

<p>1 IN THE UNITED STATES DISTRICT COURT</p> <p>2 FOR THE DISTRICT OF MARYLAND</p> <p>3 _____</p> <p>4 )</p> <p>5 P.T. KARANG MAS SEJAHTERA, ) CIVIL ACTION NO.</p> <p>6 Plaintiff, ) 8:05-cv-00787-PJM</p> <p>7 vs. )</p> <p>8 MARRIOTT INTERNATIONAL, )</p> <p>9 INC. and THE RITZ-CARLTON )</p> <p>10 COMPANY, LLC, )</p> <p>11 Defendants. )</p> <p>12 _____)</p> <p>13</p> <p>14 VIDEOTAPED DEPOSITION OF</p> <p>15 JEFFREY ALAN DUBIN, Ph.D.</p> <p>16 Washington, D.C.</p> <p>17 Tuesday, October 23, 2007</p> <p>18 8:58 a.m.</p> <p>19</p> <p>20 Job No.: 1-114872</p> <p>21 Pages 1 through 158</p> <p>22 Reported by: John L. Harmonson, RPR</p>	<p>1 APPEARANCES</p> <p>2 ON BEHALF OF PLAINTIFF:</p> <p>3 KENNETH N. HICKOX, JR., ESQUIRE</p> <p>4 Bickel &amp; Brewer</p> <p>5 4800 Bank One Center</p> <p>6 1717 Main Street</p> <p>7 Dallas, Texas 75201</p> <p>8 (214)653-4000</p> <p>9 ON BEHALF OF DEFENDANT:</p> <p>10 MALACHI B. JONES, ESQUIRE</p> <p>11 Williams &amp; Connolly, LLP</p> <p>12 725 Twelfth Stret, Northwest</p> <p>13 Washington, D.C. 20005</p> <p>14 (202)434-5000</p> <p>15 BERNARD A. JOSEPH, ESQUIRE</p> <p>16 Marriott International, Inc.</p> <p>17 One Marriott Drive</p> <p>18 Department 52/923</p> <p>19 Washington, D.C. 20058</p> <p>20 (301)380-1114</p> <p>21</p> <p>22 ALSO PRESENT: BRIAN MACKEY, Videographer</p>
<p>1 Videotaped Deposition of</p> <p>2 JEFFREY ALAN DUBIN, Ph.D.</p> <p>3</p> <p>4</p> <p>5 Held at the offices of:</p> <p>6 WILLIAMS &amp; CONNOLLY, LLP</p> <p>7 725 Twelfth Street, Northwest</p> <p>8 Washington, D.C. 20005</p> <p>9</p> <p>10</p> <p>11</p> <p>12 Taken pursuant to the Federal Rules of Civil</p> <p>13 Procedure, before John L. Harmonson, Registered</p> <p>14 Professional Reporter, Notary Public in and for the</p> <p>15 District of Columbia, who officiated in administering</p> <p>16 the oath to the witness.</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p>	<p>1 EXAMINATION INDEX</p> <p>2 PAGE</p> <p>3 EXAMINATION BY MR. HICKOX</p> <p>4 * * * * *</p> <p>5</p> <p>6 EXHIBIT INDEX</p> <p>7 (Exhibits attached to transcript.)</p> <p>8 EXHIBIT DESCRIPTION PAGE</p> <p>9 4 Supplemental Expert Report of Jeffrey 10</p> <p>10 Alan Dubin, Ph.D.</p> <p>11</p> <p>12</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p>

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1 PROCEEDINGS

2

3 THE VIDEOGRAPHER: Here begins Tape

4 No. 1 in the deposition of Jeffrey Dubin, in the

5 matter of KMS v. Marriott International, Inc.,

6 et al., in the United States District Court for

7 the District of Maryland, Case

8 No. 8:05-cv-00787-PJM.

9 Today's date is October 23rd, 2007.

10 The time is 8:59 a.m.

11 The video operator today is Brian

12 Mackey.

13 This deposition is taking place at the

14 offices of Williams & Connolly, 725 Twelfth

15 Street, Northwest, Washington, D.C.

16 Would counsel please identify

17 themselves and state whom they represent.

18 MR. HICKOX: Ken Hickox for the

19 plaintiffs.

20 MR. JONES: Malachi Jones of Williams &

21 Connolly representing the defendants, and here

22 with me is Bernard Joseph of Marriott.

6

1 THE VIDEOGRAPHER: The court reporter

2 today is John Harmonson of LAD Reporting. Would

3 the reporter please swear in the witness.

4 JEFFREY A. DUBIN, Ph.D.,

5 after having been first duly sworn, was examined

6 and did testify under oath as follows:

7 EXAMINATION

8 BY MR. HICKOX:

9 Q. Thank you, Mr. Dubin. As I said, my

10 name is Ken Hickox. I represent the plaintiff KMS

11 in this matter.

12 This is your second deposition in this

13 case, is it not?

14 A. Correct.

15 Q. And you've been deposed before in other

16 cases, correct?

17 A. Correct.

18 Q. And you've given testimony at trial

19 before also?

20 A. Correct.

21 Q. So I'm not going to go over any of the

22 previous ground rules that were laid before. I

7

1 have a few. One is that you're really in control

2 of this deposition. If you need to take a break

3 to consult with your attorney or anything like

4 that, just tell me and we'll do that.

5 Also, my only other rule is, and I'm

6 sure you've heard this before, is you need to

7 enunciate or state any answer to a question, not

8 just a nod of the head. And if you don't

9 understand a question I ask, please just ask me to

10 repeat it or rephrase it, because if you answer,

11 we're all going to assume that you understood the

12 question.

13 Your last deposition was taken on

14 February 25th, 2006. Is that your recollection?

15 A. Approximately.

16 Q. Have there been any changes to your

17 C.V. since that date?

18 A. Yes.

19 Q. Okay. What were those? Do you recall?

20 A. I provided an updated C.V. I don't

21 really recall exactly what the changes are.

22 They're updating my publications. I would have to

8

1 look at it to tell you exactly what changed.

2 Q. Any particular experience that you've

3 garnered since your last C.V. was submitted --

4 well, since your last deposition was taken that

5 would be particularly apt to this particular case,

6 such as did you testify in other hotel cases or do

7 studies with regard to the hotel or hospitality

8 industry?

9 MR. JONES: Object to the form.

10 BY MR. HICKOX:

11 Q. Do you understand my question?

12 A. I basically understand your question.

13 Q. Okay. Can you basically answer it?

14 A. Sure. I haven't done any new hotel

15 studies. I have had -- I have testified at one

16 other trial, and I've done other econometric

17 studies, and I believe all of those were in some

18 sense relative to my experience.

19 Q. What was the type of case that you

20 testified at trial about?

21 A. It was a utility, electric utility case

22 about rates and the price of electricity in the

9

1 **Pacific Northwest.**  
2 Q. And when was that?  
3 A. **Sorry?**  
4 Q. When was that testimony? Do you  
5 recall?  
6 A. **I think I was at a hearing about a**  
7 **month ago in that case.**  
8 Q. What court was that in?  
9 A. **It's a regulatory proceeding, so before**  
10 **an ALJ in Portland before the Public Utilities**  
11 **Commission.**  
12 Q. Now, this case that you're testifying  
13 in now, is this the only case that you've had  
14 prior to this -- Well, strike that.  
15 Is this the first time you've testified  
16 in a case related to the hospitality industry?  
17 A. **It could be, yes.**  
18 Q. Any additional publications that as you  
19 sit here today you recall since your last  
20 deposition?  
21 A. **Have I had other publications? Yes.**  
22 Q. And what were those?

10

1 A. **I finished an article that came out in**  
2 **the Energy Journal, I think it was the Energy**  
3 **Journal. And I think there's another paper that's**  
4 **been accepted in another journal that's on revise**  
5 **and resubmit, meaning that subject to revision, it**  
6 **will be accepted.**  
7 **I can't remember if there's anything**  
8 **else in the last couple of years.**  
9 Q. Let's go ahead and mark as -- we're  
10 going to continue -- For the record, we're going  
11 to continue the exhibit numbers from your last  
12 deposition. So let's go ahead and mark as Exhibit  
13 No. 4 your supplemental expert report.  
14 (Exhibit 4 marked for identification and  
15 attached hereto.)  
16 BY MR. HICKOX:  
17 Q. And that doesn't include your exhibits,  
18 so I'm just putting in the -- Well, I guess  
19 actually I think it does. No, it does not.  
20 So Exhibit 4 is your supplemental  
21 expert report sans your exhibits for now. If I  
22 need to separately mark those, I will.

11

1 Is this -- Is this the third report you  
2 made in this case? Am I correct in that?  
3 A. **I don't recall if I had a second**  
4 **rebuttal report or not. I think this is the**  
5 **second report I've written.**  
6 Q. Okay.  
7 A. **But if there was one in between, I**  
8 **haven't looked at it recently.**  
9 Q. Well, let me ask you this: So the  
10 prior reports that you recall, do you have -- as  
11 you sit here today, have there been any changes to  
12 any of the opinions that you stated in your prior  
13 reports that are not otherwise reflected in your  
14 supplemental report?  
15 A. **I believe there's one report, prior**  
16 **report.**  
17 Q. Okay.  
18 A. **That's my best recollection.**  
19 Q. Okay.  
20 A. **So I may refer to it. There have not**  
21 **been any major changes to opinions I've offered in**  
22 **that report. There may be some -- There's**

12

1 **certainly been some updating of econometric models**  
2 **that I provided in that report, but the main**  
3 **thrust of it has not changed.**  
4 Q. And the updating of the econometric  
5 models that you provided in your first report,  
6 would that be reflected in the supplemental report  
7 that we've marked as Exhibit 4 or in the exhibits  
8 thereto?  
9 A. **Yes.**  
10 Q. So I would be correct in stating that  
11 any changes to any opinions that you've had since  
12 your first report would be reflected in the  
13 supplemental report?  
14 A. **To the extent that I've covered them,**  
15 **yes. But I think it's pretty complete in that**  
16 **respect, yes.**  
17 Q. Are there any additional opinions that  
18 you've come to since you submitted your  
19 supplemental report that's Exhibit 4?  
20 A. **There may be a few.**  
21 Q. And what are those?  
22 A. **I provided some additional work papers,**

13

1 and I recall at least one topic area that I  
2 thought a little bit about, which was the -- the  
3 issue of whether or not upgraded customers had  
4 been taken out appropriately by Mr. Owsley, or the  
5 consequence of the upgraded customer phenomenon.  
6 And I did some further analysis,  
7 perhaps between the time I filed this report and  
8 the time I turned over work papers, where I did  
9 some calculations about the average rates paid by  
10 upgraded customers. That would be one area.  
11 A second area was a little analysis I  
12 did of the trend of Japanese people to visit Bali  
13 and to stay at the Ritz-Carlton in Bali. And that  
14 was an analysis I did after receiving some  
15 additional work papers from Mr. Owsley after I had  
16 filed that report.  
17 Q. Now, as to the first additional  
18 analysis that you did with regard to the -- I  
19 believe you said the average rates of upgraded  
20 customers. And that would be at the Ritz-Carlton  
21 Bali, correct?  
22 A. Correct.

14

1 Q. What was that additional analysis based  
2 on, what data?  
3 A. The data was data that was provided by  
4 or through Mr. Owsley's work papers, and it was,  
5 as I recall, monthly data -- or actually daily  
6 data between January and June of 2007. And it  
7 said on the sheets that the rates stated there, I  
8 believe, included the upgraded customers.  
9 Q. And what were the additional opinions  
10 that you drew from that additional analysis?  
11 A. Well, Mr. Owsley had stated, I think in  
12 a footnote in his second report or third -- his  
13 third report that -- that he understood that some  
14 customers had received upgrades from the hotel  
15 portion of the Ritz-Carlton to the villa portion,  
16 and I believe he says in his report that those  
17 customers received those upgrades at no charge.  
18 And I undertook an analysis to examine  
19 that data with respect to the average rates paid  
20 by three segments at the Ritz-Carlton: The pure  
21 hotel segment, i.e., someone who stayed at the  
22 hotel; someone who stayed at the villa; and those

15

1 who fell in between, i.e., those who had been  
2 given an upgrade from the hotel to the villa.  
3 And I calculated -- I had sufficient  
4 information to actually calculate the average  
5 daily rates paid by those given upgrades, and I  
6 discovered that for that six-month period that the  
7 customers that had received upgrades were paying  
8 an average daily rate, that was quite close to the  
9 villa rate and very different from the price paid  
10 by customers staying at the hotel.  
11 So I came to the opinion that  
12 Mr. Owsley's statement that certain customers had  
13 received upgrades at no charge to them may have  
14 been true for certain customers, but for the bulk  
15 of the customers it was an -- it's an incorrect  
16 characterization.  
17 Q. And how does that impact on any of your  
18 opinions?  
19 A. Oh, it has, I think, a small impact in  
20 the sense that Mr. Owsley received data that  
21 removes upgraded customers from the data he  
22 analyzes statistically, and I see really no reason

16

1 to particularly do that given that the people that  
2 had received upgrades were in fact probably upsold  
3 or were the people who had spent the most for the  
4 hotel rooms and had to pay only maybe a marginal  
5 amount to get into the villa. So it's probably,  
6 in retrospect, inappropriate to remove such  
7 customers from the villa series.  
8 But apparently it was done -- I hope it  
9 was done by the folks that provided the data to  
10 Mr. Owsley on a consistent basis; in other words,  
11 the upgraded customers were removed from the data  
12 consistently. I probably would have sought to do  
13 it differently if the data had been otherwise.  
14 Q. Sought to do what differently?  
15 A. I would have analyzed the data,  
16 perhaps, with the upgraded individuals included  
17 rather than excluded as Mr. Owsley chose to do.  
18 Q. And the papers that reflect your  
19 additional analysis or any work papers you had,  
20 those have been turned over to KMS in this case?  
21 A. Yes.  
22 Q. So as far as you know, everything you

17

1 did based on those is reflected?

2 **A. Yes.**

3 **Q. What about the -- And again, let me go**

4 **back to something, because I want to make sure I'm**

5 **clear on something. Exactly, then, how does this**

6 **additional analysis affect any of your opinions**

7 **with regard to what was in your supplemental**

8 **report? Can you be very precise about that?**

9 **A. Well, all I understood about the**

10 **upgraded or upsold customers at the time was that**

11 **they had been removed, apparently. And I said**

12 **that Mr. Owsley didn't bother to explain how it**

13 **had been done.**

14 **And now I understand that his**

15 **characterization of those customers is incorrect.**

16 **So it's a further point in my understanding of**

17 **what Mr. Owsley I think does not understand about**

18 **the data he is using.**

19 **But other than that, it doesn't change**

20 **my opinions.**

21 **Q. His characterization of those customers**

22 **being that characterization, what do you mean by**

18

1 his characterization? I just want to be very

2 precise.

3 **A. Sure. In his report he has a**

4 **characterization of customers that had received**

5 **upgrades in a footnote, and he characterizes those**

6 **customers as receiving upgrades at no charge to**

7 **them. I think that's unlikely based on the data I**

8 **examined.**

9 **Q. Well, you keep saying -- When you say**

10 **"unlikely," why do you say "unlikely" as opposed**

11 **to "not true"?**

12 **A. Well, the analysis I'm doing is**

13 **somewhat inferential. I'm working off of average**

14 **rates, and I'm doing calculations, and I'm saying**

15 **the rates that these customers pay are, on**

16 **average, closer to the villa prices than they are**

17 **to the hotel prices.**

18 **On a case-by-case basis, I can't tell**

19 **you whether a person received a free upgrade or**

20 **exactly what mechanism it was that got them from**

21 **the hotel into the villa.**

22 **Again, it could possibly be that they**

19

1 **were people that were already staying at the very**

2 **best room at the hotel, perhaps a suite, and then**

3 **were given the opportunity, because of a capacity**

4 **problem, to move over, or they were upsold. I**

5 **don't know the exact mechanism. All I can tell**

6 **you is that on average they paid rates that were**

7 **quite close to villa rates.**

8 **Q. But you don't know whether they were**

9 **upsold or not, do you?**

10 **A. Correct. That's why I said I'm only**

11 **giving a likelihood about --**

12 **Q. And if Mr. Owsley's characterization**

13 **turned out to prove true and that none of these**

14 **individuals were upsold but rather were upgraded**

15 **for free, would that impact on anything you've**

16 **said today?**

17 **A. It would leave a big puzzle in my mind**

18 **about how it is that these people that were**

19 **upgraded for free end up paying such high rates.**

20 **It's like a person sitting in coach on**

21 **an airplane paying \$600 ending up in a \$5,000 seat**

22 **but in fact paying, when you look at the**

20

1 **information, \$4,000 for the seat. It would**

2 **surprise me that that person had been upgraded for**

3 **free.**

4 **Q. Well, using that same analogy, isn't it**

5 **true that sometimes people in coach pay \$2,000 for**

6 **a seat and people in first class pay \$2,100 for a**

7 **seat?**

8 **A. Sometimes.**

9 **Q. Now, the second thing that you talked**

10 **about, about some additional analysis was you**

11 **looked at -- again, I don't want to**

12 **mischaracterize it, but I think you said you**

13 **looked with regard to the trend of Japanese**

14 **tourists visiting the Ritz-Carlton Bali. Was that**

15 **any particular additional time period?**

16 **A. I believe that Mr. Owsley turned over**

17 **some additional work papers from 2000**

18 **through 2007.**

19 **Q. What do you mean by "trend"?**

20 **A. Sorry?**

21 **Q. What do you mean by the word "trend"?**

22 **You said you looked at the trend.**

21

1 A. I don't recall in what context I used  
2 the word "trend."  
3 Q. Why don't you for us redescribe the  
4 second additional analysis you did so I can be  
5 clear.  
6 A. Sure. I may have used the word  
7 "trend," I just don't remember at this point.  
8 What I did was to look at the rate at  
9 which Japanese visit the island of Bali from 2000  
10 to 2007 based on arrival data that had been --  
11 data that I had been using already. So I did a  
12 time graph or plot of the percentage of Japanese  
13 who visit the island of Bali. And that's all  
14 based on data that I had been using in the case.  
15 What Mr. Owsley provided were some  
16 additional work papers that I had not seen before  
17 that showed the percentage of Japanese who stayed  
18 at the Ritz-Carlton hotel, not distinguished  
19 between room and villa, from 2000 to present.  
20 And I also produced a graph of that  
21 information, and then I compared the two and  
22 looked for trends. I looked for patterns or

22

1 movements in one direction or another, whether  
2 there was constancy, growth, cycles, whatever.  
3 Q. What did you find out?  
4 A. I found out that the percentage of  
5 Japanese visiting the island had declined minorly,  
6 maybe varying by as much as, I don't know, 5 to 10  
7 percent over that seven-year period. They were,  
8 of course, affected by the bombing like others  
9 were.  
10 I also found out that the percentage of  
11 those staying at the -- customers who visited the  
12 Ritz-Carlton, who stayed there who were Japanese,  
13 was a much more significant -- it was a  
14 significantly higher percentage of those customers  
15 at the Ritz-Carlton who stayed there who were  
16 Japanese.  
17 Sorry that got a little garbled.  
18 Q. Did I understand you to say that your  
19 analysis of the data, this additional data, led  
20 you to conclude that the percentage of Japanese  
21 tourists to the island of Bali in general is much  
22 higher than the percentage of -- Did I --

23

1 A. No, no, no. It's the other way around.  
2 I found that the percentage of the customers  
3 staying at the Ritz-Carlton who were Japanese was  
4 much higher than the overall percent of visitors  
5 to Bali who were Japanese.  
6 And then I also found that after the  
7 bombing in 2002, October, the Japanese left being  
8 customers of the Ritz-Carlton at a greater rate  
9 than they seemed to for the island as a whole.  
10 There was a larger decline in Japanese staying at  
11 the Ritz-Carlton.  
12 The other thing I did was I compared  
13 one graph to the other to see whether there was  
14 sort of a change in the -- let's call it the  
15 importance of Japanese at the Ritz-Carlton versus  
16 the island as a whole, and I really couldn't  
17 discern much.  
18 There's, as I recall, a large gap in  
19 the data that Mr. Owsley provided that makes  
20 finding or coming to a conclusive analysis about  
21 the Ritz-Carlton difficult. But these were the  
22 impressions I formed.

24

1 Q. And were those impressions that you  
2 formed, did they have any impact on any of your  
3 opinions?  
4 A. Only to the extent that nothing I saw  
5 in that data changed my opinion that it is  
6 appropriate to think about Japanese and other  
7 customers separately. And I began to think a  
8 little bit more about the income phenomena of the  
9 Japanese and how it made sense to me that the  
10 Japanese would stay at a place like the  
11 Ritz-Carlton, which is a very nice hotel, at a  
12 greater rate than they would at other places on  
13 the island at lower price points.  
14 And it also was consistent with my  
15 understanding that when you look at the Villa  
16 separately, you find that the Japanese percentage  
17 of customers is even greater than it is at the  
18 hotel as a whole.  
19 So everything I saw was consistent with  
20 things that I had thought about in the case.  
21 Q. Now, you mentioned the fact that there  
22 was a larger decline of Japanese customers staying

25

1 at the Ritz-Carlton Bali after the bombing. Which  
2 bombing was that?  
3 **A. October of 2002.**  
4 **Q. Than there was in the percentage that**  
5 **reduced down for the island of Bali total. Why**  
6 **did you happen to mention that statistic? Have**  
7 **any particular import?**  
8 **A. Well, it's something I noticed in the**  
9 **graphical data, and it was consistent with, again,**  
10 **my understanding and opinion that as an income --**  
11 **as a budget-sensitive group, or less**  
12 **budget-sensitive group, the Japanese would look at**  
13 **Bali and say, "We're not going to go there after a**  
14 **bombing because we have the income to go other**  
15 **places. We can take our money and move to other**  
16 **resort locations like Phuket and so forth."**  
17 **So if the Ritz-Carlton is drawing an**  
18 **income -- a less income-sensitive group, a richer**  
19 **group, then those people are going to be a little**  
20 **bit more sensitive to the bombing phenomenon than**  
21 **others would, say the Australians who would**  
22 **continue to come to the island because they don't**

26

1 **have as great an income and therefore their**  
2 **substitution possibilities are not as large as for**  
3 **the Japanese.**  
4 **Q. And again, maybe I'm -- I don't want to**  
5 **simplify the statistics or the econometrics here,**  
6 **so that particular fact that -- I mean, the first**  
7 **fact you stated was that a higher percentage of**  
8 **Japanese tourists go to the RC Bali than a higher**  
9 **percentage of tourists -- than a percentage of the**  
10 **Japanese tourists total on the island of Bali?**  
11 **A. Correct.**  
12 **Q. So wouldn't it make a certain sort of**  
13 **sense that if in fact there was a lower percentage**  
14 **of Japanese tourists going to the island of Bali**  
15 **in general after the bombing, then that would have**  
16 **a greater impact of the percentage and there would**  
17 **be a concomitant greater lower percentage of**  
18 **Japanese tourists going to the Ritz-Carlton Bali?**  
19 **MR. JONES: Object to the form.**  
20 **BY MR. HICKOX:**  
21 **Q. I think you understand what I'm trying**  
22 **to say. I mean, if there is a correlation like**

27

1 that, the correlation would work in reverse, too,  
2 wouldn't it?  
3 **A. Well, the absolute numbers would fall**  
4 **off, perhaps, in the direction you suggest. But**  
5 **on the percentage basis, I believe that the data**  
6 **is consistent with the pattern I described.**  
7 **Q. Are there any other additional opinions**  
8 **that you've had since your submission of the**  
9 **supplemental expert report?**  
10 **A. Not that I can recall offhand.**  
11 **Q. Let's switch gears a little bit. Just**  
12 **in brief, because we went over this -- well,**  
13 **excuse me, Mr. Collins from my office went over**  
14 **this with you fairly thoroughly at your last**  
15 **deposition, and I don't want to repeat it.**  
16 **But in general for the jury, again can**  
17 **you just briefly state what your background and**  
18 **training is.**  
19 **A. My background and training. Sure.**  
20 **Education. My educational background is I have a**  
21 **bachelor's degree in economics with highest honors**  
22 **and grade distinction from Berkeley and a Ph.D. in**

28

1 **economics from MIT which I received in, I guess,**  
2 **1982.**  
3 **I became a young assistant professor at**  
4 **the California Institute of Technology in**  
5 **approximately 1982 at about the age of 24. I**  
6 **became a tenured professor six years later and**  
7 **have taught econometrics and statistics at either**  
8 **the undergraduate or graduate level for --**  
9 **continuously for 25, 30 years.**  
10 **I started doing economic**  
11 **consulting-type work as a graduate student where I**  
12 **had the opportunity to work on outside projects**  
13 **and cases. And I've been connected with a variety**  
14 **of economic consulting firms, and at this point in**  
15 **my career I have an economic consulting firm that**  
16 **I am a partner in that I began. And I continue to**  
17 **do some economic consulting along with my research**  
18 **and teaching.**  
19 **Q. What areas do you consider yourself**  
20 **qualified to offer expert testimony in in a court**  
21 **of law?**  
22 **A. Any and all that I'm admitted to.**

29

1 Q. And what are those?  
2 A. Well, I haven't really reached the  
3 boundaries yet. I have testified, certainly, in  
4 matters of economics and statistics. I've done  
5 work in other areas including meteorology and  
6 physical sciences that I've offered testimony in.  
7 Q. You've offered expert testimony in  
8 meteorology and physical sciences?  
9 A. Yes.  
10 Q. Okay. Anything else?  
11 A. Well, certainly in the area of  
12 marketing and market values. I mean, I would have  
13 to really look at my C.V. to give you some sense  
14 of the breadth of the topics that I've worked on  
15 and that I've written about and offered even  
16 testimony in.  
17 Q. But those are all based on your  
18 training and education and experience?  
19 A. Certainly. I would include finance  
20 where I -- I guess, as I recall now, I as -- I did  
21 the Ph.D. sequence of courses in finance at MIT  
22 along with Ph.D. students in the Sloan school who

30

1 became Ph.D.'s in finance. That was one of my  
2 minor fields at MIT.  
3 Q. Now, do you consider yourself a legal  
4 expert?  
5 A. No.  
6 Q. Okay. You're not an expert in contract  
7 interpretation?  
8 A. No.  
9 Q. You're not here to offer any opinions  
10 with regard to any interpretation of any contracts  
11 in this case?  
12 A. No.  
13 Q. You're not here to offer the court any  
14 opinion as to any legal matters in this case?  
15 A. I wouldn't do that, no.  
16 Q. You're not here to offer any  
17 interpretations specifically of the amended and  
18 restated operating agreement between the parties  
19 in this case?  
20 A. To the extent that it calls for a legal  
21 opinion, no.  
22 Q. Any other extent that you would offer

31

1 an opinion with regard to the interpretation of  
2 the amended and restated operating agreement?  
3 A. If I were asked about it and it was  
4 within my level of expertise, in other words, if  
5 there was an economic component to it, I would  
6 offer an opinion.  
7 Q. Do you recall if there is any mention  
8 in your supplemental report about any opinion you  
9 have about any contract terms between the parties?  
10 A. I don't mention any contracts in the  
11 supplemental report.  
12 Q. How did you prepare for your deposition  
13 today?  
14 A. Well, we had a deposition scheduled --  
15 This is a little complicated. We had a deposition  
16 scheduled weeks ago, I believe.  
17 Q. Uh-huh.  
18 A. So I would include what I'm about to  
19 say as including that --  
20 Q. Sure.  
21 A. -- time as well.  
22 I reread my original report, including

32

1 any appendices. I reread my supplemental report  
2 and its appendices. I reread Mr. Owsley's  
3 reports. I read or reread Mr. Owsley's deposition  
4 connected with his supplemental report.  
5 And then I met with counsel for  
6 Marriott to discuss the deposition on one  
7 occasion.  
8 And I think that would be the sum total  
9 of it.  
10 Q. About how long would you guess you  
11 spent? How many hours would you guess you spent  
12 preparing for the deposition?  
13 A. It wouldn't surprise me if I spent 20  
14 hours preparing.  
15 Q. Who did you speak with when you said  
16 you met with legal counsel? Well, let me strike  
17 that. Let me be careful about what I say.  
18 You stated that you met with legal  
19 counsel for Marriott to discuss the deposition; is  
20 that correct?  
21 A. Correct.  
22 Q. Who did you meet with?

33

1     **A. Mr. Jones and Mr. Smurzynski.**  
2     **Q. Did you only meet with them once on one**  
3 **occasion or did you meet with them more than once?**  
4     **A. In connection with preparation for the**  
5 **deposition, I met with them once.**  
6     **Q. Did you meet with them together or**  
7 **separately?**  
8     **A. Together.**  
9     **Q. And when was that?**  
10    **A. Yesterday.**  
11    **Q. And how long did that meeting last?**  
12    **A. Five hours including lunch.**  
13    **Q. What did you go over?**  
14    **A. We talked a little bit about my report.**  
15 **We talked a little bit about the -- oh, I don't**  
16 **know, some of the lines of questioning that you**  
17 **might ask. You know, the usual drill to prepare**  
18 **for a deposition, which I view as -- I offer this**  
19 **gratuitously from my experience, but mostly an**  
20 **opportunity just to start talking about the case**  
21 **again, get it -- get it -- orally articulate**  
22 **things about the case as opposed to just thinking**

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1 **about it.**  
2     **Q. Are there any particular topics about**  
3 **your report that you remember discussing in**  
4 **particular, that they seem to be more --**  
5     **MR. JONES: Object to the form.**  
6 **BY MR. HICKOX:**  
7     **Q. You can answer.**  
8     **A. I guess I recall one.**  
9     **Q. What was that?**  
10    **A. Mr. Jones asked me a couple of**  
11 **questions about comparing an R squared value that**  
12 **I had discussed in my supplemental report versus**  
13 **the R squared values of some of the models that**  
14 **appeared in my original report. We talked about**  
15 **that a little bit.**  
16     **In fact, I went over the topic of the**  
17 **Japanese that you and I discussed already this**  
18 **morning, because I had some -- I wanted to share**  
19 **with him what those graphs looked like or how that**  
20 **data plotted out.**  
21     **Particular areas that we went**  
22 **through -- nice glossy paper.**

35

1     **Oh, I talked to them a little bit about**  
2 **some errata that I had prepared that I had sent**  
3 **out to them. Prior to the first deposition, I**  
4 **asked if they had been provided to the plaintiffs,**  
5 **and it was my understanding that I was going to**  
6 **cover those topics quickly orally with you, and**  
7 **then the decision was made just to send you the**  
8 **errata because they were errata.**  
9     **And we went through the errata**  
10 **themselves and I explained what each of the**  
11 **problems or typos had been.**  
12     **Let's see. I'm looking for, again,**  
13 **particular areas that we talked about. Japanese**  
14 **we talked about.**  
15     **Oh, we talked a little bit about the**  
16 **duration of the Bali bombing effects that I had**  
17 **assumed in the report, the 15 months versus three**  
18 **months kind of issue. I'm sure you'll ask me more**  
19 **about that, so I won't elaborate.**  
20     **And Mr. Jones asked me if it was my**  
21 **normal practice to do an analysis of residuals.**  
22     **We spent a little time talking about**

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1 **the room upgrade topic area that you and I**  
2 **discussed already this morning.**  
3     **We talked a little bit about, again,**  
4 **consistency between work I had done in this case**  
5 **or this report versus my original econometric**  
6 **modeling, and I had some questions from Marriott**  
7 **counsel about whether, for instance, I controlled**  
8 **for seasonality in my original models.**  
9     **And I think that's it for particular**  
10 **areas that we talked about.**  
11    **Q. Did that include any particular lines**  
12 **of questioning that they thought I might have,**  
13 **that they thought I might make with you?**  
14     **MR. JONES: Object to the form.**  
15 **BY MR. HICKOX:**  
16    **Q. You mentioned the other thing you**  
17 **talked about was potential lines of questioning.**  
18    **A. I'm sorry, I'm not quite sure I**  
19 **understand your question.**  
20    **Q. Okay. I'll ask this question. You**  
21 **mentioned before that you also discussed potential**  
22 **lines of questioning that I might have. What were**

37

1 those?

2 **A. Well, we didn't know you were taking**

3 **the deposition, so you generically. We talked**

4 **about those topic areas as things that might come**

5 **up in the lines of questioning.**

6 Q. And what were those? The things you

7 already have just stated?

8 **A. Yes. Correct.**

9 Q. Let me circle back a little bit. First

10 question. I did get the errata sheet yesterday.

11 Was there any -- Let me just ask you this: Was

12 there anything in the errata that would change any

13 of your opinions with regard to any of the reports

14 that you submitted?

15 **A. Well, I think there were five errata.**

16 Q. Uh-huh.

17 **A. I believe three of them were of the**

18 **kind -- were almost typos, you know, like a Bates**

19 **number being wrong or something like that. So**

20 **that really doesn't change my opinion. I was**

21 **trying to be thorough. You know, when we publish**

22 **we go back and we find mistakes. It's inevitable.**

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1 **There were two others that I viewed as**

2 **more substantive. One I had a word switch where I**

3 **think I said "worse" and I meant to say "better"**

4 **and vice versa. So that does flip that opinion a**

5 **little bit, but not in my head, just in what I had**

6 **written.**

7 Q. Right.

8 **A. And the other one was I said in here,**

9 **in my supplemental report, I said that Mr. Owsley**

10 **assumes that damages -- I think I said increase at**

11 **an increasing rate, and that's incorrect. He**

12 **assumes the damages will increase but at a**

13 **constant rate. So I just wanted to correct that.**

14 Q. Is it your normal practice to do an

15 analysis of residuals?

16 **A. Yes.**

17 Q. Is there any inconsistency between the

18 work you did in your first report and your

19 supplemental report?

20 **A. No.**

21 Q. Did you control for seasonality in your

22 original regression model?

39

1 **A. I did in my models of the Milan market**

2 **that had sufficient numbers of observations where**

3 **a seasonality correction was possible. I**

4 **discussed seasonality. There were other models**

5 **for the Ritz-Carlton that were based only on a**

6 **year and a half of data, 18 months of data, where**

7 **a seasonality correction was not possible and**

8 **those models did not include seasonality**

9 **adjustment.**

10 Q. Did you -- So you've gone over the

11 times where you met with Mr. Smurzynski and

12 Mr. Jones. Did you have any phone conversations

13 with them to prepare for this deposition?

14 **A. Only -- I'll say yes.**

15 Q. And what were those about?

16 **A. Where and when.**

17 Q. So just logistics, not substantive?

18 **A. Correct.**

19 Q. Did you speak with any other persons in

20 preparation for your deposition today?

21 **A. No.**

22 Q. With regard to the preparation of your

40

1 supplemental report, did you visit the Bulgari

2 Bali or the Ritz-Carlton Bali?

3 **A. No, I did not visit that property again**

4 **to prepare this report.**

5 Q. The Ritz-Carlton Bali, you're talking

6 about?

7 **A. Correct.**

8 Q. Have you ever visited the Bulgari Bali?

9 **A. Yes.**

10 Q. Okay. When was that?

11 **A. I guess it was -- Strike the "I guess."**

12 **My recollection was that it was**

13 **July 2005 when the property was under**

14 **construction, and there were model rooms available**

15 **for viewing.**

16 Q. So you haven't visited since it opened

17 for operation?

18 **A. Correct.**

19 Q. Have you ever interviewed -- Other than

20 at that visit, have you -- Strike that.

21 Did you interview anyone that works at

22 the Bulgari Bali in preparation for your

41

1 supplemental report?

2 A. No.

3 Q. What about any guests that stayed at

4 the Bulgari Bali?

5 A. No.

6 Q. What about any travel industry

7 professionals, have you interviewed any travel

8 industry professionals in preparation for the

9 supplemental report?

10 A. No.

11 Q. Any employees of any of the defendants,

12 did you interview them in preparation for your

13 supplemental report?

14 A. Yes.

15 Q. Who were they?

16 A. I met with one woman in -- I don't

17 remember exactly. She works for Ritz-Carlton. I

18 don't know her title offhand. I'm going to say

19 something like director or VP for international

20 marketing and sales is my best guess. Her name is

21 Monica, and I'm going to give you my best

22 recollection of the last name. It's something

42

1 like Xuereb (Schwar-ba), and it's spelled

2 beginning with an X. I don't really recall the

3 spelling.

4 Q. When did you meet with her?

5 A. In preparation for the -- in preparing

6 the report. Sometime before the report was done I

7 had another meeting with counsel, and I met with

8 Ms. Xuereb. And the when is -- I would say two

9 weeks before this was due or finalized. So I'm

10 going to say end of August or early September.

11 Q. And what was the purpose of your

12 meeting with Ms. Xuereb?

13 A. I wanted to understand some of the data

14 that she had sent to me and provided to me.

15 Q. And what was that data?

16 A. It was Ritz-Carlton Bali villa and

17 hotel data, capacities, average daily rates,

18 revpars, occupancies.

19 Q. Is the specific data that she sent you

20 detailed in your supplemental report, broken out?

21 A. I don't know about detailed. I

22 certainly mention it. I refer to it as the Bali

43

1 villa analysis spreadsheets. They're part of my

2 work papers.

3 Q. But did you state in your report which

4 information you got directly from Ritz-Carlton and

5 Ms. Xuereb? Did you spell that out?

6 A. No, I did not.

7 Q. Did you ask for that data or did

8 counsel suggest that you talk to Ms. Xuereb after

9 you inquired about getting the data? Strike that.

10 Let me rephrase the question.

11 The data you got from Ms. Xuereb, was

12 this something that was provided to you by counsel

13 at your prompting, or was it just provided to you

14 in the matter of course?

15 A. I requested certain data, and I

16 received a spreadsheet or a series of spreadsheets

17 that ultimately I learned came from Ms. Xuereb.

18 So it was at my prompting, if I understood your

19 question.

20 Q. Did they tell you at the time that the

21 data was coming from Ritz-Carlton Hotels?

22 A. Well, let me clarify -- help you with

44

1 the question, I think.

2 Q. Okay. That's always appreciated.

3 A. Okay. It came from Ritz-Carlton

4 corporate. I don't know if you want to

5 distinguish that, corporate versus hotels. But

6 this data came from Ritz-Carlton corporate, and

7 that data -- the data that they had presumably or

8 did come, I came to learn, from the hotel.

9 Q. Was that data -- Let me phrase this

10 correctly. How would you characterize the data in

11 rank of importance to your opinion -- ability to

12 render your opinions in the supplemental report?

13 MR. JONES: Object to the form.

14 BY MR. HICKOX:

15 Q. Do you understand my question?

16 A. I can probably --

17 Q. Was the data critical to your providing

18 your opinions in your report?

19 A. No.

20 Q. Why?

21 A. Because ultimately it was another

22 version of data that Mr. Owsley had provided, and

45

1 after an extensive comparison of the two data  
2 sources, I used Mr. Owsley's data.  
3 Q. You never used Ms. Xuereb's data?  
4 A. Oh, I did use Ms. Xuereb's data from  
5 time to time and along the way, and I made  
6 extensive use of it when I first received it. But  
7 again, after comparing it to what Mr. Owsley had  
8 tendered, I disclosed certain differences between  
9 the Ritz-Carlton corporate data and Mr. Owsley's  
10 data. I mentioned those in my report. But in the  
11 end, as a matter of simplicity, I went with  
12 Mr. Owsley's data.  
13 Q. Are you testifying that you never --  
14 that the data you provided to Ms. Xuereb, does  
15 it -- is not incorporated into your models at all?  
16 A. Am I testifying about data that I  
17 provided to her, did you say?  
18 Q. No. Strike that.  
19 I mean, are you testifying that you  
20 didn't use any of the data you got from  
21 Ritz-Carlton corporate, from Ms. Xuereb, at all in  
22 the models that appear in your supplemental

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1 report?  
2 A. At this point, that's correct.  
3 Q. Did you use it for any control  
4 purposes?  
5 A. I don't know what you mean by control  
6 purpose.  
7 Q. What did you use it for in your  
8 supplemental report other than what you stated so  
9 far?  
10 MR. JONES: Object to the form.  
11 THE WITNESS: Well, in the end, in the  
12 supplemental report, it's not used.  
13 BY MR. HICKOX:  
14 Q. How was it used by you?  
15 A. Well, it was a matter of chronology. I  
16 had that data before I had Mr. Owsley's data, and  
17 I ran -- I was able to use that data to build  
18 econometric models and to think about the problem,  
19 the issues in the case, to formulate opinions  
20 about the case, et cetera.  
21 I also used it as a comparison to  
22 compare it to the data that was provided by

47

1 Mr. Owsley, whose source was apparently different.  
2 Q. What do you think Mr. Owsley's source  
3 was?  
4 A. He doesn't say. I believe, though, he  
5 would have received it from Mr. Suliawan, the  
6 owner of the hotel, or the people there that would  
7 do revenue or demand management.  
8 Q. So you believe he received his data  
9 from sources on the plaintiff's side of the case?  
10 A. Correct.  
11 Q. Did anybody help you prepare your  
12 supplemental report? And I don't mean -- I don't  
13 mean attorneys. Did you have any graduate  
14 research assistants or things like that?  
15 A. Yes.  
16 Q. And who was that?  
17 A. Oh, I had -- One of my research  
18 assistants was a former student of mine, Brian  
19 Litenberg assisted me. Another research  
20 assistant, James Lynn, provided some assistance.  
21 Q. What assistance did Mr. Litenberg  
22 provide?

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1 A. Oh, my research assistants' functions  
2 in a case like this would be to input data, draw  
3 pictures. They would do simple tasks like, I  
4 would say, compare the revpar numbers that  
5 Mr. Owsley has to the ones that were provided by  
6 Ritz-Carlton corporate and draw me a picture  
7 comparing them, tell me which periods were the  
8 same or which were different. It was very, very  
9 rudimentary-type work.  
10 Q. What about Mr. Lynn? Same thing?  
11 A. Mr. Lynn is -- has, I guess, a master's  
12 in economics. I tend to give him higher order  
13 tasks. And I think I used him and I used  
14 Mr. Litenberg to both pore through documents to  
15 find information for me among the documents that  
16 we received already in the case.  
17 Q. Anybody else help you with the  
18 preparation of the report?  
19 A. I have a partner, Colin Long, who is a  
20 lawyer by training, and it's my practice to have  
21 Mr. Long read through and edit reports that I  
22 write. So I would say he provided some

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1 assistance.

2 Q. Do you recall what specific edits he

3 made in the beginning?

4 A. No. It was all grammatical. I have

5 trouble with my "whiches" and "thats" and that

6 sort of thing, despite trying to learn the

7 difference.

8 Q. Anybody else?

9 A. We're talking about my supplemental

10 report?

11 Q. Only your supplemental report.

12 A. No, that's it.

13 Q. Did you keep any drafts of your

14 supplemental report?

15 A. No.

16 Q. Is that your normal course not to keep

17 drafts?

18 A. We overwrite them, or I overwrite them.

19 So yes, it's my normal pattern.

20 Q. What input, if any, did any of the

21 attorneys for any of the defendants have in regard

22 to your supplemental report?

50

1 A. You mind if I look at the report to --

2 Q. Absolutely not.

3 A. -- refresh myself on that?

4 I recall that one suggestion was to

5 take graphs that were embedded in the text as

6 small figures and tables and to use full pages for

7 those and put them in an appendix. That was a

8 suggestion by Mr. Smurzynski.

9 I recall that they suggested -- the

10 attorneys suggested some amplification of my

11 discussion of the analysis of residuals by G.S.

12 Maddala and that I create an appendix where I

13 actually include the data from Maddala and some

14 analysis to -- that could be used, perhaps, as an

15 exemplar of the analysis of residuals. I think I

16 had offered that I had done such work, and they

17 said, "That might be useful. Put that in an

18 appendix."

19 Q. Why did they say that would be useful?

20 A. They said it might be useful.

21 Q. For what reason?

22 A. They thought perhaps it would help

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1 me -- or it could be used -- I would presume that

2 they thought that it might be useful to help

3 explain the error of Mr. Owsley's ways with

4 respect to the statistical analysis he did when

5 I'm in court.

6 Q. Okay. Anything else?

7 A. Sorry, I'm just trying to --

8 Q. That's all right.

9 A. -- see if there is absolutely anything

10 that comes to me.

11 One topic area that I think I added

12 after I spoke with them was I believe I brought up

13 the -- the problem that I had seen with Mr. Owsley

14 omitting the cost of running a hotel in his damage

15 calculation. And I said that there were

16 additional costs that were not picked up and that

17 I could add something about that. And they

18 thought that was a good idea, and I ended up

19 adding something there.

20 I had an example about motor vehicle

21 accident rates, and I think I was, when I first

22 wrote it, comparing New York and Maine as opposed

52

1 to New York over time, and I got a little pushback

2 from the lawyers saying, "That's not clear, why

3 don't you think about a different example." So I

4 switched it to the state of New York over time.

5 I mean, it's really, really minor stuff

6 that I can think of. I think that's it.

7 Q. Okay. Is it accurate to state that any

8 opinion you intend to offer at trial, at least as

9 of this date, is reflected in either your first

10 report, your supplemental report or in the

11 testimony you've given so far today?

12 A. Yes.

13 Q. Now, you mentioned Maddala. I think

14 you cited to a textbook. If you'll look at

15 page 40 of your report, in Footnote 45, Exhibit 4

16 there.

17 A. Yes.

18 Q. G.S. Maddala, "Econometrics,"

19 McGraw-Hill, 1977.

20 A. Correct.

21 Q. Is that the Maddala you're referring

22 to?

53

1 A. Yes.

2 Q. Why did you cite to that particular

3 text?

4 A. Well, I could have cited to any of a

5 score or multiple score of books on the same

6 topic. It's just that Maddala is one that I

7 happen to teach from at both the graduate and

8 undergraduate level, and I like the way he writes.

9 So if I'm looking for an elementary

10 discussion or a discussion of an elementary topic

11 in econometrics, it's the kind of book I'll grab

12 off my shelf.

13 Q. So that particular Maddala text is a

14 textbook that you use in your teaching?

15 A. I have, yes.

16 Q. To teach what?

17 A. To teach econometrics to

18 undergraduates.

19 Q. Do you consider that a textbook or a

20 treatise?

21 A. I would call that a textbook.

22 Q. Is it a -- I'm going to quote something

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1 to you, because it's a legal quote. Would you

2 consider that "a systematic exposition and

3 argument for writing regarding econometric

4 principles, methods and applications"?

5 MR. JONES: Object to the form.

6 BY MR. HICKOX:

7 Q. Did you understand my question?

8 A. Yes.

9 Q. Okay. Would you -- I'll state it

10 again. Would you consider the Maddala textbook "a

11 systematic exposition and argument in writing

12 regarding econometric principles, methods and

13 applications"?

14 A. I would.

15 Q. Does it include a methodical discussion

16 of the facts and principles involved and

17 conclusions reached in the textbook?

18 A. Yes.

19 Q. Is it written primarily for econometric

20 professionals and students?

21 A. Yes. And economists.

22 Q. Subject to scrutiny and exposure for

55

1 inaccuracy with the reputation of the writer at

2 stake?

3 A. Sure.

4 And by the way, that's the issue --

5 that's the edition of the book I happen to have.

6 I think it's probably been updated.

7 Q. Since 1977?

8 A. Umpteenth times since 1977.

9 Q. It's still a widely used textbook in

10 the field?

11 A. I don't know about that.

12 Q. Well, strike that.

13 It's still a textbook that's used that

14 you're familiar with to teach elementary

15 econometrics?

16 A. I don't know that it's still in print,

17 that particular book, so I'm going to have to say

18 no. But I'm not really sure.

19 I use another Maddala book right now,

20 and there is another undergraduate book that he's

21 co-authored that I believe is in print. This

22 particular book, I'm not sure.

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1 Q. What is the other Maddala book you use

2 now?

3 A. I use a book called "Limited Dependent

4 Variable Econometrics" or something like that.

5 Q. Do you still teach elementary

6 econometrics?

7 A. Yes.

8 Q. What textbook do you use in that class?

9 A. Well, the last course that I taught at

10 an elementary level was a mixture of limited

11 dependent variable econometrics and a subject in

12 econometrics called time series analysis. And on

13 the first component I did not use a book, I used

14 my own writings.

15 And on the second part of the course,

16 the second half of the course, I did use a book,

17 but I can't remember the -- it may come to me, but

18 I don't remember the author.

19 Q. Turn to page 34 of your report,

20 Footnote 37.

21 A. Sure.

22 Q. See if that refreshes your memory.

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1 A. **Footnote 37?**  
2 Q. Footnote 37. I think the last entry in  
3 that is a cite to "The Econometric Analysis of  
4 Seasonal Time Series" by -- I think it's  
5 pronounced Ghysels.  
6 A. **No, these aren't the books I'm talking**  
7 **about. The book I'm thinking of is -- I just**  
8 **don't remember. It's an undergraduate time series**  
9 **econometrics text, and I just don't remember the**  
10 **talk, the name.**  
11 Q. Now, in Footnote 37 you also cite the  
12 Davidson and MacKinnon "Economic Theory and  
13 Methods."  
14 A. **Yes.**  
15 Q. Is that a textbook?  
16 A. **Yes.**  
17 Q. Is that also a systematic exposition  
18 and argument in writing regarding econometric  
19 principles, methods and applications?  
20 A. **Yes.**  
21 Q. Does that also include a methodical  
22 discussion of the facts and principles involved

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1 and conclusions reached in the book?  
2 A. **Yes.**  
3 Q. And is that written primarily for  
4 economists and econometric professionals and  
5 students?  
6 A. **Yes.**  
7 Q. And is that subject to scrutiny and  
8 exposure for inaccuracy with the reputation of the  
9 writer at stake?  
10 A. **I would say that those questions apply**  
11 **with yeses to all the materials I've cited.**  
12 Q. Okay.  
13 A. **But yes.**  
14 Q. Why did you cite -- Do you use  
15 "Economic Theory and Methods" in your course?  
16 A. **No.**  
17 Q. Why did you happen to cite that  
18 particular book for this reference?  
19 A. **Because it has an elementary discussion**  
20 **of seasonality and the creation of dummy variables**  
21 **done in a particular way for seasonality**  
22 **correction.**

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1 Q. Just while we're on this topic, and  
2 then I'll move on. Are you familiar with the text  
3 "Applied Statistics for Business and Economics" by  
4 Alan Webster?  
5 A. **No.**  
6 MR. HICKOX: Do you want to take a  
7 break now? It's about an hour in. I'll keep  
8 going.  
9 MR. JONES: That's fine.  
10 MR. HICKOX: Do you need a break?  
11 THE WITNESS: I'll be good for a little  
12 bit longer.  
13 MR. HICKOX: Okay. Let's go. We're  
14 actually making good progress.  
15 THE WITNESS: That's comforting.  
16 BY MR. HICKOX:  
17 Q. I don't think this is actually talked  
18 about in your first deposition. To the extent it  
19 was, I apologize for repeating a little bit, but I  
20 want to talk a little bit about just elementary  
21 econometrics and statistics.  
22 A. **Why not.**

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1 Q. You and I and Malachi may know all  
2 about the subject, but I want to get some stuff  
3 for the jury and make sure that they understand.  
4 You mentioned in your report that  
5 you're using multivariate regression. Am I  
6 correct?  
7 A. **Yes.**  
8 Q. Is that the same thing as multiple  
9 regression, or is it two different things?  
10 A. **I think both terms are used for the**  
11 **same thing.**  
12 Q. Okay. And what is multivariate or  
13 multiple regression?  
14 A. **Multivariate regression is the**  
15 **generalization of the regression technique to use**  
16 **more than one factor. So it helps to start with**  
17 **the non-multiple regression case to understand**  
18 **what multiple regression is. So I could do that**  
19 **if you like.**  
20 Q. Yes, please.  
21 A. **Okay. So imagine --**  
22 Q. Can I stop you for a second? When you

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1 say the "non-multiple regression case," what would  
2 that be described as? What's the term that  
3 describes that? Linear regression?  
4 A. No. They're all linear regressions.  
5 This would be, say, the two-variable regression  
6 model, it's called.  
7 Q. Okay.  
8 A. So if you imagine a graph of one  
9 phenomenon versus another, you might plot on one  
10 axis one variable and on the other axis another  
11 variable. So just to give an example that's  
12 concrete, we might think about the heights and  
13 weights of children.  
14 Q. Uh-huh.  
15 A. And we might collect data on children  
16 of different ages and how tall they are. And on  
17 one axis we might put, let's say, in inches or in  
18 feet how tall the child is. And then we would  
19 represent by a dot a point with respect to the  
20 other axis how much they weigh.  
21 So we can imagine doing a graph. Excel  
22 would do such a graph. And common sense would

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1 tell us that as a person gets older, they weigh  
2 more. Kids get bigger. They start being little  
3 things that don't weigh very much, and they get  
4 longer and they start weighing more.  
5 And so if you plotted that data, it  
6 would look like a cluster of points -- I'll draw  
7 it with respect to the camera, I guess -- with  
8 weights on one axis and heights here, the points  
9 that would be -- I'm doing this backwards. It's a  
10 little hard, but the points would tend to cluster  
11 in an upward direction like this (indicating). As  
12 someone gets -- as the child gets longer, they  
13 become heavier. Okay?  
14 And we might be interested in finding  
15 out if there is a systemic relationship between  
16 those two factors and quantifying it into a  
17 formula. And the two-variable regression  
18 technique would allow us to put a line through  
19 those data points that would best fit that data or  
20 summarize it to find out for every increment in  
21 height how much of an increment in weight we  
22 expect.

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1 And such graphs and summaries are  
2 distilled into formulas, and then those formulas  
3 are given to doctors, pediatricians, so that a  
4 pediatrician can, upon examining a new child, a  
5 new patient, say to a parent, "For your child's  
6 height, he's at present underweight," or "He's at  
7 present overweight," et cetera. And so that may  
8 be a piece of information that a parent would want  
9 to know.  
10 If we were only examining the height  
11 variable, we might share another piece of  
12 information with the parent which is, "Your child  
13 is in the 95th percentile for height," meaning  
14 he's exceptionally tall for his age. So we might  
15 have another graph which is age versus height.  
16 But what I'm talking about right now is height  
17 versus weight.  
18 So for a person of a given stature, or  
19 a child of a given stature, how much does that  
20 child weigh? And the regression technique is  
21 determining the average -- essentially the average  
22 weight for a given height.

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1 Now, you might immediately say, "well,  
2 where did you get the data for this?"  
3 And I say, "Well, you get it from  
4 collecting it from lots of individuals, children."  
5 And then you might say right off the  
6 bat, "Well, aren't boys and girls different?  
7 Don't girls sort of top out at a different height  
8 than boys do, and doesn't puberty matter, and all  
9 that sort of thing? Doesn't age matter, et  
10 cetera?"  
11 And the answer is "Yes."  
12 And when we want to adjust the data or  
13 bring into account other factors that would  
14 possibly distort the relationship between the  
15 height and weight of a child, we go to multiple or  
16 multivariate regression.  
17 So, for instance, we might introduce  
18 another factor for the sex of the child and we  
19 might discover that, in fact, what looked like one  
20 cluster of points between height and weight was  
21 actually two clusters that were parallel, one for  
22 boys and one for girls. Girls typically weigh,

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1 **for a given height, maybe -- something different**  
2 **than boys do.**  
3 Q. Let me ask a question just in the  
4 middle of that. So in multivariate regression,  
5 isn't it true we talk about dependent variables  
6 and independent variables?  
7 A. **You do.**  
8 Q. And in the example you just gave for  
9 multivariate regression, what would be the  
10 dependent variable and what would be the  
11 independent variable?  
12 A. **As I described it, the dependent**  
13 **variable there could be the weight of the child,**  
14 **and the independent factor would be the height of**  
15 **the child.**  
16 Q. Does the difference between the  
17 dependent variable and the independent variables  
18 make any difference as to what you're trying to  
19 explain or predict in your model?  
20 A. **Well, as a mechanical matter, the**  
21 **answer is really no, but -- In other words, I can**  
22 **contemplate in that example reversing the axes.**

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1 **I'm smart enough to translate from one to the**  
2 **other, and so is the computer.**  
3 **But as a practical matter we typically**  
4 **think of the thing we're trying to explain, which**  
5 **is the dependent factor -- in this case it was the**  
6 **sales of villas at the Ritz-Carlton in Bali -- and**  
7 **a set of independent factors which are factors**  
8 **which help possibly explain that dependent**  
9 **variable.**  
10 Q. So just so I make sure I understand,  
11 and for the jury too, so a dependent variable is  
12 you're trying to explain the actions of the  
13 independent variables on the dependent variable?  
14 Am I saying that right?  
15 A. **That's close enough.**  
16 Q. Or you're trying to explain what the  
17 independent variables -- what effect they have on  
18 the dependent variable?  
19 A. **Correct, if they have an effect.**  
20 Q. If they have an effect, and if they do,  
21 what that is?  
22 A. **And we're trying to also explain -- it**

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1 gets -- You know, I teach six quarters on this  
2 topic, which is two years of college-level  
3 material. But in its essence you've characterized  
4 it right. And we also try to explain the  
5 precision by which we understand the relationship.  
6 So in other words, we're going to say  
7 is the relationship between height and weight of a  
8 child a series of points that's tightly clustered  
9 around that line? Does the line do a very good  
10 job of explaining all the information? Or is  
11 there a great dispersion, like we've missed a  
12 factor? Or is there a pattern to the residuals  
13 that would suggest we've missed a factor?  
14 The regression technique also  
15 identifies statistical significance of a  
16 coefficient which allows us to say with  
17 statistical certainty is a coefficient -- does it  
18 have an effect which is different from zero, for  
19 instance.  
20 Q. So you're seeking to explain not only  
21 to -- Well, you're seeking to find out not only  
22 how the independent variables may impact on the

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1 dependent variable but also which of those  
2 independent variables impacts the most, how you  
3 separate them out, and which are statistically  
4 significant and which aren't?  
5 A. **Yes. All those -- All those things are**  
6 **possible with a regression, that's correct.**  
7 Q. Now, we've talked about the word  
8 "explain." It's true that also sometimes you use  
9 regression, multivariate regression to predict  
10 also, correct, forecasts?  
11 A. **Yes. You can -- In the example I gave,**  
12 **once we've calibrated or fit a model, we can use**  
13 **it to make a prediction with respect to a new**  
14 **case. So a new child walks into the doctor's**  
15 **office and the first thing the doctor does is say,**  
16 **"Stand up against the wall, I want to get your**  
17 **height." And then they put it into the formula or**  
18 **they look -- usually in a pediatrician's office,**  
19 **from my experience, they look on a chart which has**  
20 **that line I'm talking about and a confidence band**  
21 **around it, and the doctor says, "You know, for**  
22 **your height, Mom, Dad, your child is -- you know,**

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1 **doesn't weigh what they should weigh."**  
2 Q. Am I right in saying that prediction is  
3 a prediction about the dependent variable?  
4 A. Yes.  
5 Q. Did you do both in your supplemental  
6 report? Did you do both -- Did you have both  
7 explanatory statements that you may use in your  
8 regression models as well as the predictive  
9 statements that you may use in your regression  
10 models?  
11 A. **That question I don't understand.**  
12 Q. Okay. Well, did you use your  
13 regression models in your supplemental expert  
14 report to both explain the things you were talking  
15 about and to make predictions about what they  
16 would mean with regard to the Ritz-Carlton villa  
17 capacities?  
18 A. **Yes, I used the regression models for**  
19 **demand for villas to both understand what factors**  
20 **attract or help explain the historical pattern of**  
21 **villas sold, and I also used the regression model**  
22 **for forecasting purposes or prediction, if you**

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1 **like, for the future. The future with respect to**  
2 **a given time period.**  
3 Q. I think if we -- Are there any other  
4 purposes or uses that you would use for  
5 multivariate regression?  
6 A. **Countless.**  
7 Q. Well, let me strike that.  
8 We've talked about explanation and  
9 predict -- forecasting. In general, are there  
10 any -- You know, are there any other uses or  
11 purposes for multivariate regression?  
12 A. **I mean, at the elementary level, I**  
13 **guess my answer might be no. I would certainly**  
14 **include hypothesis testing as an elementary**  
15 **component of regression analysis.**  
16 **So, for instance, a sociologist, a**  
17 **psychologist, an economist, a physical scientist**  
18 **would want to test a theory. So they would**  
19 **postulate the theory, and the theory might be some**  
20 **factor has an influence on this phenomenon we're**  
21 **trying to explain, controlling for other factors,**  
22 **and we're going to test whether that factor has**

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1 **influence or not, statistical influence.**  
2 **But there are more advanced reasons to**  
3 **do regressions that I don't think you want me to**  
4 **get into.**  
5 Q. Did you use -- Did you use any of those  
6 reasons in your report? You used regression  
7 analysis in your multivariate regression in your  
8 report to both explain and forecast?  
9 A. **That's correct, yes.**  
10 Q. Anything else that you used it for?  
11 A. **No, I don't think so.**  
12 Q. What is R squared? You call it R2.  
13 A. **It's an R squared. You had it right**  
14 **the first time. It's the square of the R.**  
15 Q. What is the R, then, and why does it  
16 need to be squared, and what's the purpose of  
17 that?  
18 A. **Okay. The R squared is the proportion**  
19 **of the variation in the dependent variable that is**  
20 **explained using the independent variable or**  
21 **variables. So in the example I gave before with**  
22 **the heights and weights of children, if the data**

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1 **points cluster tightly around a line, then the**  
2 **variation would be well explained by the one**  
3 **factor, which is the height of the child, the**  
4 **variation, and the dependent variable which was**  
5 **the weight of the child.**  
6 **On the other hand, if there was**  
7 **significant dispersion, a cloud of points and a**  
8 **line through them, but the cloud of points around**  
9 **that line showed big dispersion, meaning that they**  
10 **didn't cluster tightly around the line, then other**  
11 **factors would be at work.**  
12 **So a good example of that is the**  
13 **ability of economists sort of to predict phenomena**  
14 **like who is going to buy chocolate versus vanilla**  
15 **ice cream. Regression techniques tend not to make**  
16 **very good predictions about that. We do better in**  
17 **some categories of thinking than we do in others,**  
18 **or in some categories of demand than others.**  
19 **And hotel demand is very amenable to**  
20 **regression techniques. Ice cream preference is**  
21 **somewhat less amenable.**  
22 Q. Why?

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1 A. Because the idiosyncratic variation,  
2 meaning the errors, the preferences of  
3 individuals, are nonmeasurable. So the idea of  
4 the regression analysis is to associate with the  
5 dependent variable a set of factors which have a  
6 theoretical or logical connection to the dependent  
7 variable.  
8 Ice cream preference is really  
9 difficult to come up with a lot of variables that  
10 would explain why someone would pick vanilla over  
11 chocolate.  
12 Q. In layman's terms what does R squared  
13 express?  
14 A. It expresses as a percentage between  
15 zero and a hundred, like all percentages. And  
16 that's part of the reason why it's R squared. The  
17 squaring causes the correlation coefficient, the  
18 R, to be a positive number. And percentages are  
19 always positive.  
20 It's the percentage of the variation --  
21 In my example, in the heights of the children --  
22 that would be explained by the independent

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1 variable -- sorry. The percentage of the  
2 variation in the weights of the children explained  
3 by their heights.  
4 So, for instance, when I say variation,  
5 if everybody in the world were exactly -- if every  
6 child was exactly the same weight, 50 pounds,  
7 there would be nothing for us to do. Okay? We  
8 would say, "It's a child that's 50 pounds."  
9 But as I look out in the world, and as  
10 you look -- you have children, I have children,  
11 and we've all had children. Kids weigh different  
12 amounts. And what we're trying to do with a  
13 regression analysis by controlling for certain  
14 factors is to find factors that well associate  
15 with that weight.  
16 And so for height, if we find, for  
17 instance, that height explains 75 percent of the  
18 variation, then that factor tells us that we've  
19 got a good explanation for what's driving the  
20 height of the child.  
21 Q. The higher R squared the better?  
22 A. No, not necessarily.

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1 Q. Okay. Why not?  
2 A. Because -- There's really a couple of  
3 reasons. One is that I can make an R squared of a  
4 regression model as high as I want it artificially  
5 by including variables or explanations that have  
6 nothing to do logically with the problem at hand.  
7 This is a little technical, but I can make an R  
8 squared of any regression model as close to one as  
9 I want by including any old factors I want.  
10 If it were children, I could take the  
11 parents' income, I could take the number of cars  
12 they've got, I could take sunspot activity on the  
13 day the kid's weight was taken. Anything I want I  
14 could add to a regression model and the R squared  
15 will go up, because the computer can use the  
16 information some way to find a better fit.  
17 Unfortunately, the factors would be statistically  
18 insignificant, but the R squared would still rise.  
19 And so there is the concept of adjusted  
20 R squared which penalizes the analyst for  
21 including factors which should not be included,  
22 i.e., the R squared did not rise by enough to

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1 compensate for the lack of statistical  
2 significance of the additional factor.  
3 Q. So you can inflate R squared by adding  
4 in independent variables that really have no  
5 statistically significant impact on your dependent  
6 variable?  
7 A. That's an "A" answer.  
8 Q. Let me try for the "A" plus.  
9 A. Okay.  
10 Q. Is the statistical significance of any  
11 independent variable measured by the T stat?  
12 A. The T statistic is one way to measure  
13 the statistical significance of a variable.  
14 That's a particular test of a significance. It's  
15 a standard error that actually gives the  
16 statistical significance of the variable.  
17 Q. What are some of the other tests for  
18 statistical significance of an independent  
19 variable?  
20 A. You can use an F test. You can use  
21 something called a Chow test. There are various  
22 forms that turn out to be equivalent.

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1 But a T test is a particular test for  
2 whether a coefficient is different from zero. I  
3 don't always care about whether a coefficient is  
4 different from zero. I might want to know whether  
5 it's different from some other number or different  
6 from something else.

7 Q. When you use a T test, what's the  
8 number that it has to be above in absolute value  
9 for it to be statistically significant?

10 A. Well, that language is a little  
11 imprecise, but for something called a two-sided  
12 confidence test, significance test, meaning that  
13 I'm trying to compare a coefficient and I don't  
14 know whether it's going to be positive or negative  
15 a priori, meaning ahead of time, then I would tend  
16 to use, for large numbers of observations, 1.96 or  
17 approximately 2 in absolute value for the level of  
18 statistical significance, at which point I might  
19 reject the hypothesis that a coefficient is the  
20 same as zero.

21 Q. When we speak of absolute value, does  
22 that mean it just doesn't matter if the number is

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1 negative or positive?

2 A. Correct.

3 Incidentally, I was about to give a  
4 second reason for why R squareds are not  
5 necessarily better.

6 Q. Okay.

7 A. They're higher. And you didn't circle  
8 back to it, so I'm just --

9 Q. Well, I was.

10 A. You were going to get there.

11 Q. Because you said two. I don't know if  
12 you remember that. You said there were two  
13 reasons.

14 A. I know. But I didn't get to talk about  
15 the second.

16 Q. Okay. What was the second reason?

17 A. The second is -- and we touched on it a  
18 little bit -- in a -- in a correctly specified  
19 model, the R squared is going to be whatever it  
20 is. In other words, R squareds can be different  
21 just by the nature of the phenomena that we are  
22 studying.

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1 I've published many papers where the R  
2 squares were lower and others were higher. Time  
3 series data, data that tracks over time, one  
4 phenomenon against another tend to have somewhat  
5 higher R squareds.

6 Cross-sectional data, meaning studies  
7 of lots of individuals where there is  
8 idiosyncratic variations between people,  
9 variations amongst the people, tend to have  
10 lowered R squareds.

11 So again, it's not -- it's not  
12 something that we try to do to maximize the R  
13 squared, and bigger is not better.

14 Q. What are some of the tests that one can  
15 use to evaluate a multivariate regression model?

16 A. Well, there are many.

17 Q. So I can focus a little bit, what about  
18 the standard error of estimate? Is that a test?

19 A. The standard error of the estimate of a  
20 coefficient is a test -- is a measure of how  
21 precise a coefficient was determined by the model.

22 Q. And when you say "coefficient," what do

80

1 you mean?

2 A. Coefficient is the unknown marginal  
3 amount by which a factor influences the dependent  
4 variable, controlling for other factors.

5 So, for instance, in my example again  
6 of heights and weights of children, I don't have  
7 any data to do the regression in my head right  
8 here, but we might find, for instance, that  
9 heights go up by some multiple -- sorry, weights  
10 go up by some multiple the height of the child.  
11 And the question is: How much is that multiple?

12 And we're actually interested in a  
13 numerical amount. Is it a factor of two? Is  
14 it -- Does it go up by three times? What's the  
15 formula? What's the factor that makes the -- that  
16 relates the units of the height of the child to  
17 their weight?

18 There is a translation between units  
19 like translating between -- A good example would  
20 be we know that there is a translation between  
21 dollars and yen called the exchange rate. And we  
22 may forget what that relationship is exactly, but

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1 we could get some dollar prices that have occurred  
2 over time and some yen prices and run a regression  
3 between them to discover that coefficient. Of  
4 course, that one changes over time.  
5 A better example would be centigrade  
6 and Fahrenheit. You take nine-fifths of the  
7 Celsius measurement and add 32 to get to  
8 Fahrenheit. And the pilots do this in their heads  
9 when we're on the plane. Okay? But you may  
10 forget, or someone might have forgotten, well, how  
11 did that formula come about? And one thing you  
12 could do is have a thermometer that measures in  
13 Fahrenheit and in Celsius and take different  
14 measurements on different days and plot those  
15 Fahrenheit and Celsius and run a regression  
16 between the two.  
17 And that regression would find two  
18 factors. An intercept, which would be 32, and a  
19 slope which would be nine-fifths.  
20 Q. And so how does the standard error of  
21 the estimate of the coefficient tell you whether  
22 or not the multivariate regression model is, you

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1 know, explaining or predicting what it's supposed  
2 to as opposed to having problems?  
3 A. Standard errors measure the statistical  
4 significance of these coefficients, so it's how  
5 precisely we determine the coefficient. And the  
6 coefficient in my example was the multiple or the  
7 nine-fifths.  
8 And standard errors that are very large  
9 relative to the coefficient are consistent with a  
10 wide range of outcomes. So effectively the  
11 picture is a bell-shaped curve where the point  
12 estimate is what the regression says is our best  
13 estimate of the coefficient with a dispersion in  
14 sort of a bell shape around that coefficient of  
15 possible values.  
16 And then the statistician can say,  
17 according to normal distribution theory, that  
18 there is a certain probability that the  
19 coefficient is within certain bounds.  
20 Now, if the standard error is very  
21 large, then one would say, "I have a 95 percent  
22 confidence that the coefficient could be minus a

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1 thousand to plus a thousand." Not very precise.  
2 But if the standard error is very  
3 small, you could say, or a statistician would say  
4 there is a 95 percent confidence that that  
5 nine-fifths I determined was nine-fifths and --  
6 nine-fifths minus a very small amount or  
7 nine-fifths plus a very small amount.  
8 In fact, I would expect with 95 percent  
9 certainty that I could tell you that we would get  
10 nine-fifths almost on the nose.  
11 Q. What about the analysis -- the analysis  
12 of variance? What does that mean, and how is that  
13 used to evaluate multivariate regression models?  
14 A. Analysis of variance in the context of  
15 regression is the decomposition of the total sum  
16 of squares, which is the variation in the  
17 dependent variable and the variances by the --  
18 explained by the independent factors.  
19 Q. And can you put that in layman's terms?  
20 A. It's just another way of approaching --  
21 It's related to the R squared. It's another way  
22 of approaching how much variation there is in the

84

1 factor we're trying to explain and how much of  
2 that variation is explained by the independent  
3 factors.  
4 Q. So it's a test with regard to the  
5 explanatory value of the model?  
6 A. Yes.  
7 Q. Okay. Is the same as -- What about the  
8 F test, is that the same thing, or is it something  
9 slightly different?  
10 A. An F test is a test related to whether  
11 all the factors are jointly helping explain  
12 something in the model relative to a simple  
13 constant.  
14 Let me try this differently. If I  
15 could not find a factor to explain the weights of  
16 children, I could always say, "Well, my best  
17 prediction of the weight of a child is the average  
18 weight of children in the population." That would  
19 be an R squared of zero.  
20 So as a threshold matter, if you  
21 haven't explained anything, you always can use the  
22 average as the best guess. And the answer to that

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1 is R squared of zero. You didn't do too good  
2 because you just used the average.  
3 If you can get the R squared at the  
4 other end for a given model -- The figure is  
5 better with respect to a given model as long as  
6 the factors make sense and they're statistically  
7 significant and consistent with economic theory  
8 and so forth.  
9 If you can get towards the other end of  
10 the thing, the other end of the range, 100 percent  
11 or high, you've done a good job with your data of  
12 explaining the factors -- the factor that you're  
13 trying to explain.  
14 Q. So when you're using an F test, how do  
15 you -- how would one determine that the F test  
16 means that your regression model has good  
17 explanatory or predictive value?  
18 A. Let's say you're doing a multivariate  
19 regression and you have a set of ten variables.  
20 And you might look at them individually and say,  
21 "Is variable No. 1, did it have any influence on  
22 the dependent variable?"

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1 And according to its standard error,  
2 that probability distribution would include zero.  
3 So as a statistician I wouldn't be able to say  
4 that that factor had an influence on the dependent  
5 variable.  
6 If all the additional factors failed to  
7 have influence on the dependent variable, like  
8 you're a real bad analyst because you picked a  
9 bunch of factors that helped not at all explain  
10 the dependent variable, then the F test would  
11 essentially tell you what's the likelihood of the  
12 joint probability that all the factors are  
13 statistically different from zero or not different  
14 from zero.  
15 MR. HICKOX: This is a good time to  
16 take a break.  
17 MR. JONES: All right.  
18 THE VIDEOGRAPHER: We are going off the  
19 record. The time is 10:29 a.m.  
20 (A recess was then taken.)  
21 THE VIDEOGRAPHER: We are back on the  
22 record. The time is 10:40 a.m.

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1 BY MR. HICKOX:  
2 Q. Mr. Dubin, or Professor Dubin, I have a  
3 few more questions that will wrap up our basic  
4 statistics course today.  
5 What is the relevance of the  
6 term "degrees of freedom"?  
7 A. Degrees of freedom is a concept of the  
8 number of observations used in a model.  
9 Observations are the sample points that we collect  
10 and analyze less the number of coefficients that  
11 we've estimated.  
12 Q. And what is their significance? What  
13 is the significance of that term? I mean, are  
14 greater degrees of freedom better or worse, or is  
15 that not the way you look at it?  
16 A. Well, we want progressions to be  
17 parsimonious, meaning that we would like to have a  
18 lot of bang for the buck. We would like to be  
19 able to explain a lot of information using  
20 relatively few factors if it's possible.  
21 And degrees of freedom limits the  
22 abilities in some cases to do certain types of

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1 analyses, meaning that we may only have one or two  
2 data points, so we can't bring into account a lot  
3 of information.  
4 For example, the space shuttle had not  
5 blasted off very often on cold days, so  
6 the degrees of freedom for engineers to study the  
7 relationship between cold and the elastic joints  
8 in the solid rocket boosters was limited, and  
9 therefore the confidence they were able to attach  
10 to their model of that phenomena was limited and  
11 the shuttle blew up.  
12 A lot of information, a lot of degrees  
13 of freedom, a lot of observations, all things the  
14 same, would be preferable. But it's just a  
15 matter of what the data provides to you. So if  
16 you have data for a certain period of time, that's  
17 what it is.  
18 Q. If you could turn to your report. And  
19 can you please state for the jury the opinions  
20 you're offering in your supplemental expert  
21 report.  
22 A. I don't know that I can do that better

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1 than the report itself does, but I can try to  
2 summarize some of those opinions. But I wouldn't  
3 want to limit the opinions I've got, because  
4 that's what the purpose of writing the report is.  
5 Q. Okay.  
6 A. The report generally says that when I  
7 did a -- when I collected data from 2000  
8 through 2007 on the sales of villas at the  
9 Ritz-Carlton in Bali, and I did a multivariate  
10 regression analysis with a set of factors that  
11 economic theory would tell me should be related to  
12 demand for villas, and I calibrated a regression  
13 model, I found a very high correlation between the  
14 factors that I identified and demand for villas.  
15 Indeed, accounting for a small set of  
16 factors, I was able to explain 95 percent of the  
17 historical variation in the demand for villas with  
18 the factors that I identified, which is an  
19 extremely high R squared for regression models, in  
20 my experience.  
21 Additionally, the data that I collected  
22 provided statistical significance for the

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1 underlying factors in the cases where I expected  
2 it to. I then used that model to make a  
3 prediction or a forecast of what the likely sales  
4 for the Ritz-Carlton villas would have been in the  
5 period from October 2006 through I think it's June  
6 or July of 2007.  
7 And I picked that experiment because  
8 that was a time period where the Bulgari Bali, the  
9 Bali Bulgari hotel was not yet in operation. So I  
10 used the data prior to that period to estimate the  
11 regression model, and then I asked of the  
12 regression model what would the model forecast for  
13 the next nine months.  
14 And that experiment, in a sense, allows  
15 me to say what experience would we have expected  
16 at the Ritz-Carlton for demand for their villas  
17 absent the Bulgari hotel. And when I did that, I  
18 found that the actual data, in other words, the  
19 actual revenues and sales of rooms, villas, was  
20 nearly identical to what I predicted that it would  
21 be. There was no statistical difference.  
22 And had there been a statistical

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1 difference, that would be a measure of impact or  
2 injury on the Ritz-Carlton, possibly due to the  
3 Bulgari hotel.  
4 So the conclusion I reach from that  
5 analysis, in summary, was that there was no  
6 statistically significant or measurable impact of  
7 the Bulgari on the performance at the Ritz-Carlton  
8 in terms of villas sold.  
9 The balance of my report was a  
10 critique, a detailed critique, of Mr. Owsley's  
11 work in this case. And Mr. Owsley tendered a  
12 statistical analysis based on a much shorter time  
13 period than I used, based on very few factors, in  
14 a sense too few factors. And I criticized  
15 Mr. Owsley's regression model which was not able  
16 to explain much of the historical variation in  
17 demand for villas.  
18 I pointed out the failings in his model  
19 for missing important statistical factors,  
20 including capacity changes that had occurred over  
21 time at the Ritz-Carlton.  
22 I made adjustments to his model to

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1 include factors for capacity changes and  
2 seasonality and approached his model from a  
3 variety of different perspectives and alterations  
4 and came to the conclusion that he had made some  
5 serious statistical errors, basic statistical  
6 errors in his analysis, and that having adjusted  
7 his models to correct those errors, he would find  
8 that there was no actual impact of the Bulgari  
9 hotel on the Ritz-Carlton.  
10 Q. And the serious basic statistical  
11 errors were?  
12 A. Well, one of them was a failure to  
13 account for changes in capacity at the hotel.  
14 There were others I discuss about alterations of  
15 the underlying data to improperly restate  
16 something called revpars and occupancies to levels  
17 that didn't actually occur in nature.  
18 Another was to not include corrections  
19 for seasonality in his model. To not use the  
20 available data that was usable in this case to fit  
21 his models. To not do statistical tests for the  
22 significance of the damages that he calculated

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1 from his regression model. To not use functional  
2 forms that were internally consistent. To not  
3 adopt empirical specifications that obeyed  
4 economic theory.  
5 I mean, I go on and on for what is it,  
6 50, 60 pages on what's wrong with the Owsley  
7 model.  
8 Q. "Did not adopt empirical specifications  
9 that obeyed economic theory." Can you elaborate  
10 on that?  
11 A. Sure. I said in the report that these  
12 are models of economic demand, and consumer theory  
13 would tell us that a linear specification saying  
14 that the factors are linearly related to one  
15 another is not consistent with economic theory.  
16 Instead, so-called logarithmic forms are  
17 consistent with economic theory.  
18 Q. Why aren't linear specifications  
19 consistent with economic theory?  
20 A. It's a -- It's a set of theorems that  
21 are produced in the book by Deaton and Muellbauer  
22 on consumer demand theory which say that linear

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1 specifications are inconsistent with the behavior  
2 of rational economic consumers. As a practical  
3 matter, they might fit okay, but they are  
4 inconsistent with economic theory.  
5 Q. And why is that?  
6 A. Because mathematically a demand  
7 function must obey a set of properties, including  
8 things like homogeneity of prices, meaning that if  
9 all prices are increased by a given level in real  
10 terms, the demand remains the same.  
11 There is something called the adding up  
12 theorem. A variety of technical theorems. And  
13 linear models cannot capture those properties of  
14 economic theory.  
15 Q. Never?  
16 A. Never.  
17 Q. And you used a log linear specification  
18 in your analyses?  
19 A. Correct.  
20 Q. Was it log linear or log log?  
21 A. The nomenclature, it's like two  
22 variable -- it's like multiple variable and

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1 multivariate regression. They're both used  
2 interchangeably.  
3 Q. But to be more specific, you used  
4 logarithmic transformations for both your  
5 dependent and independent variables?  
6 A. That's actually not correct.  
7 Q. Okay. So which logarithmic  
8 transformations did you use, which variable?  
9 A. I used logarithmic transformations of  
10 some of the independent factors but not all of  
11 them.  
12 Q. Why did you only use logarithmic  
13 transformations on some independent variables and  
14 not all of them?  
15 A. Well, because certain variables called  
16 dummy variables take on the value of one and zero,  
17 and those are called indicator variables. And the  
18 logarithm, which is a mathematical transformation  
19 of a data point, cannot be mathematically taken of  
20 zero.  
21 Q. So you only didn't apply logarithmic  
22 transformations to dummy independent variables.

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1 Were there other independent variables that  
2 weren't dummy variables that you did not apply  
3 logarithmic transformations to?  
4 A. Well, there's ten models presented in  
5 my report. I also ran a linear specification. In  
6 the linear specification I don't think I do log  
7 transformations in any variable.  
8 Q. Of course.  
9 A. Okay. And trend is another variable  
10 that's continuous. It's not a discrete variable  
11 that I did not apply a logarithmic transformation  
12 to.  
13 Q. Any other variable?  
14 A. No.  
15 Q. Independent variable, we're talking  
16 about.  
17 A. Correct.  
18 Q. What is the trend variable?  
19 A. Trend is a variable which is  
20 constructed by the analyst that is kind of like a  
21 dummy variable. It's a variable that we construct  
22 which rises continuously with time. So in a time

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1 series context, it would be a factor which is a  
2 straight line. And I call it -- I say it's like a  
3 dummy variable because it's a constructed  
4 variable. It's not like something we've measured.  
5 It's a variable that's constructed and added to a  
6 model.  
7 Q. Now, for other than your opinions with  
8 regard to the critique of Mr. Owsley's report, and  
9 so -- and you generally grouped your opinions into  
10 three categories, correct?  
11 You made a -- You have an opinion with  
12 regard to the statistical significance of the  
13 opening of the Bulgari Bali and its impact on the  
14 Ritz-Carlton villas, right?  
15 A. That's correct.  
16 Q. And then you also made a forecasting --  
17 you have an opinion with regard to forecasting  
18 which forecasts that -- again, sort of the flip  
19 side of the same thing. There were no measurable  
20 damages in this case because you ran a model of  
21 predicted villa capacity with the Bulgari Bali,  
22 predicted without, and found that there was no

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1 significance? It came out to be about the same  
2 with the Bulgari Bali and without the Bulgari  
3 Bali?  
4 A. That articulation is not quite  
5 accurate, but I understand what you're trying to  
6 say.  
7 Q. For those first two opinions, do they  
8 rely on your ten regression models? Do you draw  
9 your opinions from the outcomes of your ten  
10 regression models?  
11 A. Yes. Well, I apologize. I have to say  
12 no to that, because my opinion about the lack of  
13 statistical significance or impact of the Bulgari  
14 hotel on the Ritz-Carlton is also achievable with  
15 respect to my analysis of the Owsley model. After  
16 corrected -- With corrections, the Owsley model  
17 says exactly the same thing, after I fix the  
18 errors in the Owsley model.  
19 Q. And when you talked about that you  
20 predicted that you can -- your R squared was  
21 95 percent with regard to several specific factors  
22 that account for the variation in villa capacity,

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1 or the variation of villas sold at Ritz-Carlton  
2 Bali --  
3 A. Yes.  
4 Q. -- were those factors the ones listed  
5 on page 54 of your report, the seven factors?  
6 A. That's the sum total of the factors  
7 that end up appearing in the final specifications,  
8 but along the way I tried a variety of other  
9 factors as well, and I talk about them.  
10 Q. But you mentioned that you explained --  
11 So when you stated that you were able to explain  
12 95 percent of the variation in villa demand at the  
13 Ritz-Carlton Bali with regard to factors other  
14 than Bulgari Bali, there were other factors  
15 besides those seven listed?  
16 A. No. In fact, these models are -- some  
17 of these final specifications are at 94 percent in  
18 so-called auto-regressive or other forms. I  
19 recall 95, 96 percent. I've been calling it 95,  
20 but it's actually about 94 percent. Still really  
21 big.  
22 Q. I mean, I don't know if you answered my

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1 question yet. At page 54 you state, "My model  
2 explains the villa demand is a function of," and  
3 you list seven factors.  
4 A. Correct.  
5 Q. That's your opinion?  
6 A. That's not my sole opinion.  
7 Q. Okay. But that's the opinion with  
8 regard to how villa demand is explained?  
9 A. Those factors are sufficient to explain  
10 94 percent of the historical demand for villas at  
11 the Ritz-Carlton in Bali.  
12 Q. Would there be any impact on your  
13 opinion or your analysis if any of those factors  
14 showed a low T stat in your models?  
15 A. Well, for instance, prices which I list  
16 among things that I looked at there, which do have  
17 low T stats in the final specifications, I dropped  
18 them. So I suppose the answer is yes.  
19 Q. And what would that impact be?  
20 A. Well, the impact was the conclusion I  
21 reached in the report, that in this model of  
22 derived demand, having control for visitors to the

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1 island by Japanese and non-Japanese individuals, I  
2 could not find significant price effects and  
3 therefore I dropped them from the final  
4 specifications.  
5 Q. But if it turned out that seasonality  
6 factors, trend factors, Ritz-Carlton competitor  
7 factors, average daily rates for the Ritz-Carlton  
8 also had low T stats, would that impact your  
9 opinion?  
10 A. No.  
11 Q. Why?  
12 A. Because there is no harm in leaving in  
13 a variable in a regression model that has a T  
14 statistic that's lower than two because its  
15 coefficient is essentially zero. So one can leave  
16 the variable in or drop it out. It's all a matter  
17 of choice.  
18 Q. But a low T stat generally means  
19 statistically insignificant? Are we agreed on  
20 that?  
21 A. Correct.  
22 Q. So you don't think it makes any

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1 difference to your statement that "My model  
2 explains the villa demand is a function of," for  
3 example, one among others, seasonality factors if  
4 it turns out that seasonality factors are  
5 statistically insignificant?  
6 A. Well, one always includes seasonality  
7 correction with respect to all 11 months of the  
8 year. Not every month has to have a coefficient  
9 which is different from zero for seasonality to be  
10 an important thing to have controlled for. So  
11 that's an example of a case where I left in  
12 seasonal corrections, as literature tells me to.  
13 And the fact that a coefficient turns  
14 out to have nonstatistical significance not  
15 different from zero for an individual month  
16 doesn't have any impact on anything I've done.  
17 Q. So it's your testimony that if four of  
18 these seven factors have low statistical  
19 significance, it doesn't impact on your statement  
20 that you can explain villa demand as a function of  
21 those factors?  
22 MR. JONES: Object to the form.

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1 BY MR. HICKOX:  
2 Q. Do you understand my question?  
3 A. I do.  
4 Q. What's your answer?  
5 A. Those are among a set of factors that I  
6 used to explain demand, and I dropped some that  
7 were insignificant and I left in others that were  
8 significant.  
9 Q. And you left in others that were still  
10 statistically insignificant?  
11 A. Yes, like seasonality. In some cases,  
12 some of the seasonal effects in certain ones were  
13 insignificant.  
14 Q. We earlier agreed that one of the  
15 impacts that leaving in statistically  
16 insignificant variables can have is to  
17 artificially inflate R squared, correct?  
18 A. It can a little bit.  
19 Q. Can you turn to page 45 of your report,  
20 please.  
21 A. Okay.  
22 Q. The first sentence right below the

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1 table. It says: "I conclude there is no  
2 evidence, based on Mr. Owsley's data, that the  
3 Bulgari Bali had any effect on the Ritz-Carlton."  
4 Do you see that?  
5 A. Yes.  
6 Q. That's one of your opinions?  
7 A. Yes.  
8 Q. What do you mean by, in this case,  
9 "Bulgari Bali effect"? I know you didn't say it  
10 that way, but what do you mean by the Bulgari Bali  
11 had no effect on the Ritz-Carlton? I just want to  
12 make sure. What do you mean by "effect"? What  
13 does that word represent?  
14 A. Effect is a -- What I mean by "effect"  
15 here is there was no difference in the actual  
16 sales at the Ritz-Carlton in villas due to the  
17 Bulgari Bali when tested a variety of different  
18 ways or done through forecasting.  
19 Q. And that's based on your regression  
20 models?  
21 A. Or his models after I fixed the  
22 problems in them, yes.

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1 Q. But it's based on your statistical  
2 analyses of either your data or Mr. Owsley's data?  
3 A. Yes.  
4 Q. Turn to page 27 of your report, please.  
5 Sorry we're skipping around.  
6 A. 27?  
7 Q. Yeah. I'm trying to actually stick to  
8 one topic at a time.  
9 A. Sure.  
10 Q. Again, at the top you state:  
11 "Meanwhile, there is no" -- and you underline  
12 "no," you emphasize "no" -- "no statistically  
13 significant Bulgari Bali effect measured in this  
14 regression model."  
15 You're speaking of Regression Model  
16 No. 5.  
17 A. Okay.  
18 Q. Is the term "Bulgari Bali effect," is  
19 that the same as we just talked about here? Is  
20 that what you mean by that?  
21 A. "Effect" means to me in this context  
22 that I'm talking about whether a dummy variable

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1 **for the presence of the hotel has a statistically**  
2 **significant effect.**  
3 Q. Of any of the ten models, are there any  
4 particular models that are more explanatory with  
5 regard to the Bulgari Bali effect than others?  
6 A. **I don't know exactly what that means.**  
7 Q. Okay. Well, let me rephrase that.  
8 Are all the models there for a reason,  
9 or is there one particular model that more so than  
10 others supports your hypothesis, supports your  
11 opinion?  
12 A. **They were all there for a reason.**  
13 Q. Is there any one particular model that  
14 supports your opinion with regard to Bulgari Bali  
15 effect more than others?  
16 A. **All ten of them support the opinion.**  
17 Q. Page 22, please.  
18 A. Okay.  
19 Q. I think it's the first full paragraph  
20 there. It starts out with, "The purpose of the  
21 regression analysis..." You state that "The  
22 purpose of the regression analysis is to determine

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1 the factors that affect occupancies and revpars  
2 and, thus, ultimately room nights sold and  
3 revenues as they develop from 2000 to the  
4 present."  
5 Did I read that correctly?  
6 A. Yes.  
7 Q. And that's referring to the  
8 Ritz-Carlton Bali, correct?  
9 A. Yes.  
10 Q. Is that a presumption -- Was that the  
11 purpose of each of your ten regression analyses?  
12 A. **The purpose of each of the ten**  
13 **regression analyses was to test in part in**  
14 **different ways how the presence of the Bulgari may**  
15 **have affected sales of the Ritz-Carlton. But the**  
16 **theme is the same, ultimately room nights sold and**  
17 **revenues at the Ritz-Carlton as they developed**  
18 **from 2000 to the present.**  
19 **And the other purpose of the regression**  
20 **analysis is to do a forecast, which I talk about**  
21 **in the next sentence.**  
22 Q. So in speaking of those two again, just

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1 to circle back a little bit so I understand,  
2 ultimately your conclusion was that there was no  
3 Bulgari Bali effect as we talked about before on  
4 the villa nights sold at the Ritz-Carlton?  
5 A. Correct.  
6 Q. And therefore concomitantly, so to  
7 speak, there was no measurable damages in this  
8 case by the opening and the operation of the  
9 Bulgari Bali?  
10 A. Correct.  
11 Q. And measurable damages being less villa  
12 nights sold?  
13 A. Well, in the end, as I talk about it's  
14 a matter of revenue, and Mr. Owsley's model, main  
15 damage model is a model of revenue. And in  
16 logarithmic form, revenue and occupancy and  
17 revpars and all that sort of stuff are identical.  
18 But room nights sold and revenues in this context  
19 are going to produce the same answer.  
20 Q. That's the only -- Either room nights  
21 sold or revenues are your only measure of damages  
22 that you're considering in your report?

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1 **A. In this supplemental report, yes.**  
2 **Q. Page 26 of your report, please. In the**  
3 **middle of the first complete paragraph there it**  
4 **starts out, "In Model 4..." This really may be**  
5 **the third sentence up from the bottom. You say,**  
6 **"Hence, I cannot" -- and again, "cannot" is**  
7 **emphasized -- "conclude that the Bulgari Bali is a**  
8 **substitute to the Ritz-Carlton."**  
9 **A. Uh-huh. Yes, I see that.**  
10 **Q. What do you mean by that sentence?**  
11 **A. Well, I'm looking at price effects**  
12 **there, sort of average daily rates charged. And**  
13 **demand theory tells us that generally that if the**  
14 **price of a good goes up, consumers will buy less**  
15 **of it, controlling for the prices of other things.**  
16 **On the other hand, if you were to -- if**  
17 **one is to include the price of a substitute**  
18 **product in a regression model, then its effect**  
19 **should be positive in a regression or demand**  
20 **analysis for it to be a substitute in the**  
21 **following economic sense.**  
22 **If the coefficient of a substitute good**

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1 **is positive, then as its price increases, its**  
2 **demand will fall, the substitute good. And**  
3 **because its demand is lower, the consumer takes**  
4 **their demand and puts it into the good in**  
5 **question, which is the substitute.**  
6 **So economists test for markets and the**  
7 **presence of whether one product is substituted for**  
8 **another by looking at price effects.**  
9 **Q. So that's what you mean by**  
10 **"substitute"?**  
11 **A. I mean economic substitute, yes.**  
12 **Substitute in demand.**  
13 **Q. Would you turn to page 16 of your**  
14 **report.**  
15 **A. 16.**  
16 **Q. Again, the first full paragraph that**  
17 **starts out with, "I observe..." The second -- I**  
18 **think it's really the third sentence in that**  
19 **paragraph. It says: "Of equal importance,**  
20 **Mr. Owsley's regression model for revenue makes no**  
21 **adjustment for the 75 percent increase in the**  
22 **revenue earning capacity of the hotel that took**

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1 **place between 2004 and 2005."**  
2 **When you refer to the hotel, you're**  
3 **referring to the Ritz-Carlton Bali, correct?**  
4 **A. That's the only hotel that was the**  
5 **dependent variable of the regression analysis,**  
6 **yeah.**  
7 **Q. No problem. I just want to be clear**  
8 **about that.**  
9 **And can you explain that statement?**  
10 **A. What I mean by that, and I went on**  
11 **about this at length, was that Mr. Owsley compared**  
12 **revenues through time starting in 2004, and what**  
13 **he did not do was make any adjustment for the fact**  
14 **that the hotel has experienced a 75 percent**  
15 **increase. 38, 37 cliff villas were added in**  
16 **late 2004 to the hotel, to the 48 that were**  
17 **already present, and the size of the hotel in**  
18 **terms of capacity underwent a dramatic increase.**  
19 **The day series that Mr. Owsley**  
20 **analyzed, when plotted, for instance, shows**  
21 **low 2004 revenues and higher 2005 and post**  
22 **revenues, but there is no adjustment for that.**

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1 **And when the data increases in a**  
2 **dramatic way like that, one should notice that**  
3 **there is a misspecification in the model. A**  
4 **residual analysis points to that. Logic points to**  
5 **that. Common sense points to that. Economic**  
6 **theory points to that.**  
7 **And it's important that a variable or**  
8 **control be added to the model to account for that**  
9 **important change between 2004 and 2005.**  
10 **Otherwise, every other variable is misspecified,**  
11 **and one can reach incorrect conclusions like**  
12 **Mr. Owsley did that the Bulgari two years later**  
13 **has an effect.**  
14 **A simple misspecification in 2004 of**  
15 **omitting a factor can lead to a misestimated**  
16 **Bulgari effect in the later periods.**  
17 **Q. So the misspecification you're speaking**  
18 **of is omitting that increased capacity?**  
19 **A. Or doing something to adjust for it,**  
20 **yes.**  
21 **Q. So either omitting it or failing to**  
22 **adjust for it?**

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1 **A. Correct. And there are a variety of**  
2 **ways that one could have adjusted for it, and I**  
3 **talk about those.**  
4 Q. And your testimony is that Mr. Owsley  
5 did neither?  
6 **A. In his model for revenue, he did**  
7 **neither.**  
8 Q. Did he do it at any time, either  
9 account for it or adjust for it?  
10 **A. No. He ran a revpar model, and the**  
11 **concept of revpar is revenue divided by capacity.**  
12 **But he made the mistake there of not adjusting**  
13 **the -- not accounting for the change in revpar.**  
14 **So the idea of using revpar would be to naturally**  
15 **make an adjustment for capacity.**  
16 **But having analyzed a revpar model,**  
17 **which is not an incorrect or nonsensical thing to**  
18 **do, one must still adjust for changes of capacity**  
19 **that occur at the hotel.**  
20 Q. Is it your testimony that these what  
21 you term mistakes are methodological mistakes or  
22 differences in opinion as to what the significance

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1 of the input should be?  
2 **A. Oh, these are definitely primitive,**  
3 **elementary, fundamental errors in methodology and**  
4 **lack of understanding of regression technique and**  
5 **analysis.**  
6 Q. And what is the fundamental lack of  
7 understanding of regression technique and  
8 analysis?  
9 **A. Well, I went into that at great length.**  
10 **One was -- and I mentioned some of the categories.**  
11 Q. No, but I -- I'm sorry, I don't mean to  
12 interrupt. I mean specifically as it relates to  
13 failing to correct for either -- account for or  
14 correct for the increase in capacity.  
15 **A. Well, let's see. Okay. It's the**  
16 **chapter in the book called "Omitted Variable**  
17 **Bias." It's leaving out an important factor and**  
18 **everything that that can do to a regression.**  
19 Q. So that's a methodological problem  
20 there, omitted variable bias?  
21 **A. That's one of them, yes. Omission of**  
22 **seasonality is another.**

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1 Q. Is that a methodological problem or a  
2 difference with regard to what the proper inputs  
3 are? Is it your testimony that methodologically  
4 you must account for seasonality variables?  
5 **A. As a professor of econometrics and**  
6 **economics, I'm telling you that adjusting for**  
7 **seasonality in times series data in the presence**  
8 **of strong seasonal components is not a matter of**  
9 **opinion. It's a matter of good practice or**  
10 **necessity.**  
11 Q. Can you turn to page 37 of your report.  
12 It actually starts -- It's more proper to say turn  
13 to page 36.  
14 **A. Okay.**  
15 Q. And it begins that paragraph beginning,  
16 "The second alteration..."  
17 **A. Yes.**  
18 Q. And you conclude that paragraph on  
19 page 37, and you state: "The manner in which  
20 these adjustments are made may be important given  
21 that RC villa customers pay up to three times the  
22 cost of an RC room when they are staying in an RC

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1 villa."  
2 Is that -- Why do you say "may be  
3 important"?  
4 **A. Because I didn't understand at the time**  
5 **I wrote this, and even today, exactly how the**  
6 **upgrade customers were identified and removed from**  
7 **the data that Mr. Owsley analyzed. And he doesn't**  
8 **understand it either, is my opinion.**  
9 Q. And what do you mean by that, exactly  
10 how they were --  
11 **A. Adjusted?**  
12 Q. Yeah. What do you want to understand?  
13 What would you prefer to understand that you don't  
14 understand?  
15 **A. Well, when someone tells me that they**  
16 **modify data or adjust it, or use modified data or**  
17 **adjusted data, I would like someone to tell me**  
18 **what the adjustment was.**  
19 **So in this case the issues are who is**  
20 **staying in the villas at the Ritz-Carlton, and are**  
21 **the revenues that we're analyzing the revenues of**  
22 **people who bought villa nights or are they people**

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1 that were upsold from the hotel or upgraded from  
2 the hotel, and does that affect the prices they're  
3 paying, et cetera?  
4 And if the hotel is tracking the  
5 revenues in the villas and then the analyst  
6 chooses to remove the upgraded customers, that's  
7 an affirmative choice. It's a methodological  
8 choice. And I would think that one would want to  
9 understand if that's the appropriate choice.  
10 Q. So your testimony is that what you're  
11 still not clear on is why, if that occurred, why  
12 that occurred?  
13 A. Well, Mr. Owsley says it occurred. He  
14 says he used data that eliminated upgraded  
15 customers, and he has some understanding that he  
16 reveals in his report about that he understands  
17 that some upgraded customers receive their  
18 upgrades at no charge. And I believe he's wrong  
19 about that for reasons I explained this morning.  
20 So it's my conclusion that he doesn't  
21 understand the data he's using, didn't bother to  
22 ask about it apparently, and he's using that data

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1 without an understanding of exactly how that data  
2 was adjusted.  
3 Q. But I guess my issue is, is these are  
4 all -- you want to understand something better,  
5 but you don't know whether it has any impact on  
6 either your or Mr. Owsley's opinions either way,  
7 do you?  
8 MR. JONES: Object to the form.  
9 THE WITNESS: I do have an  
10 understanding of that, I think.  
11 BY MR. HICKOX:  
12 Q. What is that?  
13 A. Well, I did two analyses to try to  
14 bracket whether the adjustments, whatever they  
15 were, would have an effect on the analysis.  
16 One analysis I did is I isolated with  
17 the data that was presented to me, data that  
18 apparently Mr. Owsley did not use, daily data from  
19 January to June. I isolated the upgrade customers  
20 and noticed that they paid prices that were very  
21 much like the villa customers. So removing them,  
22 I'm not sure what the distortive effect would be

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1 there.  
2 But I did a second analysis to try to  
3 bracket my understanding or opinions about this,  
4 and I said that since I don't have a good  
5 understanding, and Mr. Owsley hasn't bothered to  
6 explain it to me, of what happened with the  
7 upgrade customers, I'm going to look at the hotel  
8 as a whole. Because I said "A dollar that you  
9 would remove from the villa because you say that  
10 these customers shouldn't be counted as part of a  
11 villa sale for some reason is still going to be a  
12 dollar that is not lost but a dollar that belongs  
13 to the hotel."  
14 So I did an analysis of the hotel as a  
15 total so no dollars would be lost. And when I did  
16 that analysis using his specification and time  
17 period in his model, I found that there was no  
18 Bulgari effect, in the words we've been using.  
19 Q. Turn to page 38 of your report.  
20 A. Okay.  
21 Q. The last sentence before the table  
22 says: "In this case, the T statistic is well

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1 below the critical level of 1.96 in absolute value  
2 necessary for the Bulgari Bali effect to be deemed  
3 statistically significant and different from  
4 zero." "Statistically significantly different  
5 from zero." Sorry.  
6 A. Okay.  
7 Q. So in this particular case, you're  
8 stating that because the T stat of the Bulgari  
9 Bali effect was lower than 1.96, you deemed it  
10 insignificant?  
11 A. That's what I'm saying there. One  
12 could do a one-sided test and reach the same  
13 conclusion as a two-sided test, but it's still  
14 well below the critical value needed.  
15 Q. You mentioned something before that you  
16 knew I was going to ask you about. And I think  
17 you said you talked with Mr. Smurzynski and  
18 Mr. Jones about it yesterday, which was your use  
19 of the dummy variables for the first bombing and  
20 the second bombing --  
21 A. Okay.  
22 Q. -- in your report.

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1 Why did you use a 15-month dummy  
2 variable for the first bombing and only a  
3 three-month dummy variable for the second bombing?  
4 A. Okay. A dummy variable is a variable  
5 which is -- has the values, let's say zero and  
6 one. It's a discrete variable and it's a variable  
7 we construct from an underlying phenomenon.  
8 And the idea of a bombing effect is the  
9 bomb goes off, and the question is: How long of  
10 an effect does that bomb have? And there are two  
11 controls for how long the effect is.  
12 We can think about 9/11 if we like and  
13 how long the economy has taken to -- how long the  
14 airline industry has taken to get back on track or  
15 something like that.  
16 So it's not just an instantaneous  
17 effect. It's an effect that will have some  
18 duration. And what's known about the bombings  
19 that took place in Bali is that the first bombing  
20 had a more dramatic effect on their economy than  
21 the second bombing. And I'm talking about  
22 October 2002 and I think October 2005.

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1 And the news articles that were written  
2 suggested a larger or a more larger duration  
3 effect of the first bombing.  
4 The first control in the regression  
5 model for bombing effects between the year 2000  
6 and 2007 are the visitor data from the Japanese  
7 and non-Japanese.  
8 And as I spoke about in the report, the  
9 visitor data demonstrates that individuals  
10 collectively, Japanese and non-Japanese, stopped  
11 coming to the island of Bali after the bomb went  
12 off, and that lasted for a long time.  
13 The question is, in this model, whether  
14 there is an additional impact of the bombing  
15 that's different between the Ritz-Carlton and the  
16 rest of the island.  
17 Now, why would that be? The  
18 Ritz-Carlton is only one hotel, and it's a hotel  
19 that caters to, to a significant degree, Japanese,  
20 but others. It's a hotel that caters to people  
21 with more money or are willing to spend more money  
22 on hotels.

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1 So it's plausible that those with  
2 higher incomes have other choices and can  
3 substitute other products. And so it's reasonable  
4 in theory to ask: Was there an additional  
5 Bulgari -- sorry, was there an additional bombing  
6 effect of some duration that would affect the  
7 demand at the Ritz-Carlton?  
8 In the case of the first dummy for the  
9 first bombing, I found that the Ritz-Carlton had a  
10 longer duration effect on top of the overall  
11 number of visitors to the island.  
12 And I experimented with different  
13 durations for additional effects, 12 months, 15  
14 months, 18 months. And I found that 15 months was  
15 about the time, according to the regression  
16 analysis, that was necessary or produced the best  
17 fit to the data.  
18 I also found that for the second  
19 bombing that a very short additional duration for  
20 the Ritz-Carlton was consistent with the data.  
21 Q. What data? What do you mean?  
22 Consistent with what data?

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1 A. Consistent with the data on the  
2 dependent variable and the independent variables,  
3 i.e., sales at the villas.  
4 Q. Did you do an analysis of any  
5 year-over-year percentage changes in Bali arrivals  
6 after both attacks?  
7 A. I may have approached it that way  
8 graphically. But the analysis I'm doing is within  
9 a regression analysis.  
10 Q. I understand that. And you stated that  
11 you -- the 15 months versus the three months  
12 seemed to fit the pattern better. But if, in  
13 fact, the year-over-year percentage changes in  
14 Bali arrivals after both attacks are relatively  
15 the same, why treat them with a 12-month  
16 difference in the impact?  
17 A. Because we're talking about the  
18 experience at the hotel, and those experiences can  
19 be different in the two time periods. People get  
20 used to bombs going off, I guess.  
21 Q. So it's your testimony that you used a  
22 15-month dummy variable, and a three-month dummy

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1 variable was a variable that reflected the impact  
2 of visitors to the Ritz-Carlton Bali as opposed to  
3 Bali overall?  
4 **A. It's the marginal influence on top of**  
5 **the visitor overall. Because both effects are**  
6 **present in the regression at the same time.**  
7 Q. What evidence do you have that there  
8 was any longer impact from the first bombing than  
9 there was from the second bombing, other than  
10 that's the better fit in your regression analysis?  
11 **A. It's also, as I wrote, consistent with**  
12 **my understanding of a newspaper article or two**  
13 **that I saw that said that people seemed to be**  
14 **getting used to the bombs going off and the**  
15 **recovery on the island as a whole was faster.**  
16 Q. Did any of those newspaper articles  
17 quote actual arrival statistics at either the  
18 Ritz-Carlton Bali or the island of Bali?  
19 **A. No. Island of Bali, yes, actually.**  
20 **Sorry.**  
21 Q. And those newspaper articles stated  
22 that the year-over-year percentage changes in the

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1 arrivals after the first bombing were 12 month --  
2 were statistically different than the  
3 year-over-year percentage arrivals after the  
4 second bombing?  
5 **A. They didn't -- I don't know what they**  
6 **analyzed. But within the context of the model I'm**  
7 **looking at, I treated the bombing in the**  
8 **appropriate way. If I were thinking about this in**  
9 **terms of year-over-year percentages, then my**  
10 **dependent variable would be a different variable.**  
11 Q. Let me ask a similar question. If in  
12 fact it turned out that the second bombing had the  
13 same impact with regard to arrival changes that  
14 had a 15-month impact as opposed to a three-month  
15 impact, how would that change any of your models  
16 or any of your opinions?  
17 **A. Well, I don't think it did, because the**  
18 **variable was statistically insignificant and**  
19 **ultimately dropped from the models. So you're**  
20 **asking me to postulate if the data hypothetically**  
21 **showed something in the regression model that it**  
22 **doesn't show, how would it effect it. I don't**

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1 **know. It's an incomplete hypothetical in your**  
2 **words.**  
3 Q. So ultimately the independent variable  
4 or the dummy variable you chose was statistically  
5 insignificant to your opinions and your analyses?  
6 MR. JONES: Object to the form.  
7 BY MR. HICKOX:  
8 Q. Did I say that right?  
9 **A. One bomb -- One bombing effect for**  
10 **October 2002, as I recall, had a statistically**  
11 **significant impact, a marginal impact above the**  
12 **other visitor data. The second did not, even**  
13 **though I gave -- I allowed the regression to -- I**  
14 **used both variables.**  
15 Q. And if in fact you used a 15-month  
16 dummy variable for the second bombing as opposed  
17 to a three-month variable, would that have made  
18 that variable statistically significant?  
19 **A. Oh, I doubt it. But I'm not even sure**  
20 **that a 15-month bombing effect for the second**  
21 **variable makes any logical sense. Because the**  
22 **bomb went off October 2005, so 15 months after is**

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1 **going to be early 2007. So we're talking about**  
2 **dummying out most of the rest of the data. So --**  
3 Q. Does that make the -- does that make  
4 the -- does that factor make the fact that -- Does  
5 that particular issue make it less likely or more  
6 likely -- Strike that.  
7 Does the fact that that would -- Does  
8 dummying out most of your data make it any less  
9 probable or improbable that the second bombing had  
10 just the same effect on arrivals as the first  
11 bombing?  
12 **A. Let me put it to you like this: If**  
13 **the -- If the data had jumped out at me**  
14 **differently with a significant -- Well, there is**  
15 **the possibility that in this data that the bombing**  
16 **effect could be confounded with the Bulgari**  
17 **effect, in which case some loss of sales, had**  
18 **there been any at the Ritz-Carlton, could have**  
19 **been due to the bombing. The regression analysis**  
20 **attempts to sort all that out.**  
21 Q. On page 12. I'm sorry. Footnote 15,  
22 you state that "RC Villa information was obtained

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1 from KMS documents," and you have a Bates range  
2 there. So you relied on the villa information  
3 obtained from that Bates range with regard to your  
4 findings, empirical findings?  
5 **A. Yes, ultimately I did.**  
6 **Q. Page 36.**  
7 **A. Yes.**  
8 **Q. Again, we've talked about this**  
9 **particular paragraph before. But am I right in**  
10 **concluding that you then criticized Mr. Owsley for**  
11 **relying on the data from that same page range of**  
12 **documents?**  
13 **A. That I did not criticize him?**  
14 **Q. That you did criticize him.**  
15 **Again, the daily data for 2007**  
16 **reported, and you used one Bates range, and you**  
17 **also have that same range referred to in Footnote**  
18 **15, between 287 and 289.**  
19 **You say, "As Mr. Owsley relies on the**  
20 **revenue figures from the latter source, his data**  
21 **apparently excludes individuals who had received**  
22 **upgrades."**

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1 So you both relied on the same data  
2 sources. Why do you criticize him and not  
3 yourself?  
4 **A. I may have lost you on the Bates**  
5 **ranges. You were in the text when you were**  
6 **talking?**  
7 **Q. Yeah. I'm sorry. I'll repeat that**  
8 **again.**  
9 **Back on page 12 at Footnote 15 you say**  
10 **that your empirical findings relied on KMS**  
11 **document 100000287 through 289.**  
12 **A. Uh-huh.**  
13 **Q. Then when we go to page 36, you**  
14 **criticize Mr. Owsley for relying on the data from**  
15 **that same document.**  
16 **A. Now we're on page 39, did you say?**  
17 **Q. I'm sorry, page 36.**  
18 **A. I see.**  
19 **Q. Page 36. You then say -- You say, "The**  
20 **daily data for 2007 reported in KMS 20 through 26**  
21 **revealed larger occupancies and lower average**  
22 **daily rates than the figures shown for 287 through**

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1 289. As Mr. Owsley relies on the revenue figures  
2 from the latter source," which would be 287 to  
3 289, "in his statistical analysis, his data  
4 apparently excludes individuals who had received  
5 upgrades from rooms to villas."  
6 **A. I'm with you now. I'm relying on the**  
7 **same data that he used because he's offering that**  
8 **data. And I've told you, I don't understand if**  
9 **adjustments were made, how they were made.**  
10 **What I did do was I undertook to**  
11 **examine some data that was in the record provided**  
12 **by Mr. Owsley that he did not look at, which were**  
13 **daily data where upgrades were included, and I**  
14 **also, as I mentioned before, bracketed my opinion**  
15 **by looking at the hotel as a whole.**  
16 **So in other words, I tried a variety of**  
17 **different things to make sure that, the best I**  
18 **could, that it was not a consequence of the**  
19 **upgrade information that was generating these**  
20 **results.**  
21 **But I could get to the same place**  
22 **exactly by relying on the Ritz-Carlton figures.**

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1 **They're slightly different in some cases, but I**  
2 **could get to that same place.**  
3 **Q. In your report you -- One of the**  
4 **criticisms you have of Mr. Owsley was that he was**  
5 **incorrect in omitting the revenues from the**  
6 **upgraded guests. We've talked at length about**  
7 **that. But one of the issues that you state was**  
8 **because you believed that the availability of the**  
9 **villas -- and I think the word you used was to**  
10 **handle spillover from the hotel.**  
11 **A. Uh-huh. Yes.**  
12 **Q. And therefore you believe that that**  
13 **allows the Ritz-Carlton Bali to earn extra**  
14 **revenues from -- by maximizing hotel occupancy**  
15 **because they know they can throw them over to the**  
16 **villas if need be.**  
17 **Do you recall that?**  
18 **A. There is a whole bunch of parts of that**  
19 **question. You're going to have to break it down,**  
20 **because the first part mischaracterized my**  
21 **opinion, and the second part I also think**  
22 **mischaracterized what I talked about. So maybe we**

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1 **could break that down into pieces.**  
2 Q. Well, let me ask you this: Did you  
3 include average daily rates for Ritz-Carlton Bali  
4 hotel rooms as an independent variable in your  
5 multivariate regression?  
6 A. **I did.**  
7 Q. And those were in Regressions 1, 2 and  
8 3?  
9 A. **Yes.**  
10 Q. But ultimately they weren't  
11 statistically significant?  
12 A. **That's correct.**  
13 Q. And then you just dropped them from the  
14 remaining regressions?  
15 A. **That's correct.**  
16 MR. HICKOX: Why don't we take a short  
17 break here, and then I'm going to wrap up when we  
18 come back with about another 40 minutes of  
19 questions.  
20 THE VIDEOGRAPHER: We are going off the  
21 record. The time is 11:34 a.m.  
22 (A recess was then taken.)

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1 THE VIDEOGRAPHER: We are back on the  
2 record. The time is 11:44 a.m.  
3 BY MR. HICKOX:  
4 Q. Mr. Dubin, I'm going to now circle back  
5 to sort of our discussion of sort of schooling on  
6 multivariate regression.  
7 A. **Okay.**  
8 Q. Are there any general assumptions you  
9 make in just sort of non-multivariable regression  
10 analysis? What did you call it before?  
11 Two-variable regression? Are there certain  
12 fundamental assumptions you make?  
13 If you don't understand the question,  
14 let me rephrase it a different way, specifically  
15 about multivariate regression.  
16 Is it true to state that one of the  
17 assumptions you have to make in multiple  
18 regression analysis is that the number of  
19 observations has to exceed the number of  
20 independent variables by at least two?  
21 A. **You have to have positive degrees of**  
22 **freedom to render a regression, otherwise the R**

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1 **squared would be one.**  
2 Q. Right. So you have to have -- It has  
3 to exceed the independent variable by at least two  
4 or you'll get less than one?  
5 A. **Depending on how we're counting the**  
6 **constant term. I mean, I could have one**  
7 **observation and one variable being the constant**  
8 **term, and I could run a regression, and that's a**  
9 **case where the number of observations and the**  
10 **number of variables is equal to -- they are equal**  
11 **to each other and the regression will run with an**  
12 **R squared of 100 percent.**  
13 Q. It's not very useful?  
14 A. **I mean, it is what it is.**  
15 Q. Is it -- Another assumption is that in  
16 multivariate regression the independent variables  
17 can't be linearly related?  
18 A. **There cannot be a perfect correlation**  
19 **or perfect linearity among the linearly -- the**  
20 **linear set of independent variables, otherwise the**  
21 **regression will not execute.**  
22 Q. If that happens, is that term called

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1 multicollinearity?  
2 A. **There's degrees of this concept called**  
3 **multicollinearity. I think the case we were**  
4 **talking about was perfect multicollinearity where**  
5 **there is a linear dependence among factors.**  
6 Q. What is multicollinearity, then?  
7 A. **Multicollinearity is a phenomenon where**  
8 **one variable or multiple variables are linearly**  
9 **related to another set of variables in a very**  
10 **close way. And I'll give you an example.**  
11 **For instance, if we were doing a**  
12 **cross-sectional analysis of men and women, or boys**  
13 **and girls in the previous subject we were talking**  
14 **about of weights and heights, a perfect**  
15 **multicollinearity would be a dummy variable for**  
16 **boys and a dummy variable for girls in that**  
17 **regression in the presence of a constant term.**  
18 **Because if you know a child is a boy, you**  
19 **typically will conclude it's not a girl. So those**  
20 **two variables are perfectly linearly related;**  
21 **knowing one tells us the other.**  
22 **On the other hand, near**

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1 multicollinearity would be you've attempted a boy  
2 factor and a girl factor but someone made a typo  
3 entering the data and coded one observation as a  
4 seven as opposed to a one or a zero. In that  
5 case, it may be the case that the boy and girl  
6 factor are not perfectly correlated but they're so  
7 closely correlated to one another that the  
8 regression will misbehave itself.

9 Q. Let me give you a quote from the  
10 Maddala econometrics textbook that you reference  
11 in your report, and I want to see if you agree  
12 with it.

13 A. 1977 textbook?

14 Q. 1977. And the quote is:  
15 Multicollinearity, quote, "refers to a situation  
16 where, because of strong interrelationships among  
17 the independent variables, it becomes difficult to  
18 disentangle their separate effects on the  
19 dependent variable."  
20 Do you agree with that statement?

21 A. Well, it's a little vague. He's saying  
22 it becomes difficult. He's not saying whether

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1 it's impossible or whether it's borderline  
2 impossible.

3 And that textbook doesn't really get  
4 into the advanced concept of condition number for  
5 a regression which measures the degree of  
6 numerical accuracy or inaccuracy that's caused by  
7 multicollinearity.

8 Q. So do you disagree or agree with the  
9 statement?

10 A. I find the statement vague. So I don't  
11 know if I -- It's partially correct. It's not the  
12 whole story.

13 Q. Do you agree that when two variables  
14 are highly correlated that they're basically  
15 measuring the same phenomenon or construct?

16 A. It depends on what "highly correlated"  
17 means in a particular instance.

18 Q. Okay. So it depends on what the  
19 measure of correlation is?

20 A. It depends -- Simple correlation  
21 between two variables is not the end of the story  
22 for multicollinearity. It's the beginning of the

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1 story, or it's part of the story.

2 Q. Well, when do you exhibit high  
3 multicollinearity? What are some of the tests for  
4 that?

5 A. Looking at the rank deficiency of the  
6 so-called X prime X matrix, the matrix of  
7 explanatory variables and their cross-products.

8 Q. It's a correlation matrix?

9 A. No.

10 Q. Is that one way to do it?

11 A. No.

12 Q. Correlation matrix is not a way to  
13 measure multicollinearity?

14 A. Correlation matrix allows one to look  
15 at pairwise correlations but not higher order  
16 dimensional problems of the type of  
17 multicollinearity that regressions will fail on.

18 Q. You don't agree that intercorrelation  
19 among independent variables above 0.8 in absolute  
20 value signals a problem in multicollinearity?

21 A. I've had many -- No, I don't think I  
22 would agree that simple pairwise correlations

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1 necessarily at the .08 level indicate  
2 multicollinearity that's severe enough to  
3 necessarily worry about.

4 Your mileage may vary, so you have to  
5 be a competent analyst. You have to do the  
6 more -- the better or more advanced tests to  
7 really know if multicollinearity is a problem for  
8 regression.

9 Q. Well, do you agree that, you know,  
10 intercorrelation of independent variables above  
11 0.8 in absolute value would indicate a possible  
12 problem with multicollinearity, something you have  
13 to look at?

14 A. I don't think I worry about --  
15 Depending on the variables, I don't think I worry  
16 necessarily about 0.8. It's possible.

17 Q. What about variance inflation factor?  
18 Do you know the term "variance inflation factor"?

19 A. No, I don't.

20 Q. You don't know VIF?

21 A. No.

22 Q. You've never used that to test for

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1 multicollinearity in your analyses?  
2 A. No.  
3 Q. Would the existence of a high R squared  
4 and significant F test in combination with not  
5 significant T test indicate -- possibly indicate a  
6 multicollinearity problem?  
7 A. **Not necessarily.**  
8 Q. Why not?  
9 A. **Because they're different concepts.**  
10 Q. Would it possibly indicate a problem?  
11 A. **Anything is possible.**  
12 Q. When is multicollinearity too high?  
13 A. **When the condition number of the matrix**  
14 **of explanatory variables leads to numerical**  
15 **instability so that small changes in the**  
16 **right-hand -- in the explanatory variable will**  
17 **cause large perturbations in the measured effects.**  
18 Q. Is there no specific test you can refer  
19 the jury to that you look at to see whether or not  
20 your regression models that you run have high  
21 multicollinearity?  
22 A. **I did refer to one. It's called the**

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1 **condition number of the explanatory variable**  
2 **matrix.**  
3 Q. And is there any specific percentage or  
4 value or something that's generated by that test  
5 that you can look at and say, "Well, if that value  
6 or percentage or whatever it may be is above X,  
7 then I need to look at this"?  
8 A. **Oh --**  
9 Q. How is that expressed, in other words?  
10 A. **For a normalized matrix, meaning one**  
11 **where the factors are rescaled to have so-called**  
12 **unit length, as I recall, condition numbers above**  
13 **30 may indicate collinearity, but I'm doing that**  
14 **off the top of my head.**  
15 Q. Did you test for multicollinearity in  
16 your regression models 1 through 10?  
17 A. **I tested it as a practitioner would.**  
18 **In other words, I looked at the -- I look at the**  
19 **data. I looked to see how the factors are**  
20 **reacting in the data series. I look for**  
21 **correlations or I think about the variables.**  
22 Q. Did you do the test you described to us

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1 earlier before?  
2 A. **I don't think I ran a conditional**  
3 **re-test, no.**  
4 Q. Did you run any other test?  
5 A. **No.**  
6 Q. If high multicollinearity exists, do  
7 you agree that one of the problems with that is  
8 that you can't get reliable estimates with regard  
9 to whether or not your independent variables are  
10 really impacting the dependent variable?  
11 A. **You can get large swings in**  
12 **coefficients for small changes in the independent**  
13 **factors that makes it difficult to distinguish one**  
14 **factor from another in certain cases.**  
15 Q. And how it's impacting on the dependent  
16 variable?  
17 A. **Correct.**  
18 Q. How do you handle multicollinearity  
19 problems when they arise?  
20 A. **Well, you can look back at your data**  
21 **and ask the question: "Is there an obvious**  
22 **misspecification?" In other words, was there a**

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1 **data entry error so that the presence of the**  
2 **multicollinearity was introduced by accident, and**  
3 **you can eliminate a factor that was included**  
4 **incorrectly.**  
5 **A second technique to break the**  
6 **collinearity problem is to combine variables.**  
7 **And a third technique is to get more**  
8 **information, more data.**  
9 **But if a theory tells you that certain**  
10 **variables belong in a model, the combination of**  
11 **factors is really not an option.**  
12 Q. But in that particular case, then, the  
13 model you had might have less explanatory power  
14 than would otherwise be if high multicollinearity  
15 exists?  
16 A. **Well, the model has whatever**  
17 **explanatory power it has. I mean, we talked about**  
18 **multicollinearity in the extreme case as being one**  
19 **where the individual influence of particular**  
20 **factors is not well explained.**  
21 Q. Do you know whether any of your  
22 regression models 1 through 10 exhibit strong

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1 correlations between the independent variables?  
2 **A. Between the dependent variables?**  
3 **Q. The independent variables. As you sit**  
4 **here today, do you know whether they do or not?**  
5 **I'll repeat the question.**  
6 **As you sit here today, do you know**  
7 **whether any of your regression models 1 through 10**  
8 **exhibit strong correlations between independent**  
9 **variables?**  
10 **A. Well, I'm not sure we have a definition**  
11 **going of "strong correlation," but it wouldn't**  
12 **surprise me if the non-visitor and the visitor**  
13 **data are correlated with one another.**  
14 **Q. What would be your definition of a**  
15 **strong correlation between the independent**  
16 **variables?**  
17 **A. Between the independent variables?**  
18 **Q. Uh-huh.**  
19 **A. Marginal correlation between --**  
20 **Q. Strong.**  
21 **A. Strong --**  
22 **Q. What would be your definition of**

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1 marginal versus strong correlation?  
2 **A. I wouldn't give you one.**  
3 **Q. Okay. Do you know whether any of your**  
4 **models exhibit a higher R squared even though the**  
5 **T stats on a majority of the independent variables**  
6 **in the models are low?**  
7 **A. T stats on the variables are low? As I**  
8 **mentioned before, there are some variables in my**  
9 **models that have low T stats that I left in, like**  
10 **seasonality and the R squareds continue to be**  
11 **high. That's something I'm worried about.**  
12 **Q. I'll ask you the precise question**  
13 **again --**  
14 **A. Okay.**  
15 **Q. -- and see if you can answer it.**  
16 **Do you know whether any of your models**  
17 **exhibit a higher R squared even though the T stats**  
18 **on the majority of the independent variables used**  
19 **are low?**  
20 **MR. JONES: Object to the form.**  
21 **BY MR. HICKOX:**  
22 **Q. Do you not understand my question?**

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1 **A. Well, if by "majority" you mean more**  
2 **than 50 percent of the variables?**  
3 **Q. Uh-huh.**  
4 **A. It's irrelevant to me. And I haven't**  
5 **counted that, no.**  
6 **Q. So you don't know?**  
7 **A. I don't know.**  
8 **Q. And you --**  
9 **A. I haven't counted that.**  
10 **Q. And you think it's irrelevant if that's**  
11 **true?**  
12 **A. Absolutely irrelevant.**  
13 **Q. Why would it be irrelevant?**  
14 **A. Because the variables are, for the most**  
15 **part, as I report them in the models I depend on**  
16 **in the end, 8 and 10 are, as I look at them here,**  
17 **all statistically significant, largely**  
18 **significant, with the exception of the Bulgari**  
19 **dummy variable, and some that are not in this**  
20 **table which are seasonal effects.**  
21 **And I've said several times that I'm**  
22 **doing the appropriate procedure for controlling**

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1 **for seasonality, and some of those seasonal**  
2 **variables are statistically significant, and it**  
3 **doesn't bother me in the least that some are not,**  
4 **because they're picking up marginal effects of**  
5 **seasonality relative to the overall seasonality in**  
6 **the visitor data.**  
7 **Q. I think I know the answer to this**  
8 **question because it's a question I asked you**  
9 **before, but I need to ask this anyway. Do you**  
10 **know whether or not any of your models exhibit**  
11 **high variance inflation factors?**  
12 **A. I don't know. There's a variety of**  
13 **proxies out there to detect multicollinearity.**  
14 **Q. As we sit here today, you don't know**  
15 **whether any of your models exhibit high -- exhibit**  
16 **any level of multicollinearity, do you?**  
17 **A. I do these regressions like I've done**  
18 **all others. I don't see any problem with**  
19 **multicollinearity in this data.**  
20 **Q. And you base that statement on what?**  
21 **A. On my experience running regressions,**  
22 **and the thinking I did about the factors that are**

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1 **included in the final model.**  
2 Q. But you said there were a variety of  
3 proxies out there to detect multicollinearity.  
4 Did you run any of those proxies?  
5 A. **The actual mechanical tests, no.**  
6 Q. You mentioned before about how you  
7 talked about seasonality variables, and you  
8 mentioned it in connection with our discussion  
9 here about multicollinearity. You used 11  
10 seasonality variables in your models; is that  
11 correct?  
12 A. **There are 11 dummy variables, yes.**  
13 Q. And the fact that only four to five of  
14 those are statistically significant as measured by  
15 T stat, that doesn't present a problem for you?  
16 A. **Not at all.**  
17 Q. Okay. Does that increase  
18 multicollinearity, that fact?  
19 A. **No.**  
20 Q. It doesn't?  
21 A. **It shouldn't.**  
22 Q. The two primary variables, what were

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1 they? Japanese arrivals and rest of the world  
2 arrivals? The two primary arrival variables -- my  
3 mistake -- that you use.  
4 A. **There's only two arrival variables.**  
5 Q. And your Japanese arrivals have been --  
6 A. **Non-Japanese. In logarithmic form,**  
7 **yes.**  
8 Q. Now, aren't those two primary variables  
9 driven by seasonal patterns?  
10 A. **They have a seasonal component to them,**  
11 **yes.**  
12 Q. So wouldn't that already -- Wouldn't  
13 that seasonal component already be flagged by your  
14 seasonality variables?  
15 A. **Would it be --**  
16 Q. Do you understand what I mean by  
17 "flagged"?  
18 A. **No.**  
19 Q. Okay. Well, you use two -- one of your  
20 two primary -- The two primary arrival variables  
21 were Japanese arrivals and rest of the world  
22 arrivals, and you also include a number of

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1 seasonality variables. But wouldn't the  
2 seasonality patterns already be built into your  
3 arrival variables?  
4 A. **Oh, I thought that might be the**  
5 **concept. The answer is no because seasonality on**  
6 **the island may be different slightly than**  
7 **seasonality at the Ritz-Carlton. And we're**  
8 **modeling the Ritz-Carlton, not the island.**  
9 Q. So the Japanese arrivals and rest of  
10 the world arrival variables only deal with the  
11 Ritz-Carlton arrivals?  
12 A. **No, they deal with the island.**  
13 Q. Again, so I'm asking you, so wouldn't  
14 those have built in already the concept of  
15 seasonality patterns?  
16 A. **They have some seasonality patterns.**  
17 **Seasonality for everyone visiting the island. But**  
18 **many, many people visit the island. A small**  
19 **fraction of them go to the Ritz-Carlton, and those**  
20 **who go to the Ritz-Carlton may be staying in a**  
21 **slightly different fashion at the Ritz-Carlton**  
22 **than other visitors.**

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1 Q. But nevertheless, wouldn't there be  
2 some correlation between your arrival variables  
3 and your seasonality variables?  
4 A. **Yes, there might be.**  
5 Q. Do you know the degree of that  
6 correlation?  
7 A. **No.**  
8 Q. You mentioned capacity, and you agree  
9 that you find that revenues are correlated with  
10 capacity?  
11 A. **Yes.**  
12 Q. The more rooms the resort operates, the  
13 higher its revenue?  
14 A. **Yes.**  
15 Q. If the Ritz-Carlton Bali had expanded  
16 its villa base in the last 18 months, would that  
17 have increased its revenues?  
18 A. **It might. It should. Otherwise I**  
19 **wouldn't expect them to expand it.**  
20 Q. That would be your prediction based on  
21 your models?  
22 A. **Yes. But capacity increases are**

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1 **endogenous. They're done for a reason. A bigger**  
2 **airplane is put on because there is an expectation**  
3 **that there is demand to fill it. And a hotel's**  
4 **size is increased because there is an expectation**  
5 **that money can be made, or that there are reasons**  
6 **that capacity is limiting the money that is being**  
7 **made on the existing hotel.**  
8 Q. And the opposite is true, too. The  
9 capacity -- decisions not to increase capacity may  
10 be based on the fact that -- on reasons such as  
11 you might not be able to fill those rooms?  
12 A. **That's a consideration as well, sure.**  
13 Q. You don't have an opinion with regard  
14 to -- Well, strike that. Let me lay a foundation.  
15 Do you know the term "Ritz-Carlton  
16 rights" as it's used in the amended and restated  
17 operating agreement?  
18 A. **I've read them.**  
19 Q. Does your understanding of that term  
20 have any impact on any of your opinions in your  
21 supplemental report?  
22 A. **No.**

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1 Q. So your report doesn't purport to  
2 reflect any impact that the use of -- by the  
3 defendants of the Ritz-Carlton rights to open or  
4 operate the Bulgari Bali might have had on -- fill  
5 the revenues at the Ritz-Carlton Bali?  
6 A. **The supplemental report does not**  
7 **concern itself with that.**  
8 Q. Okay. And you don't have any data with  
9 regard to how or if those might have been -- the  
10 Ritz-Carlton rights might have been used by  
11 defendants to open or operate the Bulgari Bali?  
12 A. **I don't.**  
13 Q. That's not part of the variables that  
14 are dependent or independent that are in your  
15 regression analyses?  
16 A. **That's correct.**  
17 MR. HICKOX: Thank you, sir. I'm done.  
18 THE WITNESS: Okay.  
19 MR. JONES: I have no questions.  
20 THE VIDEOGRAPHER: This marks the end  
21 of the deposition. We are going off the record.  
22 The time is 12:03 p.m.

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1 (Whereupon, the deposition was concluded at  
2 12:03 p.m.)  
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1 **WITNESS CERTIFICATE**  
2  
3 I, JEFFREY A. DUBIN, Ph.D., have read or have had  
4 the foregoing testimony read to me and hereby certify  
5 that it is a true and correct transcription of my  
6 testimony with the exception of any attached  
7 corrections or changes.  
8  
9 \_\_\_\_\_  
10 JEFFREY A. DUBIN, Ph.D.  
11  No corrections  
12  Correction sheet(s) enclosed  
13  
14 SUBSCRIBED AND SWORN TO BEFORE ME, the  
15 undersigned authority, by the witness, JEFFREY A.  
16 DUBIN, Ph.D., on this the \_\_\_\_ day of  
17 \_\_\_\_\_, \_\_\_\_\_.  
18  
19 \_\_\_\_\_  
20 NOTARY PUBLIC IN AND FOR  
21 THE STATE OF \_\_\_\_\_  
22 My Commission Expires: \_\_\_\_\_

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1           REPORTER'S CERTIFICATE

2

3           I, the undersigned Registered Professional

4 Reporter and Notary Public, do hereby certify that

5 JEFFREY A. DUBIN, Ph.D., after having been first

6 duly sworn by me to testify to the truth, did

7 testify as set forth in the foregoing pages, that

8 the testimony was reported by me in stenotype and

9 transcribed under my personal direction and

10 supervision, and is a true and correct transcript.

11           I further certify that I am not of

12 counsel, not related to counsel or the parties

13 hereto, and not in any way interested in the outcome

14 of this matter.

15           SUBSCRIBED AND SWORN TO under my hand and

16 seal this 2nd day of November, 2007.

17

18 \_\_\_\_\_

19 JOHN L. HARMONSON, RPR

20 Notary Public in and for

21 the District of Columbia

22 My Commission Expires: 10/14/2010

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1           CHANGES AND SIGNATURE

2 PAGE LINE	CHANGE	REASON
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