



Plaintiffs' expert, Prof. Douglas Bernheim, used vitamin C market prices from before and after the class period (December 1, 2001 through June 30, 2006) to develop a model forecasting the price for vitamin C that would have obtained in the United States if not for defendants' alleged anticompetitive behavior. The difference between the actual price and the "but-for" price calculated by Prof. Bernheim constitutes the amount plaintiffs claim they were overcharged as a result of the alleged fix-pricing conspiracy. Prof. Bernheim also adjusted the "but-for" price in order to account for the effects of the SARS epidemic, which occurred during the class period. Prof. Bernheim initially estimated the plaintiff class' damages to be \$58.4 million, but then revised this figure to \$54.1 million.

Defendants retained Dr. Wu to challenge Prof. Bernheim's damages model. Specifically, Dr. Wu was tasked with reviewing Prof. Bernheim's analysis and methodology for errors. He was instructed to "assume the plaintiffs' claims of a conspiracy" and to develop a model by making appropriate corrections to Prof. Bernheim's analysis in order "to calculate damages that might be claimed on behalf of class members for the conspiracy which plaintiffs allege." Based on his model, Dr. Wu concluded that Prof. Bernheim "greatly overstate[d] the amount of damages which plaintiffs may claim" and found that "damages that might be claimed on behalf of class members for the conspiracy which plaintiffs allege are no more than \$1.3 million."

Prof. Bernheim later submitted a rebuttal report critical of Dr. Wu's analysis. Specifically, Prof. Bernheim argued that Dr. Wu's model produced results that fail "plausibility checks" or "sanity checks" and that, therefore, his analysis is unreliable. Plaintiffs, relying on Prof. Bernheim's rebuttal report, bring this motion and characterize Dr. Wu's analysis as "junk science" that the Court should not allow to be presented to the jury. Plaintiffs' motion consists of a laundry list of ways in which, they contend, Dr. Wu's analysis fails to meet the "plausibility

checks” identified by Prof. Bernheim and several other critiques of the methodology employed by Dr. Wu. In response, defendants argue that plaintiffs merely dislike Dr. Wu’s conclusions. They defend the reliability of Dr. Wu’s methodology and provide explanations for its supposed failures to satisfy “plausibility checks.”

### DISCUSSION

The admission of expert evidence is governed by Rule 702 of the Federal Rules of Evidence, which provides that:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if (a) the expert’s scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (d) the expert has reliably applied the principles and methods to the facts of the case.

The proponent of expert testimony bears the burden of “establishing by a preponderance of the evidence that the admissibility requirements of Rule 702 are satisfied.” See Humphrey v. Diamant Boart, Inc., 556 F. Supp. 2d 167, 174 (E.D.N.Y. 2008) (internal quotation marks omitted). Nevertheless, under Daubert “the district court functions as the gatekeeper for expert testimony.” Raskin v. Wyatt Co., 125 F.3d 55, 66 (2d Cir. 1997). See also Kumho Tire Co. v. Carmichael, 526 U.S. 137, 141, 119 S. Ct. 1167, 1171 (1999) (“We conclude that Daubert’s general holding – setting forth the trial judge’s general ‘gatekeeping’ obligation – applies not only to testimony based on ‘scientific’ knowledge, but also to testimony based on ‘technical’ and ‘other specialized’ knowledge.”).

When deciding whether a proposed expert witness may testify, the Court must first determine whether the proposed witness is qualified as an expert. Baker v. Urban Outfitters, Inc., 254 F. Supp. 2d 346, 352 (S.D.N.Y. 2003). If the proposed expert witness meets the

threshold qualification requirement, the court must then “ensur[e] that [his] testimony both rests on a reliable foundation and is relevant to the task at hand.” Daubert, 509 U.S. at 597, 113 S. Ct. at 2799.

“[I]n analyzing the admissibility of expert evidence, the district court has broad discretion in determining what method is appropriate for evaluating reliability under the circumstances of each case.” Amorgianos v. Nat’l R.R. Passenger Corp., 303 F.3d 256, 265 (2d Cir. 2002). However, “[i]n assessing the reliability of a proffered expert’s testimony, the court’s inquiry under Daubert focuses not on the substance of the expert’s conclusions, but on the principles and methodology used to generate the conclusions.” Clarke v. LR Sys., 219 F. Supp. 2d 323, 332 (E.D.N.Y. 2002). Generally courts consider the indicia of reliability enumerated in Rule 702, as well as “additional factors bearing on reliability” set forth in Daubert. United States v. Williams, 506 F.3d 151, 160 (2d Cir. 2007). The Daubert reliability factors include:

(1) whether a theory or technique has been or can be tested; (2) “whether the theory or technique has been subjected to peer review and publication;” (3) the technique’s “known or potential rate of error” and “the existence and maintenance of standards controlling the technique’s operation;” and (4) whether a particular technique or theory has gained general acceptance in the relevant scientific community.

Id. (quoting Daubert, 509 U.S. at 593-94, 113 S. Ct. at 2796-97). The Daubert reliability inquiry is, however, “a flexible one” and “Daubert makes clear that the factors it mentions do *not* constitute a definitive checklist or test.” Kumho Tire, 526 U.S. at 150, 119 S. Ct. at 1175 (emphasis in original, internal quotation marks omitted). Indeed, “the law grants a district court the same broad latitude when it decides *how* to determine reliability as it enjoys in respect to its ultimate reliability determination.” Id. at 142, 119 S. Ct. at 1171.

Although the Daubert inquiry is flexible, it is also rigorous. See Amorgianos, 303 F.3d at 267 (“To warrant admissibility . . . it is critical that an expert’s analysis be reliable at every

step.”). Under Daubert, an expert must “employ[] in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field.” Kumho Tire, 526 U.S. at 152, 119 S. Ct. at 1176. Still, “the rejection of expert testimony is the exception rather than the rule” and “the Second Circuit’s standard for admissibility of expert testimony is especially broad.” Clarke, 219 F. Supp. 2d at 332. Indeed, “[a]lthough expert testimony should be excluded if it is speculative or conjectural, or if it is based on assumptions that are so unrealistic and contradictory as to suggest bad faith or to be in essence an apples and oranges comparison, other contentions that the assumptions are unfounded go to the weight, not the admissibility, of the testimony.” Grand River Enters. Six Nations, Ltd. v. King, 783 F. Supp. 2d 516, 526 (S.D.N.Y. 2011) (quoting Boucher v. U.S. Suzuki Motor Corp., 73 F.3d 18, 21 (2d Cir. 1996)).

Plaintiffs have not challenged the relevance of Dr. Wu’s testimony. Since Dr. Wu’s testimony relates to the proper calculation of the damages that plaintiffs are seeking, its relevance is patent. Nor have plaintiffs argued that Dr. Wu lacks sufficient qualifications to satisfy the first prong of Daubert’s two-part test. Even if they had, the Court would conclude that Dr. Wu is a well-qualified expert based on his credentials and experience. Instead, plaintiffs’ motion focuses entirely on the reliability of Dr. Wu’s analysis and raises two principal challenges. First, plaintiffs argue that Dr. Wu’s model is not reliable because it generates conclusions that fail “plausibility checks.” Second, plaintiffs challenge the reliability of the methodology that Dr. Wu employed based on several specific critiques.

### **I. Plausibility Checks**

Plaintiffs’ first argument is that Dr. Wu’s analysis fails “plausibility checks” with regard to its conclusions concerning (1) the effects of defendants’ alleged cartel on vitamin C prices, (2) the effects of Chinese government regulation on vitamin C prices, and (2) the effects of the

SARS and avian flu epidemics on vitamin C prices.

According to Dr. Wu's model, there is a period of time in 2001 and 2002 when the estimated "but-for" market price of vitamin C exceeded its actual price. Based on this fact, plaintiffs argue that, "contrary to basic economic logic, Dr. Wu's analysis predicts that the cartel's collusive behavior had the effect of systemically *reducing* prices below competitive levels." Plaintiffs claim that these results are implausible and, indeed, their argument has intuitive appeal. Defendants highlight possible reasons why Dr. Wu's model produces these results. Specifically, Dr. Wu cites to economic literature which suggests that even successful cartels see periods of price increases and intermittent price wars which can drive prices to below cost. Defendants contend that between May 2000 and December 2001, Chinese vitamin C manufacturers engaged in such a price war. In response, plaintiffs argue that Dr. Wu's model shows a prolonged period where the forecasted price exceeded the actual price, which is not consistent with "episodic" price wars.

Similarly, plaintiffs point out that Dr. Wu's model also predicts that the "but-for" market price of vitamin C exceeded its actual price during an earlier pre-cartel period from 1998 to 2001 when the Chinese government sought to raise vitamin C prices by pressuring manufacturers to set price floors and use export quotas. In other words, Dr. Wu's analysis suggests that the actions of the Chinese government, contrary to their intent, actually lowered vitamin C prices. Defendants and Dr. Wu note, however, that during the pre-cartel period, the Chinese government's attempts to regulate vitamin C prices were not always successful and, in fact, in late 2001, the price of Chinese vitamin C was so low that Chinese manufacturers were exposed to dumping claims by European entities. Since Dr. Wu sought to forecast the competitive

vitamin C price, defendants contend, it makes sense that the forecasted price exceeded the actual price when the actual price reflected possible dumping.

Finally, plaintiffs and Prof. Bernheim argue that Dr. Wu attributed almost all of the price increase during the cartel period to the increase in demand for vitamin C in China as a result of SARS and avian flu. According to plaintiffs, this result is implausible because China only accounts for 10% of the world's vitamin C consumption, making it unlikely that a spike in Chinese demand would produce such a large effect on world demand. Defendants and Dr. Wu respond that the result is plausible since (1) SARS and avian flu increased vitamin C demand both in China and in the rest of the world, (2) supply was limited during much of the relevant period, (3) demand for vitamin C is inelastic to price changes in the short-run.

The Court recognizes that Dr. Wu's results raise legitimate questions about the soundness of his analysis and conclusions. Plaintiffs cite an unpublished Second Circuit decision affirming the district court's exclusion of expert testimony that asserted "wildly implausible valuations." See Lippe v. Bairnco Corp., 99 F. App'x 274, 279 (2d Cir. 2004) (summary order). But the Lippe court was more concerned with the experts' failure to articulate reasons for why they conducted their analysis as they did than it was with their conclusions. Id. at 278-79 ("the district court was clear that its primary concern over control premiums was not *that* they were applied but rather *how* they were applied, including [the experts'] failure to explain the reasons for the percentages used."). Unlike the experts in Lippe, Dr. Wu has offered explanations for his analysis. Although the Court does not opine on the ultimate persuasiveness of Dr. Wu's analysis, the explanations that he offers appear reasonable and supported by both economic theory and historical facts.

The Court must balance its gatekeeping role under Daubert with the Second Circuit's admonition that "[t]rial courts should not arrogate the jury's role in 'evaluating the evidence and the credibility of expert witnesses' by 'simply cho[osing] sides in [the] battle of the experts.'" In re Joint S. & E. Dist. Asbestos Litig., 52 F.3d 1124, 1135 (2d Cir. 1995) (quoting Christophersen v. Allied-Signal Corp., 902 F.2d 362, 366 (5th Cir. 1990)). Other courts, in balancing these considerations, consider whether an expert's approaches and methods are reasonable.

For example, in Deutsch v. Novartis Pharms. Corp., 768 F. Supp. 2d 420 (E.D.N.Y. 2011), defendant criticized plaintiffs' expert's methodology for, among other things, failing to control for certain confounding factors. The court reasoned that, because "[b]ased on his review of the literature and the case reports, [the expert] concluded that it was not necessary to control for these factors," the expert "satisfied his burden under Daubert by . . . providing a reasonable explanation for dismissing specific alternate factors identified by" defendant. Id. at 456. Further, "[defendant's] contention that [the expert] should have controlled for these factors goes to the weight that ought to be afforded [his] findings, not the reliability of his methodology." Id. Cf. Israel v. Spring Indus., Inc., No. 98 CV 5106, 2006 WL 3196956, at \*5 (E.D.N.Y. Nov. 3, 2006) ("the expert's testimony must at least address obvious alternative causes and provide a reasonable explanation for dismissing specific alternative factors identified by the defendant").

Additionally, courts have observed, in the Daubert context, that:

Experts in disciplines that require the use of professional judgment are less likely candidates for exclusion because challenges may be ultimately viewed as matters in which reasonable experts may differ in exercising their judgments as to the appropriate variable to plug into a calculation. . . . Such matters may be and should be explored and highlighted through cross-examination of the expert and presentation of contrary evidence, not at the preliminary admissibility stage. In non-scientific disciplines . . . where the use of professional judgment may produce a broad range of acceptable opinions, so long as the expert possesses at least one



of the qualifying attributes listed in Rule 702 (specialized knowledge, skill, education, experience or training), has employed a methodology recognized in the profession or by the courts, and can identify the source of the facts and data underlying the opinion (demonstrating a connection of the opinion to the facts of the case), a probing cross-examination and presentation of opposing experts and evidence will permit the fact-finder to judge the soundness of the expert's judgment, as well as the expert's credibility and potential bias, in order to assess how much weight to accord the expert's opinion.

In re Commercial Fin. Servs., Inc., 350 B.R. 520, 528-29 (Bankr. N.D. Okla. 2005).

Plaintiffs have asserted that Dr. Wu's analysis is unreliable but they have not shown why, in light of the explanations offered by Dr. Wu, the disagreements between Prof. Bernheim and Dr. Wu are anything more than reasonable disagreements between experts. See Seeley v. Hamilton Beach/ Proctor-Silex, Inc., 349 F. Supp. 2d 381, 386 (N.D.N.Y. 2004) (denying a motion to exclude an expert's testimony where the expert's "opinions are supported by rational explanations which reasonable men might accept, and none of his methods strike the court as novel or extreme") (internal quotation marks omitted). Consequently, plaintiffs have also failed to convince the Court that any flaws in Dr. Wu's analysis cannot be adequately explored through cross-examination. See, e.g., On Site Energy Co. v. MTU Onsite Energy Corp., No. 10-CV-1671, 2012 WL 2952424, at \* 2 (E.D.N.Y. July 19, 2012) ("Any flaws in [the expert's] methods may be challenged during cross-examination.").

Plaintiffs' conclusory assertion that "the broad community of professional economists would not take [Dr. Wu's analysis] seriously" is simply not a sufficient basis, in light of Dr. Wu's explanations, to keep his testimony from the jury. Through Dr. Wu's expert report and the declaration he submitted in opposition to the instant motion, defendants have demonstrated that Dr. Wu employed generally accepted economic methods and principles, such as regression analysis, and that, notwithstanding plaintiffs' claims of implausibility, Dr. Wu applied these methods to the facts of this case in a reasonably reliable way.

## II. Methodological Challenges

Plaintiffs and Prof. Bernheim also assert a number of diverse challenges to the methodology that underlies Dr. Wu's analysis, which the Court addresses in turn. Several of these challenges result from Prof. Bernheim's analysis of the implications of Dr. Wu's model. In other words, Prof. Bernheim extends Dr. Wu's model in ways that Dr. Wu did not and argues that those extensions demonstrate that the model is unreliable.

The first challenge relates to the effect that the SARS and avian flu outbreaks had on prices for vitamin C. The parties agree that the first reported case of SARS occurred in November 2002 and that, by February 2003, there was widespread concern about the disease in China. Plaintiffs and Prof. Bernheim criticize Dr. Wu's methodology because, they argue, his analysis indicates that there was an increase in vitamin C demand in the months before the outbreaks occurred. In response, defendants and Dr. Wu point out that plaintiffs' argument is only that Dr. Wu's analysis implies that there would have been a SARS-related price increase prior to the outbreak of the disease. Plaintiffs have not argued that Dr. Wu actually attributed the price increase during this period to the disease and he did not, in fact, do so. Although defendants are correct, the fact that the Dr. Wu's model suggests such an outcome is nonetheless troubling.

Still, Dr. Wu is able to account for this implication. He states that the implication is a result of plaintiffs "(a) using [his] overcharge model to calculate a SARS adjustment and (b) assuming that his SARS adjustment should be added to [his] baseline forecasting model to calculate but-for prices prior to November 2002." Further, he claims that plaintiffs' addition of a SARS effect to his baseline forecasting model for this period prior to the outbreak is "an unrealistic assumption." It is significant that Dr. Wu explicitly designed his model to account for

flaws he perceived in Prof. Bernheim's model. In fact, Dr. Wu details a number of ways in which his model differs from Prof. Bernheim's model, including the different ways that they estimate the effect of SARS on vitamin C prices. The implication identified by plaintiffs appears less troubling in light of Dr. Wu's explanation that it is the result of applying his model in a way in which it was never meant to be applied.

It may be that one expert's model better approximates the SARS effect than does the other expert's model. The fact that Dr. Wu's model implies an effect prior to the outbreak of the disease is certainly relevant to this determination. But at present, there is a dispute between the parties' experts as to the proper way to structure and apply these models. In light of this dispute and the apparent plausibility of Dr. Wu's positions, the Court does not find plaintiffs' argument sufficient to exclude Dr. Wu's testimony.

Plaintiffs' second challenge is similar. Plaintiffs and Prof. Bernheim argue that Dr. Wu's analysis involved creating a baseline price model and then adding a SARS adjustment. But since, they contend, Dr. Wu's model is developed using data from the post-cartel period, when SARS and avian flu inflated vitamin C prices, Dr. Wu's analysis, in effect, "double counts" the inflationary effect of these outbreaks. When Dr. Wu's model is extended over the post-cartel period, it predicts prices that are, on average, 34% higher than the actual prices that obtained during that period. On the other hand, defendants and Dr. Wu point out that plaintiffs' critique of Dr. Wu's model is based on extrapolating his cartel period projection into the post-cartel period, which is different from the actual projection that Dr. Wu made for the post-cartel period. Indeed, Dr. Wu did not find that there was a continued SARS effect in the post-cartel period.<sup>2</sup> It may be that plaintiffs' extrapolation of Dr. Wu's model into the post-cartel period demonstrates

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<sup>2</sup> For that reason, plaintiffs' argument that a spike in Dr. Wu's SARS awareness variable in the post-cartel period did not cause a corresponding spike in vitamin C prices does not call into question Dr. Wu's attribution of price increases during the cartel period to SARS awareness spikes.

that the model is unpersuasive. Or it may be that Dr. Wu is correct in treating the two periods differently. At this point, plaintiffs have only established that Dr. Wu's model has a limitation, not that it is unreliable.<sup>3</sup>

Similarly, plaintiffs and Prof. Bernheim argue that Dr. Wu's analysis "predicts" that there would have been large changes in vitamin C prices absent a cartel, including an increase of 42% in late 2001 and a drop of 16% in mid-2005. Plaintiffs claim that these sudden price changes are anomalous in the context of other vitamin C price changes and that Dr. Wu uses them to lower his damages estimate. Dr. Wu argues, however, that this criticism is based on a misapplication of his analysis. Specifically, Dr. Wu claims that plaintiffs generate the large price spike by, contrary to Dr. Wu's approach, adding a SARS effect to his baseline price prior to the outbreak of SARS and failing to recognize the significance of the low, possibly dumped, price level that prevailed at the end of the pre-cartel period. Further, Dr. Wu argues that plaintiffs' criticism of the sharp price decline in 2005 fails to account for the unraveling of the cartel and the diminishing effect of SARS.

Separately, plaintiffs challenge the soundness of Dr. Wu's methodology in developing his baseline price model. Specifically, they and Dr. Bernheim argue that Dr. Wu's exclusion of data from the pre-cartel period in calculating baseline price contravenes economic principles and renders his analysis unreliable. For example, Prof. Bernheim argues that Dr. Wu should have used both post and pre-cartel dates to "anchor" his "backcasting" model in order to improve the

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<sup>3</sup> For the same reasons, plaintiffs' and Prof. Bernheim's attempt to demonstrate that Dr. Wu's analysis is unreliable because it implies that defendants sold vitamin C below cost is unavailing. Prof. Bernheim subtracted Dr. Wu's SARS effect from the actual price of vitamin C in the post-cartel period, yielding a price that basically tracked one defendant's variable costs. If that defendant had sold at this price, it would have lost money on vitamin C over a 23-month period. But Dr. Wu has a simple explanation, namely that Prof. Bernheim's exercise is based on the unwarranted assumptions that (1) there was a sustained SARS effect in the post-cartel period and (2) the effect was of a magnitude equal to the magnitude that prevailed during the cartel period. Dr. Wu did not make these assumptions in conducting his post-cartel period analysis. Again, plaintiffs have failed to demonstrate that this limitation of Dr. Wu's model means that it is unreliable.

model's reliability. While plaintiffs' criticism may have merit, Dr. Wu explains that he omitted data from the pre-cartel period because that period was characterized by Chinese government regulation of vitamin C pricing, as well as price wars and allegations of dumping, and that, in light of these factors, it would have been inappropriate to use data from the pre-cartel period to estimate the vitamin C prices that would have obtained absent cartel conduct in an unregulated market.

Plaintiffs and Prof. Bernheim also engage in an extremely technical critique of the lag structure of Dr. Wu's model, claiming that his lag structure forces "the effects of all four predictors to end abruptly after three months" and that Dr. Wu improperly removed the lagged values of the dependent variable, vitamin C price. Dr. Wu argues that he included more lagged variables than Prof. Bernheim did in order "to capture the dynamics of the price adjustment process more fully" and that his adjustment is consistent with the relevant econometrics literature.

Additionally, plaintiffs and Prof. Bernheim argue that it was inappropriate for Dr. Wu to estimate public awareness of the SARS and avian flu outbreaks by using Chinese-language articles referring to the diseases because it is the outbreaks' impact on global demand and prices that is relevant. Plaintiffs claim that English-language articles are a better proxy for the diseases' impact because English-speaking countries consumed far more vitamin C than Chinese-speaking countries. Further, plaintiffs criticize Dr. Wu for failing to require that the articles he consulted on the SARS and avian flu outbreaks contain a reference to vitamin C. Dr. Wu responds that he focused on Chinese-language articles because the vast majority of SARS cases occurred in China and Hong Kong and the rise in Chinese demand would affect the world price. Moreover, Dr. Wu did not limit the articles he considered to those discussing both SARS and vitamin C because he

was concerned with measuring public awareness of the disease, not merely the relationship between the disease and vitamin C demand, which had been separately established for the cartel period.

Finally, plaintiffs and Prof. Bernheim argue that Dr. Wu's use of logarithms in modeling the SARS effect is mathematically inappropriate and causes his analysis to overstate the effect and duration of SARS awareness on vitamin C pricing. In response, Dr. Wu defends his use of logarithms, arguing that logarithms better reflect the "incremental effect" of media coverage of SARS on the vitamin C price while non-logarithmic modeling improperly suggests that media coverage of SARS did not have a statistically significant effect on pricing. Dr. Wu also notes that his use of transformations renders his analysis mathematically sound and he points to the fact that Prof. Bernheim also measured certain independent variables on a logarithmic scale.

As these challenges demonstrate, plaintiffs' motion asks the Court to take sides in a dispute between experts about the intricacies of econometric modeling. That is not the proper function of a Daubert motion. This is not a case in which an expert is unable to articulate a rationale for his methodology; nor is it a case where the proffered rationale is patently flawed or unreasonable. Dr. Wu has consistently provided explanations for his methodological decisions that appear reasonable and grounded in econometrics literature – not "junk science" – and, thus, defendants have met their burden of demonstrating that Dr. Wu's analysis is sufficiently reliable to be admitted.

It is for the jury to determine whether the methodological decisions that Dr. Wu made render his analysis either more or less persuasive than Prof. Bernheim's model. Plaintiffs' challenges have not demonstrated that Dr. Wu's methodological choices are unsound or flawed so as to make his analysis fundamentally unreliable. See Clarke, 219 F. Supp. 2d at 333

("Disputes about . . . faults in the expert's decisions to use a particular methodology, or the lack of textual authority for an expert's opinion go to the weight, not the admissibility, of his testimony.") (internal quotation marks omitted). See also Daubert, 509 U.S. at 596, 112 S. Ct. at 2798 ("Vigorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof are the traditional and appropriate means of attacking shaky but admissible evidence.").

**CONCLUSION**

Plaintiffs' motion to exclude the testimony of Dr. Wu [530] is ~~denied~~.

**SO ORDERED.**

s/ BMC

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U.S.D.J.

Dated: Brooklyn, New York  
December 20, 2012