present

Board of Trustees, The Communications Institute, 2003-present

Board of Trustees, Fort Apache Heritage Foundation, 2000-present (Chair, 2010-present)

Mediator (with Keith G. Allred), Nez Perce Tribe and the North Central Idaho Jurisdictional Alliance, MOU signed December 2002

Mediator, *In the Matter of the White Mountain Apache Tribe v. United States Fish and Wildlife Service*, re: endangered species management authority, May-December, 1994

Steering Committee, National Park Service, 75th Anniversary Symposium, 1991-1993

Board of Trustees, Foundation for American Communications, 1989-2003

Editorial Board, *Economic Inquiry*, 1988-2002

Advisory Committee, Oak Ridge National Laboratory, Energy Division, 1987-1989

Commissioner, President's Aviation Safety Commission, 1987-1988

Principal Lecturer in the Program of Economics for Journalists, Foundation for American Communications, teaching economic principles to working journalists in the broadcast and print media, 1979-2000

Lecturer in the Economics Institute for Federal Administrative Law Judges, University of Miami School of Law, 1983-1991

Research Fellow, Energy and Environmental Policy Center, John F. Kennedy School of Government, Harvard University, 1981-1987

Editorial Board, MIT Press Series on *Regulation of Economic Activity*, 1984-1992

Research Advisory Committee, American Enterprise Institute, 1979-1985

Editor, *Quarterly Journal of Economics*, 1979-1984

Referee for *American Economic Review, Bell Journal of Economics, Economic Inquiry, Journal of Political Economy, Review of Economics and Statistics, Science Magazine, Journal of Policy Analysis and Management, Social Choice and Welfare, Quarterly Journal of Economics,* MIT Press, North-Holland Press, Harvard University Press, *American Indian Culture and Research Journal*

SELECTED HONORS AND AWARDS

Distinguished Visiting Professor, University of Auckland Business School, April 2013.

Public *Sector Leadership Award*, National Congress of American Indians, Washington, DC, March 1, 2010.

First American Public Policy Award, First American Leadership Awards 2005, "Realizing the Vision: Healthy Communities, Businesses, and Economies," National Center for American Indian Enterprise Development, Phoenix, AZ, June 9, 2005.

Allyn Young Prize for Excellence in the Teaching of the Principles of Economics, Harvard University, 1978-1979 and 1979-1980.

Chancellor's Intern Fellowship in Economics, September 1973 to July 1978, one of two awarded in 1973, University of California, Los Angeles.

Smith-Richardson Dissertation Fellowship in Political Economy, Foundation for Research in Economics and Education, June 1977 to September 1977, UCLA.

Summer Research Fellowship, UCLA Foundation, June 1976 to September 1976.

Dissertation Fellowship, Hoover Institution, Stanford University, September 1977 to June 1978.

Four years of undergraduate academic scholarships, 1969-1973; graduated with University Distinction and Departmental Honors, Stanford University.

Research funding sources have included: Annie E. Casey Foundation; Nathan Cummings Foundation; Department of Indian Affairs and Northern Development (Canada); National Indian Gaming Association; The National Science Foundation; USAID (IRIS Foundation); Pew Charitable Trust; Christian A. Johnson Family Endeavor Foundation; The Ford Foundation; The Kellogg Foundation; Harvard Program on the Environment; The Northwest Area Foundation; the U.S. Department of Energy; the Research Center for

Managerial Economics and Public Policy, UCLA Graduate School of Management; the MIT Energy Laboratory; Harvard's Energy and Environmental Policy Center; the Political Economy Research Center; the Center for Economic Policy Research, Stanford University; the Federal Trade Commission; Resources for the Future; and The Rockefeller Foundation.

EXPERT TESTIMONY

TTX Company

Before the Surface Transportation Board, In re Finance Docket No. 27590 (Sub-No. 4), Application for Approval of Pooling Of Car Service with Respect to Flatcars, Verified Statement of Joseph P. Kalt, January 16, 2014.

Apple Inc.

In the United States District Court for the Southern District of New York, Docket No. 11-md-02293 (DLC) ECF Case, In Re: Electronic Books Antitrust Litigation v. Apple Inc., Declaration, November 15, 2013; Deposition, December 4, 2013.

Lao Holdings, N.V.

Lao Holdings, N.V., Claimant, v. The Government of the Lao People's Democratic Republic, Respondent, ICSID Case No. ARB/(AF)12/6, Witness Statement, July 22, 2013; Witness Statement, October 1, 2013.

Tri-State Generation and Transmission Association, Inc.

Before the Public Utility Commission of the State of Colorado, Docket No. 13F-0145E, La Plata Electric Association, Inc., et al. v. Tri-State Generation and Transmission Association, Inc., Witness Statement, July 5, 2013; Oral Testimony, August 1, 2013.

United Parcel Service Company

In the United States District Court for the Central District of California, Western Division, AFMS, LLC v. United Parcel Service Company and FedEx Corporation, Expert Report, February 8, 2013.

BNSF Railway Company, CSX Transportation, Inc., Norfolk Southern Railway Company, and Union Pacific Railroad Company

United States District Court for the District of Columbia, In Re: Rail Freight Fuel Surcharge Antitrust Litigation, MDL No. 1869, All Direct Purchaser Cases, Expert Report, January 22, 2013; Oral Deposition, May 28, 2013.

Equilon Enterprises, LLC, Motiva Enterprises LLC, Shell Oil Company, Shell Oil Products Company LLC, and Shell Trading (US) Company

In the United States District Court for the Southern District of New York, Case No. 08 Civ. 00312 (SAS), New Jersey Department of Environmental Protection, et al., Plaintiffs, against Atlantic Richfield Company, et al., Defendants, Expert Report, November 15, 2012; Deposition, May 14, 2013.

The Hershey Company

In the United States District Court for the Middle District of Pennsylvania, In Re: Chocolate Confectionary Antitrust Litigation: MDL Docket No. 1935 (Civil Action No. 1:08-MDL-1935), Expert Report, August 3, 2012; Oral Deposition, August 20, 2012; Declaration, November 5, 2012; Expert Report, May 31, 2013; Oral Deposition, June 20, 2013; Supplemental Expert Report, September 16, 2013.

Atlantic Richfield Company

In the United District Court for the Western District of Pennsylvania, Classes of Plaintiffs v. Babcock & Wilcox Power Generation Group, Inc., et al., Defendants, Civil Action No. 2:10-cv-00368-RCM, et al., Oral Deposition, May 4, 2012; Expert Report of Joseph P. Kalt, February 28, 2013; Videotaped Deposition, June 12, 2013.

Perenco Ecuador Ltd.

International Centre for Settlement of Investment Disputes: In The Arbitration Under The Convention on The Settlement of Investment Disputes Between States and Nationals of Other States and The Treaty Between The Republic of France and The Republic of Ecuador Concerning The Encouragement and Reciprocal Protection of Investment; Perenco Ecuador Limited, Claimant v. The Republic of Ecuador, Respondent, ICSID Case No. ARB/08/6, Statement, April 12, 2012; Supplemental Statement, November 7, 2012; Oral Testimony, November 15, 2012.

Electronic Arts, Inc.

In the United States District Court for the Northern District of California, Geoffrey Pecover and Andrew Owens, on behalf of themselves and all others similarly situated, Plaintiffs, v. Electronic Arts Inc., a Delaware Corporation, Defendant: Case No. 08-cv-02820 CW, Expert Report, March 8, 2012; Reply Report, April 12, 2012.

The PPL Companies, The Calpine Companies, Exelon Generation Company, NAEA Ocean Peaking Power, and The PSEG Companies

In the United States District Court for the District of New Jersey. PPL EnergyPlus et al., Plaintiffs, v. Lee A. Solomon et al., Defendants. Case 2:11-cv-00745-PGS-ES, Declaration, February 6, 2012.

MPS Merchant Services, Inc. (F/K/A Aquila Power Corporation) and Illinova Energy Partners, Inc.

Before the Federal Energy Regulatory Commission. Exh. No. MI-1, San Diego Gas & Electric Company, Complainant v. Sellers of Energy and Ancillary Services Into Markets Operated by the California Independent System Operator Corporation and the California Power Exchange, Respondents, Docket No. EL00-95-248, Prepared Direct Testimony, October 25, 2011; Oral Testimony, July 10, 2012.

Motiva Enterprises LLC, Shell Oil Company, and TMR Company

In the State of New Hampshire Superior Court, Case No. 03-C-550, State of New Hampshire, Plaintiff, against Hess Corporation et al., Defendants, Expert Report, October 17, 2011; Oral Deposition, December 6, 2011.

BP Exploration (America) Inc.

In the Superior Court for the State of Alaska at Anchorage, The State of Alaska, Plaintiff, v. BP Exploration (Alaska) Inc., a Delaware Corporation, Defendant, IN Case No. 3AN-09-6181 CI, Expert Report (with W. David Montgomery), September 30, 2011; Oral Deposition, January 18, 2012; Supplemental Expert Report, March 15, 2012; Oral Testimony, June 13, 2012.

Mobil Oil Corporation

In the Twenty-Sixth Judicial District, District Court, Stevens County, Kansas, Willie Jean Farrar, et al. Plaintiffs, vs. Mobil Oil Corporation, Defendant, Affidavit, September 14, 2011; Expert Report, March 23, 2012; Affidavit, June 1, 2012.

In the United States District Court, for the District of Kansas, Jimmie Hershey, on behalf of himself and all others similarly situated, Plaintiffs, v. ExxonMobil Oil Corporation, Defendant, Affidavit, June 1, 2012.

Intercontinental Terminals Company, LLC

In the District Court, Harris County, Texas, 133rd District; Cause No. 2010-66657; Port Terminal Railroad Association, Plaintiff, vs. Intercontinental Terminals Company, LLC, Vopak North American, Inc., and Vopak Terminal Deer Park, Inc., Defendants, vs. Mitsui & Col. USA, Inc., Third-Party Defendant; Expert Report, September 2, 2011.

Motiva Enterprises, LLC

In the Circuit Court of the Eleventh Judicial Circuit in and for Miami-Dade County, Florida, Bay Point Oil Corp., et al, Plaintiffs, vs. Motiva Enterprises, LLC, Defendant, Case No. 03-03572, and *Hollywood Hills Service Center, Inc., et al, Plaintiffs, vs. Motiva Enterprises, LLC, Defendant, Case No. 04-13857 CA (30)*, Declaration, July 15, 2011; Affidavit, May 25, 2012.

Kaiser-Francis Oil Company

In the United States District Court for the Western District of Oklahoma, J.C. Hill, et al., Plaintiffs, v. Kaiser-Francis Oil Company, Defendant, Case No. CIV-09-07-R, Affidavit, June 7, 2011; Expert Report, December 2, 2011; Supplemental Expert Report, August 13, 2012; Affidavit, October 19, 2012; Affidavit, November 7, 2012.

Progress Energy and Duke Energy

Before the Public Service Commission of South Carolina, Docket No. 2011-158-E, In the Matter of Application of Duke Energy Corporation and Progress Energy, Inc. to Engage in a Business Combination Transaction, Direct Testimony, September 14, 2011; Rebuttal Testimony, November 30, 2011; Oral Testimony, December 12, 2011.

North Carolina Utilities Commission, Docket Nos. E-2, Sub 998 and E-7 Sub 986, In the Matter of Application of Duke Energy Corporation and Progress Energy, Inc. to Engage in a Business Combination Transaction and Address Regulatory Conditions and Codes of Conduct, Testimony, May 20, 2011; Rebuttal Testimony, September 15, 2011; Oral Testimony, September 21, 2011.

Before the Public Service Commission of South Carolina, In the Matter of Application of Duke Energy Carolinas to Engage in a Business Combination Transaction, Docket No. 2011-158-E., Rebuttal Testimony, December 8, 2011.

United States Soccer Federation Inc. and Major League Soccer LLC

In the United States District Court, Northern District of Illinois Eastern Division, Champions World LLC, Plaintiff, v. United States Soccer Federation Inc. and Major League Soccer LLC, Defendants, Case No. 06-CV-5724, Expert Report, May 13, 2011; Oral Deposition, September 22-23, 2011.

The AES Corporation, Tau Power B.V.

At the International Centre for Settlement of Investment Disputes, Case No ARB/10/16, The AES Corporation, Tau Power B.V. and The Republic of Kazakhstan, Expert Report of Joseph P. Kalt and Howard N. Rosen (FTI Consulting Inc.), April 28, 2011; Rebuttal Expert Report of Joseph P. Kalt and Howard N. Rosen (FTI Consulting Inc.), March 30, 2012; Supplemental Expert Report of Joseph P. Kalt, August 6, 2012; Oral Testimony, September 14, 2012; Expert Report of Joseph P. Kalt and Howard N. Rosen (FTI Consulting Inc.), November 2, 2012; Oral Testimony, February 6-7, 2013.

Dairy Farmers of America, Inc. and Dairy Marketing Services, LLC

In the US District Court for the District of Vermont, Alice H. Allen and Laurence E. Allen d/b/a/ Al-Lens Farm et al, Plaintiffs, v. Dairy Farmers of America Inc., Dairy Marketing Services, LLC, and Dean Foods Company, Defendants, Docket No. 5:09-cv-00230-cr, Expert Report, April 5, 2011; Declaration, April 12, 2011; Oral Deposition, May 6, 2011; Reply Report, July 6, 2011; Expert Report, December 16, 2011; Oral Deposition, February 14, 2012; Expert Report, May 11, 2012; Reply Report, July 26, 2013.

Devon Energy Corporation, BP America Production, and Conoco Phillips Co.

In the First Judicial District Court, State of New Mexico, County of Santa Fe, Phillis Ideal and Collins Partners, Ltd., a Texas Limited Partnership, Plaintiffs, v. BP America Production Company, Defendant, Case No.: D-0101-CV-2003-02310, Affidavit, June 27, 2011.

In the First Judicial District Court, State of New Mexico, County of Santa Fe, F. Ferrell Davis, Plaintiff, v. Devon Energy Corporation, et al., Defendants, No. D-0101-CV-200301590, Affidavit, March 30, 2011; Affidavit, June 26, 2011; Expert Report, July 6, 2012; Oral Deposition, August 6, 2012; Affidavit, October 22, 2012.

In the First Judicial District Court, State of New Mexico, County of Santa Fe, Smith Family, LLC, Plaintiff, v. ConocoPhillips Company, Defendant, No. D-0101-CV-200302311, Affidavit, May 18, 2012; Affidavit, August 24, 2012.

ICM Assurance Ltd. and Nexen Inc.

In the Matter of the Arbitration Pursuant to the UK Arbitration Act 1996 Between ICM Assurance Ltd. and Nexen Inc., Claimants, v. Oil Insurance Limited, Respondent, Expert Report, December 17, 2010.

Atlantic Richfield Company

Superior Court for the State of California, County of Santa Clara, Case No. 1-00-CV-788657, the People of the State of California vs. Atlantic Richfield Company, et al., Deposition, September 26, 2011; Deposition, December 19, 2012.

In the US District Court for the Eastern District of Wisconsin, Glenn Burton, Jr., Plaintiff, Case No. 07-CV-0303, vs. American Cyanamid Co., et al., Defendants; and in the State of Wisconsin Circuit Court: County of Milwaukee, Yasmin Clark, Minor, by her guardian ad litem, Susan M. Gramling, Plaintiff, Case No. 06-CV-012653, vs. American Cyanamid Co., et al., Defendants, Telephonic Deposition of Joseph P. Kalt, September 28, 2010.

State of Wisconsin Circuit Court, Milwaukee County, No. 99-CV-6411, Steven Thomas v Atlantic Richfield Co., et al., Deposition, April 5-6, 2006; Affidavit, April 27, 2007; Videotaped Deposition, May 3, 2007.

Superior Court of the State of Rhode Island, No. 99-5226, State of Rhode Island, Attorney General v Lead Industries Association, Inc., et al., Deposition, May 11-12, 2005; Deposition, August 18-19, 2005.

New England Power Generators Association

Before the Federal Energy Regulatory Commission. RE: ISO New England Inc. and New England Power Pool, Docket No. ER10-787-000, EL10-50-000, EL10-57-000, Second Brief of the New England Power Generators Association Inc., Written Testimony, September 1, 2010.

PPL Corporation and E.ON U.S. LLC

Before the Federal Energy Regulatory Commission, In re Docket No. EC10-__-000, Application for Approval Pursuant to Section 203 of the Federal Power Act, Volume 1 of 3; Affidavit filed with Joseph Cavicchi, June 28, 2010.

BNSF Railway Company

Before the Surface Transportation Board, In re STB Finance Docket No. 35305, Petition of Arkansas Electric Cooperative Corporation for a Declaratory Order, Rebuttal Verified Statement of Joseph P. Kalt and Glenn Mitchell, June 4, 2010.

Cypress Semiconductor Corporation

In the US District Court for the Northern District of California Oakland Division, In re SRAM Antitrust Litigation, MDL No. 1819, Expert Report, May 4, 2010; Oral Deposition, June 8, 2010.

Dean Foods Company, et al.

In the US District Court for the Eastern District of Tennessee Greenville Division, Sweetwater Valley Farm, Inc., et al., Plaintiffs, vs. Dean Foods Company, et al., Defendants, MDL No. 1899, Expert Report, May 3, 2010; Oral Deposition, June 23-24, 2010; Expert Report, August 12, 2011.

In the US District Court for the Eastern District of Tennessee Greenville Division, Sweetwater Valley Farm, Inc., et al., No. 2:07-cv-208, Plaintiffs, vs. Dean Foods Company, et al., Defendants, Case No. 2:08-MD-01000, Declaration, March 30, 2011; Supplemental Declaration, March 15, 2012.

In the US District Court for the Eastern District of Tennessee Greenville Division, Food Lion, LLC, et al., Plaintiffs, vs. Dean Foods Company, et al., Defendants, Case No. 2:07-CV-188, Expert Report, May 3, 2010; Oral Deposition, June 11, 2010.

McKesson Corporation

In the US District Court for the District of Massachusetts, San Francisco Health Plan individually and on behalf of the State of California, et al., Plaintiffs v McKesson Corporation, Defendant in C.A. No. 1:08-cv-10843-PBS; Responsive Expert Report, September 19, 2011.

In the US District Court for the District of Massachusetts, the State of Connecticut v. McKesson Corporation in Civil Action No. 08-10900-PBS, Responsive Expert Report, April 14, 2010.

In the US District Court for the District of Massachusetts, New England Carpenters Health Benefits Fund, et al. v First Databank, Inc. and McKesson Corporation, No. 05-11148-PBS, Report, January 28, 2008; Rebuttal Report, October 1, 2008.

CITGO Petroleum Corporation

In the United States District Court, Northern District of Oklahoma, in Re: Stephenson Oil Company, on behalf of itself and all others similarly situated, Plaintiff, vs. CITGO Petroleum Corporation, Defendant, Case No. 08-CV-380-TCK-TLW, Expert Report, November 20, 2009; Oral Testimony, February 25, 2010.

Confederated Tribes of the Chehalis Reservation

In the United States District, Western District of Washington at Tacoma, in Re: Confederated Tribes of the Chehalis Reservation, Plaintiffs, v. Thurston County Board of Equalization, Defendants, Civil Action No. C08 5562, Expert Report, October 15, 2009; Oral Deposition, December 4, 2009.

Rio Tinto

In the Australian Competition Tribunal, Application for the Review of the Deemed Decision by the Commonwealth Treasurer of 23 May 2006 Under Section 44H(9) of the Trade Practices Act in Relation to the Application for Declaration of Services Provided by The Mount Newman Railway Line; Application for Review of the Decision by the Commonwealth Treasurer of October 27, 2008 Under Section 44h(1) of Trade Practices Act in Relation to the Application for Declaration of a Service Provided by the Robe Railway; Application for Review of the Decision by the Commonwealth Treasurer of October 27, 2008 Under Section 44h(1) of Trade Practices Act in Relation to the Application for Declaration of a Service Provided by the Hamersley Rail Network; and *Application for Review of the Decision by the Commonwealth Treasurer of October 27, 2008 Under Section 44h(1) of Trade Practices Act in Relation to the Application for Declaration of a Service Provided by the Goldsworthy Railway*, Affidavit, July 3, 2009.

North West Shelf Gas Party Ltd.

In the Matter of the Commercial Arbitration Act and an Arbitration Between Woodside Energy Ltd. and Others, Sellers, and Alinta Sales Party Ltd., Buyer, Statement and Expert Report on Behalf of the Sellers, July 3, 2009; Oral Testimony, August 26-27, 2009.

Gunnison Energy Corporation, SG Interests I, Ltd., and SG Interests VII, Ltd.

In the United States District Court for the District of Colorado In re: Riviera Drilling & Exploration Company, Plaintiff, v. Gunnison Energy Corporation, SG Interests I, Ltd., and SG Interests VII, Ltd., Defendants, Civil Action No. 08-cv-02486-REB-CBS, Expert Report, June 24, 2009; Expert Rebuttal Report, August 24, 2009; Deposition, October 20, 2009.

Gannett Company, Inc. *et al.*

In the United States District Court for the District of Arizona, State of Arizona ex rel. Terry Goddard, Attorney General, Plaintiff, v. Gannett Company, Inc.; Citizen Publishing Company; Lee Enterprises, Inc.; Star Publishing Company; and TNI Partners, Defendants, Affidavit, May 18, 2009.

Hyundai Heavy Industries Co., Ltd., *at al*.

International Chamber of Commerce, Court of Arbitration Case No. 15521/JEM/CYK, Hyundai Heavy Industries Co., Ltd., et al., Claimants v. International Petroleum Investment Company, et al., Respondents, Witness Statement, February 20, 2009; Oral Testimony, May 27, 2009.

Shell Oil Company; Shell Oil Products Company; Shell Trading (US) Company, LLC; Shell Enterprises, LLC; Motiva Enterprises, LLC; and TMR Company

In the United States District Court for the Southern District of New York, MDL No. 1358, Case No. 04-CV-3417 (SAS), In re: Methyl Tertiary Butyl Ether ("MTBE"), City of New York, Plaintiff v Amerada Hess Corporation, et al., Defendants, Expert Report, February 13, 2009; Supplemental Expert Report, March 30, 2009.

City of Los Angeles, California, *et al.*

US District Court, District of Columbia, Federal Maritime Commission v. City of Los Angeles, California, et al. Civil Action No. 1:08-cv-010895-RJL, Declaration, November 26, 2008.

PPL Companies

Federal Energy Regulatory Commission, Docket No. EL08-67-00 Protest of the PPL Companies to the Complaint of the RPM Buyers, Affidavit (with A.J. Cavicchi), July 11, 2008; *Answer of the PPL Companies to the Motion for Leave to Answer and Answer of the RPM Buyers,* Suppl. Affidavit (with A.J. Cavicchi), August 12, 2008.

Federal Government of Canada

London Court of International Arbitration, In the Matter of Arbitration No. 111790, The United States of America v. Canada, Expert Witness Report of Joseph P. Kalt, November 9, 2011; Rebuttal Expert Report, Ex. R-151, February 3, 2012; Oral Testimony, March 6, 2012.

London Court of International Arbitration, In the Matter of Arbitration No. 81010, The United States of America v. Canada, Expert Witness Statement of Joseph P. Kalt, February 20, 2009; Rebuttal Expert Witness Report, May 8, 2009; Second Rebuttal Expert Witness Report, July 7, 2009; Oral Testimony, July 22-23, 2009; Expert Report (with Robert H. Topel), June 22, 2010.

London Court of International Arbitration, In the Matter of Arbitration No. 91312, The United States of America v. Canada, Expert Witness Statement of Joseph P. Kalt and David Reishus, May 12, 2009; June 11, 2009.

London Court of International Arbitration, In the Matter of Arbitration No. 7941, The United States of America v. Canada, Statement (with D. Reishus) June 29, 2008; Rebuttal Statement (with David Reishus), August 11, 2008; Oral Testimony, September 22-23, 2008.

ExxonMobil Corporation; *et al.*

US District Court, District of Columbia, Cause No. 1:04CV00940, City of Moundridge, Kansas et al. v ExxonMobil Corporation, et al., Affidavit, January 11, 2006; Report, June 5, 2008.

City of Las Cruces, New Mexico

State of New Mexico, et al. Plaintiffs, v. City of Las Cruces, New Mexico, and Dona Ana Mutual Domestic Water Consumers Association, Defendants, No. CV-06-1289, Declaration, May 16, 2008.

Association of American Railroads

Surface Transportation Board, Petition of the Association of American Railroads to Institute a Rulemaking Proceeding to Adopt a Replacement Cost Methodology to Determine Railroad Revenue Adequacy, Statement (with J. Klick), May 1, 2008.

Chevron USA, Inc., *et al.*

US District Court, Eastern District of Texas, Texarkana Division, United States of America ex rel. Harrold E. (Gene) Wright v Chevron USA, Inc., et al., No. 5:03cv264, Reports, April 1, 2008 (Unocal, Mobil), April 11, 2008 (Mobil); Depositions, April 14, 20-21, 2008.

Infineon Technologies AG

US District Court, Northern District of California, Dynamic Random Access Memory (DRAM) Antitrust Litigation (*Dockets No. 06-cv-1665, 07-cv-1200, 07-cv-1207, 07-cv-1212, 07-cv-1381*), Report, March 7, 2008; Deposition, April 26, 2008.

Exxon Mobil Corporation

State of Alaska Department of Natural Resources and Alaska Department of Revenue, Call for Public Comments Regarding the TransCanada Alaska Company, LLC…, Statement, March 6, 2008; *Before the Alaska State 25th Legislature Third Special Session, Regarding the TransCanada Application Pursuant to the Alaska Gasoline Inducement Act*, Statement, July 10, 2008.

Tyco Healthcare Group L.P. and Mallinckrodt Inc.

US District Court, Central District of California, Western Division, Allied Orthopedic Appliances, Inc., et al. v Tyco Healthcare Group L.P. and Mallinckrodt Inc., No. V-05-6419-MFP (AJWx), Report, February 1, 2008; Deposition, March 4, 2008.

P3 Group

Federal Energy Regulatory Commission, Docket No. EL08-34-000, Maryland Public Service Commission v PJM Interconnection, L.L.C., Affidavit (with A.J. Cavicchi), February 19, 2008.

Tractebel Energy Marketing, Inc.

Tractebel Energy Marketing, Inc. v AEP Power Marketing, Inc., et al., Nos. 03 CV 6731, 03 CV 6770, Report, January 21, 2008.

Cabot Corporation

US District Court, District of Massachusetts, AVX Corporation and AVX Limited v Cabot Corporation, C.A. No. 04 CV 10467 RGS, Report, January 15, 2008; Deposition, March 12, 2008.

Columbia Gas Transmission Corporation, *et al.*

US District Court, Southern District of West Virginia, Stand Energy Corp., et al. v Columbia Gas Transmission Corp., et al., No. 2:04-0867, Report, December 18, 2007; *Civil Action Nos. 2:04-0868 through 0874*, Videotaped Deposition, February 7, 2008; *Civil Action No. 2:04-0867*, Expert Report, September 30, 2008.

Nissan North America, Inc.

US District Court, District of Maine, MDL Docket No. 03-md-1532, ALL CASES, In Re: New Motor Vehicles Canadian Export Antitrust Litigation, Report, October 26, 2007; Deposition, December 13, 2007.

Energy Transfer Partners, L.P.

Federal Energy Regulatory Commission, Docket No. IN06-3-002, Answer of Energy Transfer Partners, L.P, Affidavit (with John R. Morris), October 9, 2007; Suppl. Affidavit *Docket No. IN06-3-003* (with John R. Morris), March 31, 2008; Prepared Answering Testimony, March 31, 2009; Deposition, April 21-22, 2009.

Equilon Enterprises LLC, *et al.*

US District Court, Eastern District of Missouri, Eastern Division, Daniels Self, et al. v Equilon Enterprises LLC, et al., Cause No. 4 00CV0193 TIA, Report, September 4, 2007; Deposition, September 22, 2007.

Occidental Petroleum Corporation

Arbitration under the Convention on the Settlement of Investment Disputes Between States and Nationals of Other States and the Treaty Between the United States of America and the Republic of Ecuador Concerning the Encouragement and Reciprocal Protection of Investment, ICSID No. ARB/06/11, Report, September 17, 2007; Rebuttal Witness Statement, June 12, 2009; Oral Testimony, November 7, 2009; Joint Expert Report with Daniel Johnston, April 11, 2011; Supplemental Joint Expert Report with Daniel Johnston, June 10, 2011; Second Supplemental Joint Expert Report with Daniel Johnston, June 24, 2011.

The Hanwha Companies, ORIX Corporation, and Macquarie Life Limited

International Court of Arbitration of the International Chamber of Commerce, Korea Deposit Insurance Corporation v Hanwha Companies, ORIX Corporation, and Macquarie Life Limited, ICC No. 14501/JB/JEM/EBS (c. 14502/JB/JEM/EBS), Report, July 13, 2007; Reply Report, September 7, 2007.

New Times Media LLC, *et al.*

Supreme Court of the State of California, In and For the County of San Francisco, Unlimited Jurisdiction, Bay Guardian Company, Inc. v New Times Media LLC, et al., No.: 04-435584, Report, June 27, 2007; Declaration, June 28, 2007; Deposition, December 18, 2007; Oral Testimony, February 14, 2008.

American Electric Power Service Corporation, *et al.*

Federal Energy Regulatory Commission, The People of the State of Illinois, ex rel., Illinois Attorney General Lisa Madigan v Exelon Generation Co., LLC, et al., Docket No. EL07-47-000, Affidavit (with J. Cavicchi), June 18, 2007.

Western Refining, Inc.

US District Court, Federal Trade Commission v Western Refining, Inc., et al., No. 1:07-CV-00352-JB-ACT, Report, May 2, 2007; Deposition, May 6, 2007; Oral Testimony, May 11, 2007.

Equilon Enterprises LLC dba Shell Oil Products US, *et al.*

US District Court, Central District of California, Southern Division, No. SACV-04-10370 JVS (JTLx), Report, November 20, 2006; Rebuttal Report, December 22, 2006; Declarations, February 12, 2007, February 15, 2007, March 12, 2007, March 26, 2007; Addendum to Rebuttal Report, March 26, 2007; Oral Testimony, June 20, 2007.

Qualcomm, Inc., *et al.*

US District Court, Eastern District of Texas, Tyler Division, Golden Bridge Technology Inc., Plaintiffs v. Nokia, Inc. et al., Defendants, Civil Action No. 6:06-cv-163 LED, Report, November 7, 2006; Deposition, December 8, 2006.

ExxonMobil Corporation

ExxonMobil Royalty Settlement Agreement Reopener: Direct Cost Reopener, Report, July 31, 2006; Rebuttal Report, September 13, 2006.

ExxonMobil Corporation

Internal Revenue Service, Reports, June 29, 2006, December 15, 2006 (with D. Reishus).

Individual Defendants

US District Court, Southern District of Texas, Civil Action No. H-05-0332; U.S. Commodity Futures Trading Commission v Denette Johnson, Report, June 14, 2006; Oral Testimony, August 30, 2006; Affidavit, April 20, 2007; Affidavit, May 23, 2007; Oral Testimony, January 11, 2008.

BP America Production Company, *et al.*

State of New Mexico, County of Santa Fe First Judicial District, No. D-0101-CV-200001620, Laura Dichter, et al. v BP America Production Company, et al., Affidavit, February 8, 2006; Report, March 23, 2007.

TAPS Carriers (BP Pipelines (Alaska) Inc.; *et al.*)

Federal Energy Regulatory Commission, In the Matter of: BP Pipeline (Alaska), Inc., et al.; Docket Nos. OR05-2, OR05-3, OR05-10, IS05-82, IS05-80, IS05-72, IS05-96, IS05-107, IS06-70, IS06-71, IS06-63, IS06-82, IS06-66, IS06-1, OR06-2, Testimony (All TAPS Carriers), December 7, 2005; Testimony (Designated TAPS Carriers), December 7, 2005; Answering Testimony (All TAPS Carriers), May 26, 2006;

Rebuttal Testimony (All TAPS Carriers), August 11, 2006; Oral Rebuttal Testimony (All TAPS Carriers), November 2-3, 2006.

BP America Production Company F/K/A Amoco Production Company, *et al.*

District Court of Kleberg County, Texas, Camp Gilliam v BP America Production Company F/K/A Amoco Prod. Co., et al., Cause No. 03-445-D; Report, November 18, 2005; Oral/Video Deposition, January 10, 2006.

General Motors Corporation, *et al.*

US District Court, District of Maine, MDL Docket No. 03-md-1532, ALL CASES, In Re: New Motor Vehicles Canadian Export Antitrust Litigation, Report, September 30, 2005; Deposition, December 6, 2005; Report, December 1, 2006.

OXY USA, Inc.

Eighth Judicial District Court, State of New Mexico, County of Union, No. 04-24 CV, Heimann, et al. v Oxy USA, Inc., Report, July 13, 2005.

US Bancorp

Superior Court of Los Angeles County, Central District, State of California, No. BC 285 134, Auerbach Acquisition Associates, Inc. v Greg Daily et al., Deposition, June 21, 2005.

PPL Corporation

Federal Energy Regulatory Commission, PJM Interconnection, L.L.C., Docket Nos. ER05-1410-000 and EL05-148-000, Motion to Intervene and Protest of the PPL Parties; Affidavit (with A.J. Cavicchi and D. Reishus), October 19, 2005; "A Policy Analysis of PJM's Proposed Four-Year Forward Capacity Market"; submitted in PPL Resource Adequacy Market Proposal, Docket No. PL05-7-000, (with A.J. Cavicchi), June 16, 2005.

SBC Communications, Inc.

Federal Communications Commission, Special Access Rates for Price-Cap Local Exchange Carriers, WC Docket No. 05-25, RM-10593, Statement, June 13, 2005.

General Electric and Bechtel

Arbitration Under an Agreement Between the Government of the Republic of Mauritius and the Government of the Republic of India for the Promotion and Protection of Investments and Under the Citral Rules, Capital India Power Mauritius I and Energy Enterprises (Mauritius) Company (Claimants) and the Government of the Republic of India (Respondent), Report (with D. Newbery and T. Lumsden), May 23, 2005.

Hamersley Iron/Rio Tinto

Before the National Competition Council, Melbourne, Australia, FMG Access Application, Statement, May 2, 2005; *Pilbara Infrastructure Party, Ltd. Application*, Statement, April 30, 2008.

Duke Energy LNG Services, Inc.

Arbitration under the uncitral rules. L'Enterprise Nationale pour la Recherche, la Production, le Transport, la Transformation et al Commercialisation des Hydrocarbons, and Sonatrading (Amsterdam) B.V., Claimants; and Duke Energy LNG Services, Inc., Report, April 22, 2005**;** Second Report, November 11, 2005; Oral Testimony, February 16, 2006.

Surface Transportation Board, Ex Parte 657, Rail Rate Challenges Under the Stand-Alone Cost Methodology, Statement, April 30, 2005; Oral Statement, April 26, 2005; Statement, May 1, 2006; Reply Statement, May 31, 2006; Rebuttal Statement, June 30, 2006.

BNSF Railway Company

Surface Transportation Board, STB Docket No. 42088, Western Fuels Association, Inc. and Basin Electric Power Cooperative, Inc. v BNSF Railway Company, Statement, April 19, 2005; Reply Statement, July 20, 2005; Rebuttal Statement, September 30, 2005.

Community of Awas Tingni

Inter-American Court of Human Rights, Mayagna (Sumo) Indigenous Community of Awas Tingni Against the Republic of Nicaragua, Report (with M. Begay), April 15, 2005.

PPL Corporation

State of New Jersey Board of Public Utilities, The Joint Petition of Public Service Electric and Gas Company and Exelon Corporation for Approval of a Change in Control of Public Service Electric and Gas Company, and Related Authorizations, Docket No. EM05020106, OAL Docket No. PUC-1874-05, Testimony, November 14, 2005; Surrebuttal Testimony, December 27, 2005; Oral Testimony, January 12, 2006; Reply Testimony, March 17, 2006; Pennsylvania Public Utility Commission, Surrebuttal Testimony, August 26, 2005.

Federal Energy Regulatory Commission, Docket No. EC05-43-000, Testimony, April 11, 2005; Suppl. Testimony, May 27, 2005; Affidavit, August 1, 2005.

Sovereign Risk Insurance Limited

American Arbitration Association, ZC Specialty Insurance Company v Sovereign Risk Insurance Limited, No. 50 T 153 0055203, Report, March 10, 2005; Suppl. Report, April 11, 2005.

ExxonMobil Corporation

State of Alaska v. ExxonMobil; JAMS (Joint Arbitration & Mediation Services) Ref. No. 1220032196; ExxonMobil Royalty Settlement Agreement Reopener: Destination Value, Report, March 4, 2005; Rebuttal Report, March 24, 2005; Oral Testimony, April 7, 2005.

PPL Montana, LLC

Federal Energy Regulatory Commission, RE: PPL Montana, LLC, et al., Docket No. ER99-3491-__, Testimony (with A.J. Cavicchi), November 9, 2004; Affidavit (with A.J. Cavicchi), February 28, 2005; Affidavit (with A.J. Cavicchi), November 14, 2005; First Suppl. Affidavit, (with A.J. Cavicchi), December 23, 2005; Affidavit (with A.J. Cavicchi), February 1, 2006.

T-Mobile

Superior Court of the State of California, County of Alameda, No. 4332, Cell Phone Termination Fee Cases, Affidavit, January 17, 2005, Declaration, November 6, 2008.

Shell Oil Company, Texaco Refining and Marketing Inc., Equilon Enterprises LLC

US District Court, Central District of California, No. SACV- 03-565-JVS (JTLx), Andre Van Der Valk, et al. v Shell Oil Company, et al., Report, October 8, 2004; Rebuttal Report, November 8, 2004; Deposition, December 13, 2004; Second Rebuttal Report, April 4, 2005.

Shell Oil Products Company, LLC, Shell Oil Company, and Motiva Enterprises, LLC

US District Court, District of Massachusetts, Mac's Shell Service, Inc., et al. v Shell Oil Products Company, LLC, et al., No. 01-CV-11300-RWZ, Report, July 6, 2004; Deposition, July 29, 2004; Oral Testimony, November 30-December 1, 2004; Declaration Re: Expert Testimony of Brian S. Gorin, October 14, 2008; Declaration Re: Expert Testimony of Richard J. Olsen, October 14, 2008.

Equilon Pipeline Company

US District Court, Western District of Washington at Seattle, No. C01-1310L, Olympic Pipeline Co. v Equilon Pipeline Co., LLC, et al., Report, June 18, 2004; Deposition, June 29-30, 2004; Suppl. Report, October 27, 2004.

ExxonMobil Corporation

District Court of Monroe County, Alabama, Aline Moye, et al. v ExxonMobil Corporation, et al., CV-98-20, Report, June 15, 2004.

CSX Transportation Inc.

US District Court, Northern District of Florida, Tallahassee Division, No. 4:03CV169-RH, CSX Transportation, Inc. v Department of Revenue of the State of Florida, et al., Report, May 14, 2004; Deposition, August 5, 2004.

TTX Company

Surface Transportation Board, Finance Docket No. 27590 (Sub-No.3), Application for Approval of Pooling Of Car Service with Respect to Flatcars, Statement, January 5, 2004; Rebuttal Statement, May 12, 2004.

British Columbia Lumber Trade Council and the Province of British Columbia
U.S. Dept. of Commerce, International Trade Administration, Certain Softwood Lumber Products from Canada (C-122-839), Reports, December 12, 2001, January 16, 2002, March 15, 2004 (with D. Reishus), March 16, 2004 (with D. Reishus), April 15, 2004 (with D. Reishus.), September 15, 2004 (With D. Reishus), February 28, 2005 (with D. Reishus), March 15, 2005, December 5, 2005 (with D. Reishus), December 5, 2005 (with D. Reishus).

CSX Transportation, Inc.
US District Court, Northern District of Georgia, No. 1:02-CV-2634CAP, CSX Transportation, Inc. v State Board of Equalization of the State of Georgia, et al., Report, April 15, 2004; Deposition, September 24, 2004; Oral Testimony, May 16, 2005.

El Paso Natural Gas Company and Burlington Resources Oil & Gas Company
District Court of Washita County State of Oklahoma, Nations Bank, N.A., et al. v El Paso Natural Gas Company and Burlington Resources Oil & Gas Company, No. CJ-97-68, Report, March 30, 2004; Deposition, April 27, 2004; Suppl. Report, August 16, 2005; Oral Testimony, November 2, 2005.

Chevron U.S.A. Inc.
District Court, 17th Judicial District, Parish of LaFourche, LA, Chevron U.S.A. Inc. v State of Louisiana, et al., Report, November 21, 2003; Suppl. Report, January 9, 2004; Oral Testimony, March 16, 2004.

Arizona Competitive Power Alliance
Arizona Corporation Commission, Application of Arizona Public Service Company for a Hearing to Determine the Fair Value of the Utility Property…, E-01345A-03-0437, Testimony, February 3, 2004.

Shell Oil Company
Court of Common Pleas, Cuyahoga County, Ohio, Donald J. Casserlie, et al. v *Shell Oil Company, et al.*, Report, January 30, 2004.

Shell Oil Company, *et al.*
District Court, County of Montezuma, State of Colorado, Celeste C. Grynberg, et al. v Shell Oil Company, et al., Affidavit, June 12, 2003; Report, June 20, 2003; Suppl. Report, August 15, 2003; Deposition, December 2, 2003; Affidavits, January 6, 2004; Affidavit, January 22, 2004; Oral Testimony, October 14, 2004.

Motiva Enterprises, LLC, *et al.*
Superior Court of Connecticut, Complex Litigation Docket at Waterbury, Wyatt Energy, Inc. v Motiva Enterprises, LLC, et al., Report, November 20, 2003; Deposition, December 18-19, 2003; Suppl. Report, August 20, 2008; oral testimony, June 15-16, 2009.

SDDS, Inc.

Circuit Court, Sixth Judicial District, SDDS, Inc. v State of South Dakota, Affidavit, December 23, 2002; Affidavit, January 17, 2003; Report, February 24, 2003; Report, April 25, 2003; Deposition, May 13, 2003; Oral Testimony, July 2, 2003, July 11, 2003; Oral Rebuttal Testimony, July 17, 2003; Affidavit, October 22, 2003.

Shell Western E & P Inc., Shell Gas Trading Company, and Shell Oil Company

US District Court, 112th Judicial District, Crockett County, TX, Minnie S. Hobbs Estate, et al. v Shell Western E & P Inc., et al., Report, August 28, 2002; Deposition, December 14, 2002; Suppl. Report, August 1, 2003; Affidavit, August 20, 2003; Oral Testimony, October 7, 2003.

The Burlington Northern & Santa Fe Railway Company

US District Court, Northern District of California, San Francisco Division, Truck-Rail Handling, Inc. and Quality Transport, Inc. v The Burlington Northern & Santa Fe Railway Company, Report, August 18, 2003; Suppl. Report, September 22, 2003; Deposition, September 25, 2003.

Dex Holdings, LLC

Washington Utilities and Transportation Commission, the Application of Qwest Corporation Regarding the Sale and Transfer of Qwest Dex to Dex Holdings, LLC. Rebuttal Testimony, April 17, 2003; Oral Testimony, May 23, 2003.

Amerada Hess Corporation

First Judicial District, State of New Mexico, County of Santa Fe, Patrick H. Lyons, Commissioner of Public Lands of the State of New Mexico, Trustee v Amerada Hess Corporation, Report, September 21, 2001; Deposition, November 7, 2001; Suppl. Report, January 31, 2002; Second Suppl. Report, April 7, 2003; Deposition, May 8, 2003.

Oxy USA, Inc.

Twenty-Sixth Judicial District, District Court, Stevens County, Kansas, Civil Department, Opal Littell, et al., v Oxy USA, Inc., Report, October 7, 2002; Rebuttal Report, October 29, 2002; Oral Testimony, April 7, 2003.

El Paso Merchant Energy, L.P.

Federal Energy Regulatory Commission, et al., v Sellers of Long-Term Contracts to the California Department of Water Resources, Sellers of Energy and Capacity Under Long-Term Contracts with the California Department of Water Resources, Testimony, October 17, 2002; Rebuttal Testimony, November 14, 2002; Deposition, November 24, 2002; Oral Testimony, December 10, 2002; Prepared Reply Testimony, March 20, 2003.

Joint Complainant Sellers of Jet Fuel

US Court of Federal Claims, Department of Defense Jet Fuel Contract Litigation, declarations in various individual cases, December 2002-2007.

El Paso Merchant Energy, L.P.
Federal Energy Regulatory Commission, PacifiCorp v Reliant Energy Services, Inc., et al., Testimony, October 8, 2002; Rebuttal Testimony, November 26, 2002; Deposition, December 5, 2002; Oral Testimony, December 18, 2002.

Powerex Corp.
American Arbitration Assoc., International Commercial Arbitration Between Powerex Corp. and Alcan Inc., Report, November 20, 2002; Oral Testimony, December 12, 2002.

Mardi Gras Transportation System Inc.
Federal Energy Regulatory Commission, Caesar Oil Pipeline Company, LLC, Affidavit, December 5, 2002; *Proteus Oil Pipeline Company, LLC*, Affidavit, December 5, 2002.

The Burlington Northern & Santa Fe Railway Company
US District Court, Western District of Texas, Austin Division, South Orient Railroad Company, Ltd. v The Burlington Northern & Santa Fe Railway Company and Union Pacific Railway Company, Report, October 30, 2002; Deposition, November 15, 2002.

Texaco Inc., *et al.*
District Court, 19th Judicial District, Parish of East Baton Rouge, LA, State of Louisiana and Secretary of the Department of Revenue and Taxation, et al. v Texaco Inc., et al., Report, November 11, 2002.

Ticketmaster Corporation
US District Court, Central District of California, Tickets.com, Inc. v Ticketmaster Corporation and Ticketmaster-Online Citysearch, Inc., Rebuttal Report, November 8, 2002; Deposition, November 20, 2002.

ExxonMobil Corporation
US Department of the Interior, Board of Land Appeals, Request for Value Determination Regarding the Arm's-Length Nature of a Gas Sales Contract, Affidavit, October 8, 2002.

El Paso Merchant Energy, L.P. and Calpine Energy Services, L.P.
Federal Energy Regulatory Commission, Nevada Power Company and Sierra Pacific Power Company v Duke Energy Trading and Marketing, L.L.C., et al.; Southern California Water Company v Mirant Americas Energy Marketing, L.P., et al., v Morgan Stanley Capital Group Inc., Testimony, June 28, 2002; Answering Testimony, August 27, 2002; Deposition, September 24, 2002.

Conoco Inc. and Phillips Petroleum Company
US District Court, Northern District of Oklahoma, Transeuro Amertrans Worldwide Moving and Relocations Limited v Conoco Inc. and Phillips Petroleum Company, Affidavit, August 21, 2002; Oral Testimony, September 17, 2002.

Amoco Production Company
District Court, La Plata County, Colorado, Richard Parry, et al. v Amoco Production Company, Report, May 1, 2002; Oral Testimony, August 29, 2002.

Conoco Inc., Amoco Production Company, and Amoco Energy Trading Corp.
US District Court, District of New Mexico, Elliott Industries Limited Partnership v Conoco Inc., et al., Report, July 1, 2002; Affidavit, July 6, 2002; Deposition, August 13, 2002.

CFM International, Inc.
US District Court, Central District of California, Western Division, Aviation Upgrade Technologies, Inc. v The Boeing Company, et al., Report, June 28, 2002.

Elkem Metals Company and CC Metals & Alloys, Inc.
US International Trade Commission, Ferrosilicon from Brazil, China, Kazakhstan, Russia, Ukraine, and Venezuela, Remand Proceedings, Affidavit, May 23, 2002; Oral Testimony, June 6, 2002.

Chevron U.S.A., Conoco, and Murphy Exploration & Production Company
US Court of Federal Claims, Chevron U.S.A., Inc.; Conoco Inc.; and Murphy Exploration & Production Company v United States of America, Report, May 1, 2002.

El Paso Merchant Energy, L.P.
Federal Energy Regulatory Commission, Public Utilities Commission of the State of California v El Paso Natural Gas Company, et al., Testimony, May 8, 2001; Oral Testimony, May 29-30, 2001; Oral Rebuttal Testimony, June 6-8, 2001; Oral Surrebuttal Testimony, June 19, 2001; Rebuttal Testimony, March 11, 2002; Oral Testimony, March 26-27, 2002.

American Quarter Horse Association
251st District Court, Potter County, Texas, Kay Floyd, et al. v American Quarter Horse Association, Affidavit, October 30, 2001; Report, February 1, 2002.

Amoco Production Company, *et al.*
First Judicial District, State of New Mexico, County of Santa Fe, Ray Powell, Commissioner of Public Lands of the State of New Mexico, Trustee v Amoco Production Company, Amerada Hess Corporation, Shell Western E&P, Inc., and Shell Land & Energy Co, Report, September 21, 2001; Deposition, November 7, 2001; Suppl. Report, January 31, 2002.

Shell Oil Company

Montana Sixteenth Judicial District Court, Fallon County, Fidelity Oil Company v Shell Western E & P, Inc., and Shell Oil Company, Report, September 7, 2001.

Anne E. Meyer and Mary E. Hauf, et al. v Shell Western E & P, Inc., and Shell Oil Company. Rebuttal Report, September 7, 2001.

Fran Fox Trust, et al. v *Shell Western E & P, Inc., and Shell Oil Company*. Rebuttal Report, September 7, 2001.

Marvel Lowrance and S-W Company v *Shell Western E & P, Inc., and Shell Oil Company*. Rebuttal Report, September 7, 2001.

Bass Enterprises Production Company

Bass Enterprises Production Company, et al. v United States of America, Assessment of Bass Enterprises Production Company's and Enron Oil and Gas Company's Economic Losses Arising from the Temporary Taking of Oil and Gas Lease, Report, March 19, 1999; Deposition, May 13, 1999; Oral Testimony, October 24-25, 2000; Suppl. Report, June 11, 2001; Deposition, June 30, 2001; Oral Testimony, July 23-24, 2001.

Tosco Corporation

US District Court, District of Hawaii, Carl L. Anzai, Attorney General, for the State of Hawaii, As Parens Patriae for the Natural Persons Residing in Hawaii, and on Behalf of the State of Hawaii, its Political Subdivisions and Governmental Agencies, v Chevron Corporation, et al., Report, October 23, 2000; Deposition, January 8-9, 2001; Suppl. Report, April 16, 2001; Deposition, April 24, 2001.

Shell Oil Company, *et al.*

US District Court, District of Colorado, United States Government and CO2 Claims Coalition, LLC, v Shell Oil Company and Shell Western E&P, Inc., Mobil Producing Texas and New Mexico, Inc., and Cortez Pipeline Company, Report, November 23, 1998; Deposition, January 11-12, 1999; Affidavit, January 21, 1999; Suppl. Report, April 30, 1999; Second Suppl. Report, March 30, 2001.

American Airlines

The United States Department of Justice v AMR Corporation, Report, October 11, 2000; Deposition, October 31-November 1, 2000; Suppl. Report, November 16, 2000; Revised Suppl. and Rebuttal Report, December 4, 2000; Deposition, December 14-15, 2000; Declaration, January 5, 2001; Declaration, March 14, 2001.

Teléfonos de Mexico

US District Court, Western District of Texas, San Antonio Division, Access Telecom, Inc. v MCI Telecommunications Corp., MCI International, Inc., SBC Communications, Inc., SBC International, Inc., SBC International Latin America, Inc., *and Teléfonos de Mexico*, Report, January 22, 2001; Suppl. Report, February 14, 2001; Deposition, February 22, 2001.

Exxon Corporation

Allapattah Services, Inc., et al. v Exxon Corporation, U.S. District Court, Southern District of Florida, Affidavit, November 25, 1996; Report, January 22, 1997; Deposition, September 22 and November 11, 1998; Report, April 15, 1999; Deposition, May 3-4, 1999; Affidavit, May 16, 1999; Affidavit, June 6, 1999; Deposition, July 12, 1999; Daubert Testimony, July 15-17, 1999; Oral Testimony, August 24-25, 1999; Oral Testimony, February 6, 7, 8, 12, 2001.

Burlington Northern Santa Fe

Surface Transportation Board, STB Ex Parte No. 582, Public Views on Major Rail Consolidations. Statement (with Amy Bertin Candell), February 29, 2000. *STB Ex Parte No. 582 (Sub-No. 1),* Statement (with José A. Gómez-Ibáñez), November 17, 2000; Rebuttal Statement (with José A. Gómez-Ibáñez), January 11, 2001.

Compaq Computer Corporation

US District Court, Eastern District of Texas, Beaumont Division, Charles Thurmond, Hal LaPray, Tracy D. Wilson, Jr., and Alisha Seale Owens v Compaq Computer Corporation. Opinion, December 15, 2000; Deposition, January 4, 2001.

Phillips Petroleum Company, *et al.*

District Court of Fort Bend, Texas, 268th Judicial District, Kathryn Aylor Bowden, et al. v Phillips Petroleum Company, et al., Deposition, August 1, 2000; Oral Testimony, September 8, 2000.

Exxon Corporation, Shell Oil Company, and Union Oil Company of California

US District Court, Eastern District of Texas, Lufkin Division, J. Benjamin Johnson, Jr., and John M. Martineck, Relators, on Behalf of the United States of America, v Shell Oil Company, et al., Reports, June 16, 2000; Deposition (Shell Oil Co.), August 8-11, 2000.

Union Oil Company of California and Shell Oil Company

Review of the Federal Royalties Owed on Crude Oil Produced from Federal Leases in California, Report, June 30, 1997; Suppl. Report, July 28, 2000.

Government of Canada

Arbitration Under Chapter Eleven of the North American Free Trade Agreement: Between Pope & Talbot, Inc., and The Government of Canada, Affidavit, March 27, 2000; Second Affidavit, April 17, 2000; Oral Testimony, May 2, 2000.

Exxon Company, U.S.A.

Hearing Officer of the Taxation and Revenue Department of the State of New Mexico, Protest to Assessment No. EX-001, Report, April 17, 2000.

Crow Indian Tribe

Rose v Adams, Crow Tribal Court, Montana. Report Concerning the Crow Tribe Resort Tax (with D. Reishus), November 27, 1996; Testimony, January 23, 1997; Surrebuttal Report (with D. Reishus), February 25, 1997; Report (with D. Reishus), March 31, 2000.

BP Amoco, PLC, and Atlantic Richfield Company

US District Court, Northern District of California, San Francisco Division, Federal Trade Commission v BP Amoco, PLC and Atlantic Richfield Company, Report, March 1, 2000; Deposition, March 7, 2000.

Williams Production Company *et al.*

First Judicial District, County of Santa Fe, State of New Mexico, San Juan 1990-A, L.P., K&W Gas Partners, et al. v Williams Production Company and John Doe, Affidavits, August 29, 1997, February 7, 2000.

Te Ohu Kai Moana (Treaty of Waitangi Fisheries Commission)

High Court of New Zealand, Auckland Registry, between Te Waka Hi Ika O Te Arawa and Anor, et al., Affidavit, February 4, 2000.

American Petroleum Institute

US Department of the Interior Minerals Management Service, Further Supplementary Proposed Rule for Establishing Oil Value for Royalty Due on Federal Leases, Declaration (with K. Grant), January 31, 2000.

Amoco Production Company and Amoco Energy Trading Corporation

First Judicial District Court, County of Santa Fe, State of New Mexico, The Florance Limited Company, et al. v Amoco Production Co., et al., Report, December 15, 1999; Deposition, January 11-12, 2000.

Reliant Technologies, Inc.

U.S. District Court, Northern District of California/Oakland Division, Reliant Technologies, Inc. v Laser Industries, Ltd., and Sharplan Lasers, Inc., Report, October 15, 1999; Deposition, December 2-3, 1999.

El Paso Natural Gas Company

District Court of Dallas County, Texas, Transamerican Natural Gas Corporation v El Paso Natural Gas Company, et al., Report, September 24, 1999; Deposition, September 28, 1999; Affidavit, November 19, 1999.

Rockwell International Corporation and Rockwell Collins, Inc.

US District Court, District of Arizona, Universal Avionics Systems Corporation v Rockwell International Corporation, et al., Report, September 15, 1998; Second Report, November 18, 1998; Supplement to Report, July 30, 1999; Supplement Amended Second Report, July 30, 1999; Deposition, September 22-23, 1999.

Exxon Corporation

Superior Court, State of California, Los Angeles, the People of the State of California, City of Long Beach, et al. v Exxon Corporation, et al. Deposition, May 11-12, 19, 1999; Oral Testimony, July 22-23, 26-29, 1999.

Texaco, Inc.

US District Court, Middle District of Louisiana, Long, et al. v Texaco, Inc., et al., Report (with K. Grant), August 14, 1998; Deposition, October 2-3, 1998 [6^{th} *Judicial District Court, Parish of Iberia, State of Louisiana, John M. Duhe, Jr., et al. v Texaco Inc., et al.,* Oral Testimony, March 2, 1999; *United District Court, Western District of Louisiana, Texaco Inc., et al. v Duhe, et al.,* Report (with K. Grant), June 30, 1999.

AIMCOR, American Alloys, Inc., *et al.*

US International Trade Commission, Ferrosilicon from Brazil, China, Kazakhstan, Russia, Ukraine, and Venezuela, Oral Testimony, April 13, 1999.

Elkem Metals Company, L.P.

In Re Industrial Silicon Antitrust Litigation and Related Cases, US District Court, Western District of Pennsylvania, Report, January 9, 1998; Deposition, February 5-6, 1998.

US District Court, Western District of Pennsylvania, Bethlehem Steel Corporation v Elkem Metals Company, L.P., and Elkem ASA, Report, December 9, 1998; Deposition, March 26-27, 1999.

El Paso Energy Corporation and El Paso Tennessee Pipeline Co.

EPEC Gas Latin America, Inc. and EPEC Baja California Corporation v Intratec S.A. de C.V., et al. v El Paso Energy Corp., et al., Report, March 26, 1999.

Government of Canada

Arbitration Panel Convened Pursuant to Article V of the Softwood Lumber Agreement Between The Government of Canada and The Government of the United States of America, Canada-United States Softwood Lumber Agreement: British Columbia's June 1, 1998 Stumpage Reduction, Report, March 12, 1999.

Rockwell International Corporation and Rockwell Collins, Inc.

US District Court, District of Arizona, Universal Avionics Systems Corporation v Rockwell International Corporation, et al., Report, September 15, 1998; Second Report, November 18, 1998; Supplement to Report, July 30, 1999; Supplement Amended Second Report, July 30, 1999; Deposition, September 22-23, 1999.

American Alloys, Inc., Globe Metallurgical, Inc. and Minerais U.S. Inc.

In re Industrial Silicon Antitrust Litigation: Civil No. 95-2104, US District Court, Western District of Pennsylvania. Oral Testimony, November 2, 1998.

Burlington Northern Santa Fe

Surface Transportation Board Union Pacific Corp., et al. -- Control and Merger -- Southern Pacific Rail Corp., et al., Statement, April 27, 1996; Deposition, May 14, 1996, Statement, July 8, 1998; Statement, October 16, 1998.

Group of Oil Company Defendants

US District Court, Southern District of Texas, Corpus Christi Division, Lease Oil Antitrust Litigation No. II, MDL No. 1206, Deposition, September 28, October 15, 1998; Affidavit, October 8, 1998.

American Alloys, Inc., *et al.*

US District Court, Western District of Pennsylvania, Industrial Silicon Antitrust Litigation, No. 95-2104, Testimony, September 14, 1998.

North West Shelf Gas Project

Arbitration Between Western Power Corporation and Woodside Petroleum Development Pty. Ltd. (ACN 006 325 631), et al. First Statement, May 6, 1998; Second Statement, May 15, 1998; Third Statement, July 22, 1998; Oral Testimony, July 22-28, 1998.

TransCanada Gas Services Limited

US District Court, District of Montana, Paladin Associates, Inc., et al. v Montana Power Company, et al., Report, November 19, 1997; Rebuttal Report, December 22, 1997; Deposition, January, 1998; Affidavit May 19, 1998.

Association of American Railroads

Review of Rail Access and Competition Issues, Surface Transportation Board, Statement (with D. Reishus), March 26, 1998; Oral Testimony, April 3, 1998.

Market Dominance Determinations—Product and Geographic Competition, Surface Transportation Board, Statement (with R. Willig), May 29, 1998; Reply Statement (with R. Willig), June 29, 1998.

Northern Natural Gas Company

Federal Energy Regulatory Commission, Northern Natural Gas Company, Testimony, May 1, 1998.

Koch Pipeline Company, L.P.

CF Industries, Inc. v Koch Pipeline Company, L.P., Surface Transportation Board. Statement (with A. Candell), November 10, 1997; Deposition, December 12, 1997; Reply Statement, January 9, 1998; Rebuttal Statement, February 23, 1998.

Exxon Corporation and Affiliated Companies

US Tax Court, Exxon Corporation and Affiliated Companies v Commissioner of Internal Revenue, Rebuttal Report, February 19, 1998.

Exxon Company

US Department of the Interior, Minerals Management Service, Review of the Federal Royalties Owed on Crude Oil Produced from Federal Leases in California, Affidavit, February 17, 1998.

CSX Corporation and CSX Transportation, Inc., Norfolk Southern Corporation, *et al.*

Surface Transportation Board, Testimony, June 12, 1997; Rebuttal Statement, December 15, 1997.

Group of Oil Company Defendants

US District Court, District of New Mexico, Doris Feerer, et al. v Amoco Production Company. et al., Report, May 5, 1997; Suppl. Report, July 14, 1997; Deposition, December 4-5, 1997.

Phillips Petroleum Company

US District Court, Canyon Oil & Gas Co. v Phillips Petroleum Company, Report (with K. Grant), September 30, 1997.

Pro Se Testimony

US Department of the Interior, Minerals Management Service, Establishing Oil Value for Royalty Due on Federal Leases…, Comments, May 27, 1997; Suppl. Comments (with K. Grant), August 4, 1997.

Pennsylvania Power & Light Company

Pennsylvania Public Utilities Commission, Testimony, April 1, 1997; Rebuttal Testimony, August 1997.

Exxon Corporation

Department of Revenue, State of Alaska, Exxon Corporation, Rebuttal Report, April 29, 1996; Deposition, May 21, 1996; Statement, August 26, 1996; Oral Testimony, March 10-11, 1997.

Honeywell, Inc.

Litton Systems, Inc. v Honeywell Inc., US District Court, Central District of California, No. CV-90-0093 MR., Preliminary Report, March 7, 1997.

Public Service Company of New Hampshire

New Hampshire Public Utilities Comm., Testimony on Antitrust issues, January 21, 1997.

Group of Oil Company Defendants

Fifth Judicial District Court, County of Chaves, State of New Mexico, Carl Engwall, et al. v Amerada Hess Corp., et al., Deposition, November 1-2, December 6, 1996; Oral Testimony, January 16-17, 1997.

District Court of Seminole County, State of Oklahoma, Laura Kershaw, et al. v Amoco Production Co., et al., Deposition, November 5, December 6, 1996.

Fond du Lac Band of Chippewa Indians

US District Court, District of Minnesota, Fourth Division, Fond du Lac Band of Chippewa Indians, et al. v Arne Carlson, et al., Report, December 4, 1996; Suppl. Report, December 20, 1996.

Northeast Utilities

New Hampshire Public Utilities Commission, Electric Industry Restructuring, Statement (with A. Jaffe), October 18, 1996.

Pro Se Testimony

Federal Energy Regulatory Commission, Alternatives to Traditional Cost-of-Service Ratemaking for Natural Gas Pipelines, Regulation of Negotiated Transportation Services of Natural Gas Pipelines, Statement (with A. Jaffe). May 30, 1996.

Burlington Northern Railroad Company

Surface Transportation Board Burlington Railroad Company -- Crossing Compensation -- Omaha Public Power District. Statement, April 1996.

Pennzoil Company

Lazy Oil Co., et al. v Witco Corporation, et al., Report, January 29, 1996; Deposition, March 1996.

Yavapai-Prescott Indian Tribe

Yavapai-Prescott Indian Tribe v Harold Scott (Director of Revenue, State of Arizona), et al. Declaration, June 27, 1995; Second Declaration, August 10, 1995.

Northeast Utilities

Massachusetts Department of Public Utilities, Electric Industry Restructuring, Testimony, April and June 1995.

State of Michigan

Court of Claims, State of Michigan, Carnagel Oil Associates, et al. v State of Michigan, The Department of Natural Resources, et al; Miller Brothers, et al. v State of Michigan, The Department of Natural Resources, et al., Deposition, May 30, 1995.

Burlington Northern Railroad Company

Interstate Commerce Commission, Burlington Northern Railroad Company -- Control and Merger -- The Atchison, Topeka and Santa Fe Railway Company, Statements, October 1994 and April/May 1995.

Northern Natural Gas Pipeline Co.

Federal Energy Regulatory Commission, Northern Natural Gas Pipeline Co. (rate filing), Testimony, March 1995.

Houston Lighting and Power Company
Public Utility Commission of Texas, Houston Lighting and Power Company, Testimony, September, December 1994 and February 1995.

Atlantic Richfield Corp., Exxon U.S.A., Inc., and British Petroleum, Inc.
Superior Court, State of Alaska, First Judicial District at Juneau, ANS Royalty Litigation. Report, June 6, 1994; Deposition, October 1994.

Esso Standard Oil Company (Puerto Rico)
US District Court, Puerto Rico, Esso Standard Oil Company (Puerto Rico), et al. v Department of Consumer Affairs, Commonwealth of Puerto Rico, Deposition, April, 1994; Testimony, July-August, 1994; Testimony, August 1989, April, May 1990.

Governments of British Columbia and Canada
US Department of Commerce, International Trade Administration, Certain Softwood Products from Canada, Report for the First Administrative Review, Statement, April 12, 1994.

Southwestern Public Service Company
Federal Energy Regulatory Commission, El Paso Electric Company and Central and South West Services, Inc, Affidavit, February 25, 1994.

Mojave Pipeline Company
Federal Energy Regulatory Commission, Mojave Pipeline Company, Economic Analysis of Public Policy with Respect to Mojave Pipeline Company's Proposed Expansion, Testimony, January 1994.

ARCO Pipe Line Company, Four Corners Pipe Line Co. and ARCO Transportation Alaska, Inc.
Federal Energy Regulatory Commission, Market-Based Ratemaking for Oil Pipelines, Comments in Response to Notice of Inquiry, Statement, January 1994.

Exxon
U.S. Bankruptcy Court, Claims Quantification Proceedings, In Re: Columbia Gas Transmission Corporation, Testimony, July 1993, October 1993.

El Paso Natural Gas Company
El Paso Natural Gas Company v Windward Energy & Marketing, et al., Report, August 1993, Affidavit, September 4, 1993.

SAGASCO Holdings Ltd.
Federal Court of Australia, Santos Ltd. Acquisition of SAGASCO Holdings Ltd., Testimony, August 1993.

PSI Resources, Inc.

Indiana Utility Regulatory Commission, the Proposed Merger between PSI Resources, Inc., PSI Energy, Inc., Cincinnati Gas & Electric Co., and CINergy Corp., Statement, June 1993.

Gulf Central Pipeline Company

Interstate Commerce Commission Farmland Industries, Inc. v Gulf Central Pipeline Company, et al., Statement, May 1993.

Federal Energy Regulatory Commission, Revisions to Oil Pipeline Regulations Pursuant to the Energy Policy Act of 1992, Comments on the Commission Staff's Proposal, Testimony, May 1993.

White Mountain Apache Tribe

US Fish and Wildlife Service, U.S. Department of the Interior, Proposed Endangered Species Act Designation of Critical Habitat for Salix Arizonica (Arizona Willow) on the Fort Apache Indian Reservation, Statement, April 1993.

General Chemical Corporation

US Department of the Interior, Bureau of Land Management, Proposed Increase in Royalty Rates on Soda Ash, Statements, February 1993.

Association of American Railroads

Interstate Commerce Commission, Ex Parte No. 346 (Sub-No. 28) Rail General Exemption Authority: Export Corn and Export Soybeans. Statement, December 1992.

Coalition of Petroleum Refiners

US Department of Energy, Office of Hearings and Appeals, The Citronelle Exception Relief, Statement, July 1992; Testimony, October 1992, November 1992, December 1992; Testimony, March and July, 1989.

Exxon

State of California, et al. v Standard Oil Co. of California, et al., Deposition, October 1992.

Burlington Northern Railroad Company

American Arbitration Association, Arbitration between Wisconsin Power & Light Company and Burlington Northern Railroad Company and Soo Line Railroad Company, Testimony, August, September 1992.

Atlantic Richfield Company

Don Van Vranken, et al. v Atlantic Richfield Company. Deposition, February 1992; Testimony, August 1992.

National Council on Compensation Insurance `
Commonwealth of Virginia, Corporation Commission, Revision of Workers' Compensation Insurance Rates, Testimony, April, July 1992.

Governments of British Columbia and Canada
International Trade Administration, U.S. Department of Commerce, Certain Softwood Lumber Products from Canada, Statement, February, March, April 1992; Testimony, April 1992, May 1992.

British Petroleum and Exxon Corporation
Superior Court, State of Alaska, First Judicial District at Juneau, ANS Royalty Litigation, State of Alaska, et al. v Amerada Hess, et al., Report, April 1991; Deposition, June, September 1991; Suppl. Report, April 1992.

Transcontinental Gas Pipe Line Corporation
United States of America Federal Energy Regulatory Commission, Testimony, March 1992.

Atlantic Richfield Company
Greater Rockford Energy and Technology, et al. v Shell Oil Company, et al., Deposition, December 1991.

Better Home Heat Council
Commonwealth of Massachusetts, Department of Public Utilities, Petition of Boston Gas Company for Preapproval of Suppl. Residential Demand-Side Management Programs, Testimony, June 15, 1991.

Burlington Northern Company
Interstate Commerce Commission, National Grain and Feed Association v Burlington Northern Railroad Co., et al., Testimony, May 14, 1991.

Arco Pipe Line Company
Federal Energy Regulatory Commission, ARCO Pipe Line Company, et al., Testimony, February 1, 1991.

Liberty Mutual Insurance Company
Minnesota Workers' Compensation Insurance Antitrust Litigation, Deposition, November 1990.

Misle Bus and Equipment Company
United States of America v Misle Bus and Equipment Company, Oral Testimony, September 1990.

Northeast Utilities Service Company
Federal Energy Regulatory Commission, Northeast Utilities Service Company (Re: Public Service Company of New Hampshire), Testimony, March, July 1990.

Amoco Production Company

The Kansas Power and Light Company, et al. v Amoco Production Company, et al., Deposition, March 1990 through June 1990.

Santa Fe Industries

Texas Utilities Company and Chaco Energy Company v Santa Fe Industries, Inc., et al. Deposition, November 1988, March, July 1989.

Arizona Public Service

Utah International v Arizona Public Service, et al., an arbitration proceeding, June 1989.

Atlantic Richfield Company

Department of Revenue, State of Alaska, Atlantic Richfield Company and Combined Subsidiaries, Oil and Gas Corporate Income Tax for 1978-1981, Testimony, December 1988.

El Paso Natural Gas

Doyle Hartman v Burlington Northern, Inc., El Paso Natural Gas Co., et al., Deposition, October 1988.

Honeywell Inc.

MidAmerican Long Distance Company v Honeywell, Inc., Deposition, August 1988.

Exxon

Federal Energy Regulatory Commission, Brokering of Interstate Natural Gas Pipeline Capacity, Testimony, July 1988.

Natural Gas Pipeline Company of America

Federal Energy Regulatory Commission, Natural Gas Pipeline Company of America, Testimony, November 1987.

Mojave Pipeline Company

Federal Energy Regulatory Commission, Mojave Pipeline Company, et al., Testimony, June, October 1987.

Exxon

Federal Energy Regulatory Commission, Columbia Gas Transmission Company, Testimony, April 1987.

Villa Banfi

L. Knife & Sons v Villa Banfi, Testimony, February, March 1987.

Cities Service Corp.
Office of Hearings and Appeals, U.S. Department of Energy, U.S. Department of Energy v Cities Service Corporation, Testimony, December 1986, February 1987.

Exxon
Federal Energy Regulatory Commission, Texas Eastern Transmission Corp, Testimony, August 1986.

Mobil Oil Corporation
Federal Energy Regulatory Commission, Northwest Central Pipeline Corp, Testimony, August 1986.

Bethlehem Steel Corporation
Federal Energy Regulatory Commission, ANR Pipeline Co., et al., Testimony, May 1986.

Natural Gas Supply Association
Federal Energy Regulatory Commission, Request for Suppl. Comments Re: FERC Order No. 436 and Related Proposed Rulemakings, Old Gas Decontrol, FERC's Block Billing for Pipelines, and the Winners and Losers in Natural Gas Policy, Statement, February 25, 1986.

Group of Oil Refiners
Office of Hearings and Appeals, MDL-378 Stripper Well Exemption Litigation, Testimony, July, September 1984.

Dorchester Gas Corp.
Office of Hearings and Appeals, U.S. Department of Energy v Dorchester Gas Corporation, Testimony, January 1984.

Appendix B – Materials Relied Upon

Legal Documents

Memorandum of Law in Support of Class Plaintiffs' Motion to Exclude Opinions Offered By Dr. Joseph Kalt, *In Re Electronic Books Antitrust Litigation*, Civil Action No. 11-md-02293 (DLC); *The State of Texas et al. v. Penguin Group (USA) Inc.; et al.*, No. 12-cv-03394 (DLC), December 18, 2013

First Amended Consolidated Class Action Complaint, *In Re Electronic Books Antitrust Litigation*, No. 11-md-02293 (DLC), October, 23, 2013

Plaintiffs' Memorandum of Law in Support of Class Plaintiffs' Motion for Class Certification and Appointment of Class Counsel, *In Re Electronic Books Antitrust Litigation*, No. 11-md-02293 (DLC)

Opinion & Order, *United States v. Apple*, No. 12-cv-2826 (DLC); *The State of Texas et al. v. Penguin Group (USA) Inc.; et al.*, Civil Action: No. 12-cv-03394 (DLC); (S.D.N.Y.), July 10, 2013

Testimony, Depositions and Expert Reports

Reply Declaration of Roger G. Noll, *In Re Electronic Books Antitrust Litigation*, Civil Action No. 11-md-02293 (DLC); *The State of Texas et al. v. Penguin Group (USA) Inc.; et al.*, No. 12-cv-03394 (DLC), December 18, 2013, including figures and workpapers

Declaration of Joseph P. Kalt, *In Re Electronic Books Antitrust Litigation*, No. 11-md-02293 (DLC), November 15, 2013, including figures and workpapers

Corrections to the Declaration of Joseph P. Kalt, *In Re Electronic Books Antitrust Litigation*, No. 11-md-02293 (DLC), December 3, 2013

Corrected Declaration of Roger G. Noll, *In Re Electronic Books Antitrust Litigation*, Civil Action No. 11-md-02293 (DLC); *The State of Texas et al. v. Penguin Group (USA) Inc.; et al.*, No. 12-cv-03394 (DLC), October 18, 2013, including figures and workpapers

Deposition of Roger G. Noll, *In Re Electronic Books Antitrust Litigation*, Civil Action No. 11-md-02293 (DLC); *The State of Texas et al. v. Penguin Group (USA) Inc.; et al.*, No. 12-cv-03394 (DLC), November 1, 2013

Direct Testimony of Richard J. Gilbert, Ph.D., in *United States v. Apple*, No. 12-cv-2826 (S.D.N.Y.), April 25, 2013

Expert Report of Richard J. Gilbert, in *United States v. Apple*, No. 12-cv-2826 (S.D.N.Y.), February 8, 2013

Discovery Documents

AMZN-MDL-0075013

AMZN-MDL-0143110

AMZN-MDL-0076414

AMZN-MDL-0044064

AMZN-MDL-0076568

AMZN-MDL-0076590

AMZN-MDL-0154056

AMZN-MDL-0154050

AMZN-MDL-0154051

AMZN-MDL-0077424

AMZN-MDL-0153987

Publicly Available Information

Bulow, Jeremy I., John D. Geanakoplos and Paul D. Klemperer, "Multimarket Oligopoly: Strategic Substitute and Complements," *Journal of Political Economy*, Vol. 93 (3)

Econometrics: Legal, Practical and Technical Issues, ABA Section of Antitrust Law (2005)

Friedman, Hershey, "Scatter Plots, Correlation, and Regression," Brooklyn College, CUNY, accessed at *Learning Ace*, (http://www.learningace.com/doc/1433559/6171c0810625b65779dab98b0ac9086b/correlationregressionweb)

Heckman, James J., Jeffery Smith and Nancy Clements, "Making The Most Out Of Programme Evaluations and Social Experiments: Accounting For Heterogeneity in Programme Impacts," *Review of Economics Studies*, Vol. 64

Ostle, Bernard, *Statistics in Research*, 2nd ed., Iowa State University Press, 1963

Pindyck, Robert and Daniel Rubinfeld, *Microeconomics*, 7th Edition, 2009

Wooldridge, Jeffrey M., *Introductory Econometrics: A Modern Approach*, Thomson South-Western, 2013

http://www.stephenking.com/promo/mile_81/

http://books.usatoday.com/bookbuzz/post/2011-08-25/stephen-king/416761/1

http://www.nobelprize.org/nobel_prizes/economic-sciences/laureates/2000/

http://paidcontent.org/2011/07/20/419-amazons-big-deals-puts-900-kindle-books-on-sale-including-big-6-titles/.

www.imbd.com

Data

2010_ebooks.txt
2011_ebooks.txt
2012_ebooks.txt
amazonold_weekly_mapped.sas7bdat
amznew_weekly_mapped.sas7bdat
APLEXP00001
APLEXP00003
apple_weekly_mapped.sas7bdat
bam_weekly_mapped.sas7bdat
bandn_weekly_mapped.sas7bdat
CLSPLF0000005 - CONFIDENTIAL.xlsx
Collapse_New_Data_by_Title_Price_for_Day.sas
damages-f coefs.txt
DRBD_Transactional_Records.tsv
ebook_asin_map.sas7bdat
eBook_Data_Build.sas
ebook_eisbn_map.sas7bdat
ebook_orders_2009.txt
ebook_orders_2010.txt
ebook_orders_2011.txt
ebook_orders_2012.txt
ebook_sales_2009.txt
ebook_sales_2010.txt
ebook_sales_2011.txt
ebook_sales_2012.txt

Ebook+Sales+Data+(Present+-+2011)
eBookData.txt
eBookPrices.txt
Ebooks+Data+(2008+-+2007)
Ebooks+Data+(2009+-+2008)
Ebooks+Data+(2010+-+2009)
Ebooks+Data+(2011-2010)
Figure_17_apple_titles.sas
fiscal_week.xls
GOGEBKS-000580 - GOGEBKS-000600.csv
GOGEBKS-001119.csv
google_weekly_mapped.sas7bdat
ibook_extract_20100403_20100430.txt
ibook_extract_20100501_20100531.txt
ibook_extract_20100601_20100630.txt
ibook_extract_20100701_20100731.txt
ibook_extract_20100801_20100831.txt
ibook_extract_20100901_20100930.txt
ibook_extract_20101001_20101031.txt
ibook_extract_20101101_20101130.txt
ibook_extract_20101201_20101215.txt
ibook_extract_20101216_20121231.txt
ibook_extract_20110101_20110131.txt
ibook_extract_20110201_20110228.txt
ibook_extract_20110301_20110331.txt
ibook_extract_20110401_20110430.txt
ibook_extract_20110501_20110531.txt
ibook_extract_20110601_20110630.txt
ibook_extract_20110701_20110731.txt
ibook_extract_20110801_20110831.txt
ibook_extract_20110901_20110930.txt
ibook_extract_20111001_20111031.txt
ibook_extract_20111101_20111130.txt
ibook_extract_20111201_20111231.txt
ibook_extract_20120101_20120131.txt
ibook_extract_20120201_20120229.txt
ibook_extract_20120301_20120331.txt
ibook_extract_20120401_20120411.txt
Import_&_Compilation_of_Google_Sales_Data.sas

Import_and_Aggregate.sas
Import_Apple_Data.sas
Import_Kindle_Catalog.sas
Import_Kindle_Catalog.sas
Import_New_Amazon_Print_Transaction_Data.sas
Import_Old_Amazon_Print_Transaction_Data.sas
Import_Old_Apple_Data.sas
kindle_book_catalog_v2.txt
Kobo_Inc_US_historical_sales_details_(comma_delimited).csv
kobo_weekly_mapped.sas7bdat
P2008.txt
P2009.txt
P2010.txt
P2011.txt
Pbook+Sales+Data+(2007)
Pbook+Sales+Data+(2008)
Pbook+Sales+Data+(2009)
Pbook+Sales+Data+(2010)
Pbook+Sales+Data+(2011)
Pbook+Sales+Data+(2012)
product_ebooks.txt
Read_in_Kobo_Production.sas
SEL00000011_CONFIDENTIAL.csv - SEL00000025_CONFIDENTIAL.csv
Sony_New_Transaction_Data_Import.sas
Sony_Old_Transaction_Data_Import.sas
sony_weekly_mapped.sas7bdat
zip_code_database.csv